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ABSTRACT

This bulletin offers guidelines to help parents and teachers improve the thinking skills of gifted children. It stresses the importance of encouraging thinking through the use of evocative questions, distinguishes between and defines critical thinking and creative thinking, and offers suggested questions to prompt either creative/divergent thinking or critical/analytical thinking. The need to foster such traits as persistence, open-mindedness, rationality, flexibility, and intellectual honesty is also stressed. A home which fosters thinking skills is described as one in which the family works together to solve problems. Suggestions are also offered for fostering children's metacognitive skills by prompts and questions that help them to monitor and evaluate their own thinking. General guidelines for nurturing thinking as well as criteria for classroom thoughtfulness are listed. (DB)

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Bulletin --

Developing Thinking in the Gifted

Pennsylvania Association for Gifted Education (since 1953)
Affiliate Chapter of the National Association of Gifted

A Special Pennsylvania Association for Gifted Education Publication

by Anthony J. Le Storti, Director, Center for Creative Studies, Gwynedd Mercy College

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Improving Thinking in the Gifted

Gifted children offer special challenges in thinking skills development. Their gifts and talents cause us to believe that they already are good thinkers and that our work is to provide educational and developmental experiences that expose them to greater breadth and depth of content. In other words, we need to give them more to think about. But contemporary theory and research on the brain, intelligence, learning styles, etc. indicate that we have areas of natural strength and ability and other areas where our abilities are in need of development. And research in the area of expertise indicates that even gifted performers must pass through a number of necessary developmental stages to move from novice to expert.

The point is, while gifted children are on a fast track to mastery, that journey will likely require considerable advice, instruction and encouragement from parents and teachers. Gifted children have much to learn in order to maximize the development of their tremendous potential.

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This learning should not be limited to acquiring more content or subjectmatter knowledge. It must include the development of powerful process (thinking)skills as well as the personal traits and dispositions that energize thegood thinker.

Helping Children to Think

In order to help children to think, we must first let them think. As earlyas their development and maturity permit (relatively early for many giftedchildren), they should not only be allowed, but encouraged to solve their own problems and make their own decisions. Parental guidance is of coursecalled for, especially with younger children.

How can this be done without great preparation? Don't respond with solutionswhen children ask, "What should I do about X ?" Instead, answer with evocativequestions. ("What have you thought about doing?" or "What are all the thingsyou could do?") Guide them as they solve their problems on their own. Itkeeps the ownership of the problem clear, and it encourages thoughtfuland responsible action.

When they ask you to make decisions for them ("What course should I take?" or "What should I wear today?"), resist making the choice for them. Again, lead them as they move through the decision making process. Evocativequestions can again be helpful. You could ask, "What goals do you have?" or "What's important to consider in choosing a course (or getting dressed)?"

In *Developing Talent in Young People*, Benjamin Bloom and hiscolleagues wrote that the development from novice to expert requires "enormousmotivation, much support from family, the best teachers and role modelspossible, much time and a singleness of purpose and dedication.

Problem Solving

Decision Making1. Finding the Problem

Critical and Creative Thinking

We often hear about "critical thinking" or "creative thinking," and there seems to be a general affirmation that these are good things to develop. But these concepts are somewhat fuzzy, and that fuzziness is troublesome for the parent, the teacher, and the student focusing on developing thinkingabilities. How does one teach or learn critical thinking if it is not clear what critical thinking is? Let's define these terms.

- "Critical" derives from the Greek *kritikos* which means able to discern or judge. Critical thinking, then, is thinking oriented to the determination of the authenticity, accuracy, or value of a proposition or product. We are critical thinkers when we evaluate whether something is true or false, better or worse, correct or incorrect. We aid children in the development of their critical abilities when we teach them how to evaluate their own independent project, determine whether a politician or a

television commercial is credible, and judge whether a painting or a piece of writing has artistic merit.

- On the other hand, creative thinking is thinking oriented to the formation and production of a novel and meaningful idea or product. When the creative process results in a new form, we often label it "invention" or "composition." When the creative process reveals a new pattern or concept, we call it "discovery." In either case, the thinker must learn to sense problems and opportunities, to define them in an insightful fashion, to generate novel alternatives, to select the most promising of these alternatives, and to verify that the result "works," that is, meets whatever standards are appropriate. We help gifted children to develop their creative abilities when we respond constructively to their tremendous curiosity, when we encourage their experiments and artistic endeavors, and, importantly, when we teach them that setbacks are part of the creative process.

One can see that these two types of thinking are not mutually exclusive. They are complementary powers of the human intellect-- the ability to generate and the ability to judge. In fact, good thinkers continuously blend both types of thinking in accomplishing their personal and professional goals.

Prompts for Thinking

The following are examples of questions that could be used to prompt creative, divergent thinking:

- In what ways might we X?
- What if X?
- How else could one X?
- What hypothesis can you suggest to explain X?
- What will _____ be like in the future?
- How would a dentist, an athlete, etc. solve this problem?

The following could be used as prompts for critical, analytical thinking:

- Explain your reasoning.
- Why do you think that?
- Can you defend your position?
- What are the parts that make up this problem (situation, etc.)?
- What criteria or tests should we use in this case?
- What do you think caused that?
- How might we prove/disprove that?
- Explain what the other side's position is.

