

Glossary

Action research. Action research is an approach to professional development and improved student learning in which teachers systematically reflect on their work and make changes in their practice. Feldman (1995) and others describe action research as a process, a unique orientation toward inquiry. Steps in the cyclical process include the following: identifying a general idea or problem, gathering related information, developing an action plan, implementing the plan, evaluating the results, and starting over with a revised idea or problem (McKay, 1992). At each stage, there is considerable self-reflection, collaborative reflection, and dialogue. The research methods are selected to respond to the particular question that is proposed. It is more common to see qualitative methods, with an emphasis on discovery and interpretation, than to see hypothesis testing, correlation studies, or other kinds of statistical analysis (Boriga & Schuler, 1997).

Assisted discovery. Instead of advocating either discovery learning in its purest form or didactic teaching, the Vygotskian approach to education is one of *assisted discovery* (Berk & Winsler, 1995). Teachers do not wait for readiness to happen; instead, teachers assist children to reach higher levels of development and learning by orchestrating their engagement in challenging, interactive experiences and activities (Caine & Caine, 1990).

Behaviorism. Based on the theories of J.B. Watson and B.F. Skinner, a behaviorist approach to education focuses on observable, measurable behaviors, which are produced by the manipulation of antecedents and consequences. Implicit in this view is the image of the learner as passive; learning takes place through the formation of stimulus-response bonds, which are strengthened through repetition and reinforcement. Based on these assumptions, skills are regarded as the sum of their component parts, often taught directly and practiced in isolation from their use (frequently in exercises presented in workbooks) before being brought back to the whole (Crawford, 1995). Teaching is highly structured, sequentially organized, and teacher-directed.

Constructivist theory. Constructivist theory is a set of beliefs about the nature of knowledge, development, learning, and teaching. It is a belief that we construct our own understandings of the world by reflecting upon our interactions with objects and ideas. Learning occurs when we take new experiences and synthesize them into what we already know. At different developmental levels, we are able to understand increasingly complex relationships. The original research that supports the constructivist view was conducted by Swiss psychologist Jean Piaget, over a period of several decades (1920s-1980s). His research was based on observations and conversations with children as they explored objects, ideas, and changes that occurred in their environments (Briggs, Folkers, & Johnson, 1996, p. 5).

Metacognition. When learning is viewed as understanding, an important element of teaching is to help children become aware of how they go about their thinking, learning, and remembering (metacognition). Key to a metacognitive approach is an active, problem-solving approach to learning, in which the learner is able to use a range of flexible strategies.

Multiple intelligences. Although verbal/linguistic intelligence and logical/mathematical intelligence have dominated the traditional pedagogy of western societies, Howard Gardner of Harvard University suggests that there are at least five additional human intelligences, including spatial, musical, kinesthetic, interpersonal, and intrapersonal. Proponents of an educational approach that encourages the development of multiple intelligences argue that when students are able to specialize and excel in at least one area, discipline problems are reduced, and academic and cooperative learning skills improve. Because each child learns the subject matter in a variety of different ways, chances of understanding and retaining the information are multiplied (Campbell, 1995).

Psychometrics. Psychometrics refers to the use of quantitative devices to assess mental data, such as intelligence or personality. A psychometric philosophy of education posits that the learner possesses measurable abilities; individual differences in performance are regarded as reflecting differences in *amount* of ability (Elkind, 1991). In a psychometric approach, education is seen as imparting quantifiable knowledge and skills which can be measured objectively on standardized tests. Answers are either right or wrong, and subjects are autonomous, with each discipline possessing its own scope and sequence of skills.

Scaffolding. A term introduced by Wood, Bruner, and Ross (1976), scaffolding is defined as a flexible way to provide temporary, adjustable support to children's efforts that is sensitively attuned to their needs. More support is offered when a task is new; less is provided as the child's competence increases, thereby fostering the child's autonomy and independent mastery (Berk & Winsler, 1995).

Transactional model of learning. In the transactional model, learning is an active process, in which the learner constructs his or her knowledge through interaction or transaction with the social and physical environment. Because the learner is regarded as intrinsically motivated and self-directed, effective teaching capitalizes on the child's motivation to explore, experiment, and to make sense of his or her experience. Proponents of a transactional approach are committed to teaching *for* understanding and learning *as* understanding.

Zone of Proximal Development (ZPD). A term coined by Vygotsky, it refers to the distance between what a learner can accomplish during independent problem solving and what he or she can accomplish with the help of an adult or more competent member of the culture. The ZPD is the hypothetical, dynamic region where learning and development take place (Berk & Winsler, 1995).