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Making Connections*

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Foreign language learning should be an integral part of every student's schooling. Not only can and should all students benefit from learning another language, but all students should have opportunities to see how language use is rooted in and linked to most of what we learn. Goal 3 of the National Standards addresses this important aspect of language learning with its emphasis on connections to other disciplines and the use of the foreign language to acquire information.

A Rationale for the Connections Goal

The two standards under the Connections goal state:

> Standard 3.1: *Students reinforce and further their knowledge of other disciplines through the foreign language.*
>
> Standard 3.2: *Students acquire information and recognize the distinctive viewpoints that are only available through the foreign language and its cultures.*

The Connections goal fits well with trends in many areas of the curriculum. Across the educational landscape, notions of integrated curriculum and interdisciplinary instruction are increasingly prevalent. In many schools, teachers plan integrated thematic units that draw on multiple subject areas. Some teachers work independently; others work collaboratively in teams.

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Integrating content from across disciplines helps students see the connections among all that they are learning in all aspects of the curriculum. It also reflects the growing belief that much of school learning should parallel the demands of authentic, real-life tasks, in which problems are rarely solved by drawing on knowledge or skills from only one domain—there are few pure science problems in real life. Rather, in real life students will need to use knowledge, understandings, and skills acquired from many areas to carry out the demands of their personal lives, their jobs, and their civic responsibilities. Similarly, foreign language will be a tool for students to use to acquire information or to carry out tasks in the real world beyond the classroom.

Theoretical Basis for the Connections Standards

Current research suggests that the human brain is programmed to make meaning from experience. This wired-in orientation to seeking connections between the known and the unknown has some natural implications for how schools can facilitate student learning (Caine and Caine 1991; Jensen 1998). Constructivist theory, a conceptualization of learning that has recently driven educational reform in many disciplines, holds that learners construct their own understandings by giving meaning to information and experience. Learners achieve this by linking new knowledge to what they already know, thus making meaning out of each new experience. Moreover, learning will be deeper and more powerful if learners can see the relationships among the parts of learning and the whole—the broader context of their knowledge and experience (Brooks and Brooks 1993; Caine and Caine 1991; Hawkins and Graham 1994). These relationships are stored in networks in the brain, so that understandings are linked to one another not only within networks but also through the links between and among the networks themselves.

This view is in contrast to more traditional approaches in which learning was conceptualized as the accumulation of bits of knowledge, which eventually led to an understanding of the whole. From a constructivist perspective, learners will benefit from understanding the relationship of the whole to its parts from the start. Making connections among the various areas of the school curriculum will help students see the interrelationships among them and strengthen learning in each. Students learn more quickly and retain learning longer when they see how new information and/or experiences relate to what they already know and how the parts of learning relate to a broader context—in this case, the total school curriculum. The more students know, the more hooks onto which they can peg new learning.

Background knowledge, stored as relationships among information and understandings in the brain, is the context for new learning and plays an important role. The role of context in learning may be compared in some ways to doing a jigsaw puzzle. Looking at the picture on the box of a jigsaw puzzle makes the puzzle easier to complete—it gives an idea of where certain pieces might go and how sections of the puzzle relate to one another. Context in learning, and background knowledge, can be likened to the "big picture." Context aids learning just as completing the border of the jigsaw puzzle facilitates puzzle completion. Imagine working a 1,000-piece puzzle and picking just one piece out of the box. In deciding where that piece might go, we might look at the picture to match the piece's color to it. We might also look at which sections have been completed to see how the individual piece fits with other pieces. Imagine how much more difficult it would be to complete the puzzle if one began by selecting several pieces at random from the box and worked the puzzle around those pieces, without ever looking at the picture on the box or completing the puzzle frame first. From the learner's perspective, the bits of information acquired in various subjects can be equally difficult to mesh together into deep conceptual understanding. From the instructional perspective, puzzle completion strategies may be analogous to how teachers can promote learning. Teachers can provide appropriate opportunities for students to make connections between material to be learned in one discipline and that in another (helping students see how the sections of the puzzle connect with one another, how one piece of information relates to other pieces that have a good "fit" in terms of shape, color, etc.).

