Gifted Children

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Book Review: How People Learn: Brain, Mind, Experience, and School: Expanded Edition, edited by John D. Bransford, Ann L. Brown, and Rodney R. Cocking

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How People Learn: Brain, Mind, Experience, and School: Expanded Edition

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How People Learn: Brain, Mind, Experience, and School was conceived and written by the Committee on Developments in the Science of Learning of the National Research Council. This committee at the time of writing was composed of several of the most senior scholars involved in teaching and learning, including the three editors of this volume (John Bransford, Ann Brown, and Rodney Cocking), as well as fourteen other equally notable scientists, such as Rochel Gelman, Robert Glaser, Roy Pea, and Barbara Rogoff, to choose but a few. It was born of the Committee's collective concern about how slowly important new research findings on learning, brain development, and teaching are being translated into educational practice in schools.

The first book in the series was published in 1999, and an expanded edition of that book was published in 2000. Since then, several others have been published focusing on how students learn history, mathematics, and science in the classroom. Although not specifically targeting gifted education, the series is invaluable for people interested in understanding how giftedness develops and how to support gifted development in schools.

Bringing together a high level of theoretical and empirical work in developmental psychology, cognitive psychology, neuroscience, educational psychology, and other fields, the authors demonstrate a remarkable convergence of knowledge in some areas, such as the tremendous importance of early experience in development. They also identify areas where our collective knowledge to date is shaky or nonexistent, suggesting caution with respect to many of the products on the market that are loosely based on emergent findings.

The authors share theories and insights from widely disparate and up-to-the-minute scientific findings in language that is accessible to educators, making useful inferences and practical connections from what we are learning about cognitive and neural development to classroom activities and attitudes. They provide thoughtful discussions of topics such as transfer of knowledge across domains, which they describe as being facilitated by explicit metacognitive supports; and technology's role in teaching, which they caution about romanticizing, and also show as useful in bringing curricula based on real-world problems into the classroom, providing scaffolds for learning, enhancing opportunities for two-way conversations between teachers and students, supporting reflection and revision, building local and global communities, and expanding opportunities for teacher learning.

They challenge many traditional instructional practices, and offer specific recommendations to educators, such as ways to encourage student engagement in learning, and pathways to expertise. They highlight three findings from the disparate fields of research that they collectively draw on: "(1) Students come to the classroom with preconceptions about how the world works. If their initial understanding is not engaged, they may fail to grasp the new concepts and information that are taught, or they may learn them for purposes of a test but revert to their preconceptions outside the classroom." (p. 14) Modeling an approach to implementing this recommendation, the authors consider widely-held misconceptions about learning and the brain. They warn against fads such as teaching separately to the left and right hemispheres of the brain (the hemispheres are much more functionally integrated than previously conceived), or seeing the brain as growing in holistic "spurts," with attendant stage-related educational imperatives (there is significant evidence instead that brain regions develop asynchronously).

The second key finding: "To develop competence in an area of inquiry, students must: (a) have a deep foundation of factual knowledge, (b) understand facts and ideas in the context of a conceptual framework, and (c) organize knowledge in ways that facilitate retrieval and application" (p. 16). This finding emerges in many of the approaches to gifted education, and has been extensively developed and investigated by VanTassel-Baska and colleagues at the Center for Gifted Education at the College of William and Mary (e.g., VanTassel-Baska & Stambaugh, 2006).

The third finding is that "A 'metacognitive' approach to instruction can help students learn to take control of their own learning by defining learning goals and monitoring their progress in achieving them" (p. 18). They describe ways of fostering many of the most effective metacognitive strategies that are used by experts, such as predicting outcomes, explaining to oneself, noting failures to comprehend, activating background knowledge, planning ahead, and apportioning time and memory.

The book concludes with a discussion of future directions for the science of learning, providing suggestions for research that promises to increase the impact that classroom teaching can have on students' learning. Among other recommendations, they advocate using the principles they have identified as a "lens through which to evaluate existing educational practices and policies" (p. 251), conducting collaborative research in teams that combine "the expertise of researchers and the wisdom of practitioners" (p. 252), and expanding the study of classroom practice. ❖

References

VanTassel-Baska, J., & Stambaugh, T. (2006). *Comprehensive curriculum for gifted learners (3rd Ed.)*. Boston, MA: Allyn & Bacon.