

work of Lev Semenovich Vygotsky (1896–1934), a well-known Russian psychologist. Vygotsky coined the phrase *zone of proximal development* to refer to the point at which the learner needs assistance to continue learning. According to this view, effective instruction neither exceeds the learner's current level of understanding nor underestimates the learner's ability to learn independent of the teacher. The effective teacher varies the amount of help given to learners

on the basis of their moment-to-moment understanding. If they do not understand an instruction given at one level, then more help is forthcoming. When they do understand, the teacher steps back and gives the child more room for initiative. In this way, the child is never left alone when he [or she] is in difficulty nor is he [or she] "held back" by teaching that is too directive and intrusive. (Wood, 1988, p. 81)

## LEARNING STYLES

Much of the recent research on learning focuses on students' learning styles—that is, the approaches to learning that work best for them. Put differently, *learning styles* refers to individuals' typical ways of processing information and seeking meaning. These differences have also been called *learning modes*, *learning style preferences*, or *cognitive styles*. In "How Boys Learn" in this chapter, Michael Gurian and Kathy Stevens explore the "mismatch" between boys and conventional education, and they call for greater support for the ways boys learn. However, in "Where the Girls Are: The Facts about Gender Equity in Education" in this chapter, Christianne Corbett, Catherine Hill, and Andresse St. Rose maintain that there is no "crisis" in the education of boys. Their conclusions are based on the American Association of University Women's landmark study that summarizes decades of research on the relationship between gender and academic achievement.

Students' preferred learning styles are determined by a combination of hereditary and environmental factors. Some learners rapidly acquire new knowledge that they encounter; others learn best when they are independent and can shape their own learning. Some learn best in formal academic settings, while others learn best in informal, relaxed settings. Some learners require almost total silence, while others learn well in noisy, busy environments. Some learn intuitively, while others learn best in a step-by-step, linear, concrete fashion.

Learning style is an emerging concept, and there is no single "correct" view of learning styles to guide curriculum planners. Within the last decade, much research has been conducted on students' preferred learning styles, and scores of conceptual models and accompanying learning-style assessment instruments have been developed. Critics have pointed out flaws in many learning-style schemes and maintain that there is little evidence to support their validity (Snider, 1990, 1992). Moreover, as Ellyn Lucas Arwood points out in "The Neuroeducation of Learning: Learning Systems, Not Styles" in this chapter, "learning styles refer to preferences for education, not to how children actually learn." Nevertheless, curriculum leaders should be aware of the concept of learning styles and realize that some curricula may be more effective for some students than for others. In addition, though preferences for learning styles can be strong, they can also change as a person matures.