Another implication of the role of context in constructivist theory is that learning is enhanced when it is authentically linked to meaning and purpose. Context is found in real-life tasks, and real-life tasks always have a meaning and a purpose. Authentic experiences and situations require learners to put knowledge to purposeful use, whether it is using the formula for the area of a rectangle to determine how much carpeting to buy or using known vocabulary, grammar rules, and cultural knowledge to communicate effectively with a native speaker of another language. In the real life of schools and beyond, language is an essential tool for learning and acquiring information. Using language for content learning and to acquire information is therefore a real-life task. Thus, the theoretical basis for authentic tasks that drives curriculum reform across disciplines also provides a strong conceptual rationale for making connections to other disciplines and using language to acquire information in foreign language education.

Further evidence for integrating language and content is provided by depth-of-processing and discourse comprehension processing research. Grabe and Stoller (1997) cite studies that show that "the presentation of coherent and meaningful information leads to deeper processing, and that deeper informational processing results in better learning" (10). They also cite studies that demonstrate that "more coherently presented information, in terms of thematically organized material, is easier to remember and leads to improved learning" (11).

Connections from a Communicative Perspective

For almost two decades second- and foreign-language educators have emphasized communication as the primary focus of instruction. The terms "communicative language teaching" and "proficiency-based instruction" share a common focus: to prepare learners to use language to communicate effectively in a variety of contexts and settings through classroom experiences that simulate real-world language tasks and uses. Instructional approaches that derive from this focus include opportunities for students to communicate about topics of interest to them. Much of language learning in entry-level classes involves having students talk about familiar topics. Often, students spend much of class time interacting with peers as they describe their personal characteristics, family, leisure-time pursuits, and so on. Clearly, these are topics that will allow language learners to function in an authentic situation outside the classroom, albeit in a limited way, after only a short period of study. Communicative language teaching, in contrast to its predecessors, should seriously reduce the number of former students who querulously claim that they can do nothing in the language after two years of study.

Communicative language teaching and learning are consistent with constructivist approaches. The growth of such holistic approaches (as opposed to structural/analytic approaches) can be seen in the increasing prevalence of communicative language teaching, and the commensurate decline of grammar-driven language programs. As noted earlier, communicative language teaching has among its premises that the purpose of learning a language is to use it in authentic spoken or written interactions—"authentic" being defined as real-life interactions that involve real-life meanings exchanged for real-life purposes. Certainly, in schools, using language to learn content (that is, talking about things other than language itself) has real purposes and involves real meanings.

In both constructivist theory and communicative language teaching, meaning and context play a critical role. Students are most likely to be

successful learners if the tasks they engage in require attention to meaning. Grammar is more likely to be understood when we see how the rules affect meaning, and vocabulary is more likely to be successfully learned in context. Ryan (1994) argues cogently that the interpretation and construction of meaning are context-dependent, and that meaning and context are thus vital to the acquisition of communicative competence. Decontextualized drill and practice in which form, but not meaning, is the focus may be less helpful to learners than communicative tasks that require attention to meaning. In decontextualized drill and practice, students manipulate vocabulary and grammar to improve their knowledge of vocabulary and to perfect the production of forms and rules, with little or no attention to meaning. In contrast, in content-based instruction, students use vocabulary and grammar to interpret or convey ideas and concepts. In content-based instruction meaning is always the focus of instruction, learning experiences, and tasks. Students need to communicate with the teacher, one another, or texts, in order to access or apply content. Integrating language and content, therefore, is not just consistent with communicative language teaching; it is likely to promote the development of communicative competence.

Not only does content give learners something meaningful and purposeful to talk/write about, it also expands the range of topics about which learners can communicate. If the goal of proficiency-based instruction/ communicative language teaching is to prepare students to communicate on topics beyond the classroom setting, learners will need a wide repertoire of language. While it may be useful to be able to talk about oneself (one's interests, family, or personal characteristics), at some point students have to go beyond talking about themselves and talk about the world of ideas. Indeed, in some cultures it may even be inappropriate to be so conversationally egocentric, and students will need to be able to talk about more than themselves if they wish to establish and maintain social relationships with native speakers. Making connections to other disciplines will give students the language tools they need.

