

Development of Metacognition in Gifted Children: Directions for Future Research

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This article provides an overview of the existing literature on the development of metacognition in gifted children and emphasizes needed areas of research. Research examining individual differences in the development of declarative metacognitive knowledge, cognitive monitoring, and the regulation of strategies is reviewed. Differences between patterns of gifted and nongifted development differ depending on the type of metacognition being examined. Specifically, research on declarative metacognitive knowledge and far transfer shows a monotonic relationship between metacognitive development and giftedness. Research on spontaneous use of a variety of both simple and complex strategies is suggestive of an acceleration hypothesis (with giftedness effects increasing with age). These effects, however, may be domain-specific. Finally, research on cognitive monitoring suggests only developmental (but no giftedness) effects. As a consequence, we argue that it is important to differentiate the aspect of metacognition being examined before drawing conclusions about the relationships among metacognition, giftedness, and development. Additionally, an intelligence theory approach may be a much less profitable paradigm for understanding the relationship of metacognition and giftedness than an exceptional performance paradigm. © 1995 Academic Press, Inc.

Substantial research has examined children's knowledge of how their minds work and how they use this knowledge in the performance of everyday cognitive activities. For example, there have been investigations ranging from children's ability to monitor comprehension (e.g., Markman, 1977, 1979) to judgments regarding the influence of various task factors on memory performance (Kreutzer, Leonard, & Flavell, 1975). Despite this extensive research interest in metacognition, no integrated view of metacognitive development, especially with regard to its development in children in the average to gifted range of intelligence, has been put forth.

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Although there are still many unanswered questions regarding the validity and scope of metacognition as a construct (see Garner & P. Alexander, 1989), curriculum developers are already beginning to take a special interest in the research on metacognition and cognition in general and to integrate it into their programs for gifted children (Renzulli & Reis, 1986; Schlicter, 1986). Cheng (1993), in a previous review of metacognition and giftedness, offers that educators and parents should concentrate on helping gifted children to develop metacognitive skills through appropriate educational experiences. In addition, Cheng argues for the unequivocal "close relationship between metacognition and giftedness" (p. 105). Thus, regardless of the state of the literature research surrounding metacognition and giftedness, it is already being promoted as one way to make curriculum modifications for those of higher intelligence.

Because the study of the role of metacognition in giftedness may allow for more appropriate educational programming, such research should be of fundamental interest to all scientists and educators working in the areas of gifted and special education. Shore (1986) notes that "metacognitive research will lead us to a new meaning of giftedness in cognitive and academic terms" (p. 27). If metacognition is going to play such a central role in programming for gifted children, it is essential that the state of the current literature be addressed and directions for future research be mapped. As Shore comments, "if we are to say that curricula for the gifted must be defensibly differentiated, it is essential that we be able to demonstrate that gifted people think differently. Cognitive research on giftedness is one of the ways we will be able to respond to this challenge" (p. 24).

Metacognition as a construct has its basis in information processing and general intelligence theories and is defined in many ways. For example, Flavell (1979, 1985) includes in his definition of metacognition both knowledge about cognition and metacognitive experiences. Similarly, Brown, Bransford, Ferrara, and Campione (1983) define metacognition as the knowledge about and regulation of cognition. Wellman (1983, 1985) makes two main distinctions: theory of mind (which includes knowledge of existence, distinct processes, integration, and variables) and cognitive monitoring (although Wellman notes that this cognitive monitoring is similar to what Flavell (1978, 1979) calls metacognitive experiences and what Baker and Brown (1981) have called metacognitive knowledge). Finally, Pressley, Borkowski, and O'Sullivan (1985) have hypothesized a model which includes strategies, metacognitive acquisition procedures, general strategy knowledge, and specific strategy knowledge. This latter definition is somewhat broader than the others in that it also includes the use of the strategies themselves. Strategy use was included in this later model because it has been shown to be highly interdependent with knowledge

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