Traits and Dispositions

In addition to helping children with thinking strategies such as problemsolving and decision making and with the creative and critical aspects of thinking, it will be crucially important for parents and teachers to engender in children the personality traits, motivations and dispositions that energize good thinking. Knowing the material in a content area is important, and knowing the steps of good thinking strategies is also important. Without the proper attitudes and motivations, however, those things remain largely inert.

But when we aid and encourage gifted children to power their thinking with persistence, open-mindedness, rationality, flexibility, courage, intellectual honesty, and an orientation to excellence, then they animate their content and process knowledge. They enliven and direct their abilities and actualize their remarkable potential.

The Thinking Environment

If we intend to help children to become better thinkers, we must, almost literally, set the stage for thinking; that is, we must create and maintain a "thinking environment."

Some aspects of the thinking environment are physical: children need to be able to concentrate, to have the resources that aid their thinking, to eat well and get sufficient rest, etc. Many of the aspects of a thinking environment, however, are psychological. The home or classroom needs to provide a physical and psychological security. It should be an environment of mutual respect, of encouragement, of humor, of open-mindedness. There must be a recognition of the dignity of the individual and of the right of the individual to develop as an independent thinker.

While children help to shape their environments, the authority figures present (parents, teachers, administrators) have great power to promote or inhibit thoughtfulness. As indicated previously, these adult authorities need to be models of good thinking. They need to kindle in children the motivations and traits of thoughtful individuals. And they must permit and encourage growth in thinking. We see too many examples of adult students and professionals who still look to authority figures for permission to think.

Unfortunately, it is a lot easier to say "While you're living in this house, you'll do as I say," than it is to patiently work together to solve problems. It is easier to be directive and to tell children what to do than it is to offer advice and then be willing to accept their decisions. Of course, the maturity and development of the child are important factors that must be considered. But we must recognize that our roles are to "launch" the children in our care onto their own independent journeys. And in that task, it is better to start earlier rather than later.

Metacognition

The thinking that we engage in to acquire or generate meaning and/or products is called cognition. But humans have the remarkable ability to think about their own thinking, to think at a higher, or meta-, level. Metacognition is that higher level of mental functioning used for planning, directing, monitoring and evaluating our own thinking.

Metacognition is related to greater cognitive achievement and development. Gifted children, who may naturally be more introspective and self-aware, can benefit from focusing their attention on the quality of their thinking. We can aid their efforts to become self-directed and self-evaluative thinkers by helping them become aware of their metacognitive ability, by assisting them in planning their thinking, and by providing them with guidelines for good thinking. We further help to develop their metacognition by providing prompts and questions that help them to monitor and evaluate their thinking while in progress, by "debriefing" or discussing with them the thinking they did in completing a project, and, importantly, by providing them with examples of these important processes.

By sharing how you think in order to accomplish important tasks, by solving problems out loud and showing how you deal with the complexities of solving a problem or making a decision (to include how you handle wrong turns and mistakes), you provide some important insights and examples of how a mature and accomplished thinker goes about their work.

Developing Metacognition

Metacognition is our ability to think about our own thinking- to plan it, monitor it, evaluate it. A parent or teacher can help a child to develop these abilities by:

- modeling or thinking aloud
- asking the child to think aloud
- guiding students in developing a thinking plan
- helping them to assess and critique their thinking

Additionally, parents or teachers can prompt children with questions like the following :

- What is your purpose or goal?
- What kind of end-product do you want to have?
- What kind of problem is this?
- What is your plan?
- What do you know/not know about this?
- What standards will you use to judge your work?
- What was strong/weak about your thinking?

- What did you learn for the future?

Guidelines for Nurturing Thinking

1. Establish and maintain a general atmosphere that promotes thinking.
 - Encourage thoughtfulness.
 - Allow for humor.
 - Discuss subjects in depth.
2. Be a model of thoughtfulness.
 - Demonstrate the traits of a good thinker.
 - Share how you think, plan, decide, etc.
3. Work to remove the blocks that limit critical and creative thinking in children.
4. Use prompts and questions that promote and develop thinking ability.
 - Use divergent questioning.
 - Allow children time to think before answering questions or during discussions.
 - Be accepting without praising.
5. Teach thinking strategies and techniques.
6. Make formal use of strategies and techniques when doing family or class problem solving and decision making.
7. Help children to build on failure.
8. Help children to develop self-evaluation skills.
9. Encourage students to express positive self-statements about their thinking ability.
10. Teach and model open-mindedness.

Criteria for Classroom Thoughtfulness

- There is a sustained examination of a few topics rather than superficial coverage of many.
- There is a sense of coherence and continuity.
- Students are given an appropriate amount of time to think and respond.
- The teacher asks challenging questions or structures challenging tasks.
- The teacher is a model of thoughtfulness.
- Students offer explanations and reasons for their conclusions.

Source: Fred M. Newman, "Qualities of Thoughtful Social Studies Classes: An Empirical Profile," *Journal of Curriculum Studies*, V. 22 n. 3, p. 253-75, May-June, 1990.

Recommended Reading

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