Using language to acquire information is also a natural extension of communicative approaches to language teaching. If communicative approaches aim to prepare students to communicate their own ideas about topics of interest to them, it stands to reason that not all learners will want to talk about the same thing. This means more than simply allowing students to develop a personalized vocabulary (e.g., allowing some students to learn to say "in-line skating" because it is their favorite sport, while requiring everyone to learn the names of five common pastimes). It also means that the topics students will want to talk about will reflect personal interests, whether academic or not. Some students may be interested in medieval history, others in the

martial arts, still others in contemporary cinema or the World Federation of Wrestling. Addressing the diverse interests of learners and preparing them to communicate about them will promote language learning.

Current Trends in Interdisciplinary Instruction

Given the strong theoretical basis for making connections between and among disciplines, it should not be surprising that curriculum integration has been a trend in both general education and in foreign language education for some time.

Interdisciplinary Instruction and Curriculum Reform

In general education, both elementary and middle school curriculum reform have seen increasing emphasis on integrated instruction. In elementary schools, thematic instruction is common. Because in elementary schools one teacher usually teaches all subjects to students, coordinating learning outcomes from many subjects is easier than when several teachers must collaborate. For teachers who spend the whole day with the same students, bells do not suggest the mental breaks between disciplines that may characterize high schools. In an integrated elementary school program, students may be learning about how industrial waste can cause pollution in local waterways (science). They may acquire knowledge about the legislative process (social studies) as they determine how to restrict the disposal of toxic chemicals, and they may write to their local state representatives to state their views on pending legislation (language arts). Clearly, making connections between foreign languages and the curriculum is in keeping with curriculum trends at the elementary school level.

Curriculum restructuring at the middle school level has also seen growing emphasis on thematic, integrated instruction. Many middle schools are organized into teams, and each team is likely to have one teacher from each of several disciplines. Most commonly, a middle school teaching team has representation from reading/language arts, social studies, science, and mathematics, although other configurations are found as well. Often, teams will plan interdisciplinary units in which a theme (such as *Water, Change,* or *Aviation*) serves as the focal point for instruction in each subject (see Jacobs 1989; Messick and Reynolds 1992; Palmer 1991; and Vars 1987 for further discussion and additional examples). Consonant with a constructivist viewpoint, these interdisciplinary approaches provide an organizing principle as well as authentic, meaningful experiences to drive student learning. In fact, it has been suggested that the middle school curriculum be designed around

the real-life issues and problems that students need and want to solve (Beane 1992). Integrating foreign languages and content at the middle school fits with the basic tenet of middle schools: it brings languages into the "core" curriculum and language teachers into the heart of the school's program.

In high schools, current reform efforts also include interdisciplinary approaches. For example, the culminating exhibitions favored as a graduation requirement in the Coalition for Essential Schools require students to demonstrate learning across disciplines (Sizer 1992). Of course, interdisciplinary instruction in high schools is not limited to current models. As long as thirty years ago, some high schools scheduled students into linked English and social studies or math/science classes that were taught by collaboration teacher teams.

Teaching Language through Content and Content through Language

Within the language teaching profession, content-based instruction has become increasingly popular at all levels of instruction (Snow 1998). In elementary schools, content plays an important role in language teaching. Immersion programs, in which content learning is central, grew from one elementary school in the United States in 1974 to over 165 in 28 states and the District of Columbia by 1997 (Center for Applied Linguistics 1997). The professional literature, as well as anecdotal reports from elementary school foreign language teachers, indicates an important role for content in many nonimmersion programs as well (Curtain and Pesola 1994). Content-based ESL is also found in elementary settings (Cantoni-Harvey 1987; Crandall and Tucker 1990; Snow 1998).

At the postsecondary level, interest in integrating content and language has been evidenced by a growing number of programs that fall under the rubric of Foreign Language Across the Curriculum (FLAC). In these programs, students may take courses taught in a foreign language, or courses in which collaboration between instructors in language and other courses involves students in using language to learn or reinforce learning in other disciplines (Allen, Anderson, and Narvaez 1992; Brinton, Snow, and Wesche 1989; Jurasek 1998; Krueger and Ryan 1993; Snow and Brinton 1997; Straight 1994). In a parallel vein, many postsecondary English for Academic Purposes programs are designed for nonnative speakers of English to allow them to gain skills in both course content at their institution and the language needed for academic successes (Carson, Taylor, and Fredella 1997; Snow 1997).