This chapter therefore begins with Ausubel, proceeds to schema theory, and concludes with practical implications of both, with particular emphasis on teaching for understanding. This juxtaposition should help you better judge their competing claims as well as determine what these theories explain that theories presented in prior chapters do not.

Ausubel's Meaningful Reception Learning

Meaning, according to Ausubel, is not something that resides "in the text" and outside the learner. He considered textual materials, like anything else learners might experience, to be "potentially meaningful." Meaning occurs when learners actively interpret their experiences using certain internal, cognitive operations. To account for these cognitive operations and how they interact with experience to give rise to learning, Ausubel proposed a theory of meaningful, reception learning (Ausubel, 1962, 1963a, 1968; Ausubel, Novak, & Hanesian, 1978).

As a means of differentiating the types of learning that go on in typical classrooms, Ausubel (1961, 1963b) made two important distinctions. First, he distinguished between reception and discovery learning, a distinction he considered important because he contended that most school learning is of the reception type. In reception learning, Ausubel (1961) stated, "the entire content of what is to be learned is presented to the learner in its final form" (p. 16). The learner is therefore required to internalize the information in a form that will be available for later use. In discovery learning, on the other hand, learners are required to "rearrange a given array of information, integrate it with existing cognitive structure, and reorganize or transform the integrated combination in such a way as to create a desired end product or discover a missing means-end relationship. After this phase is completed, the discovered content is internalized just as in reception learning" (Ausubel, 1961, p. 17).

Reception learning, then, is essentially the same as what commonly occurs in expository instruction, where learners are told information rather than discovering it for themselves. Science textbooks, for example, state principles (often with a description of the research conducted to arrive at these principles) and provide examples of their application. From the principle's definition and examples, along with practice in its application, students are expected to understand what it means. By contrast, science teachers often facilitate discovery learning by having students conduct experiments from which they derive their understanding of scientific principles.

Although discovery learning methods certainly have a place in instruction (e.g., in laboratories or everyday problem solving) (see also discussions in Chapter 7 and Chapter 11), Ausubel believed that such methods "hardly constitute an efficient *primary* means of transmitting the *content* of an academic discipline" (Ausubel et al., 1978, p. 26, emphases theirs).