The Gifted Mind: Unlocking the Potential

Sylvia Cadena Smith, Ed.D.
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Being "gifted" has its benefits (and its challenges). Identifying a person as "gifted" does not predict instant success. As with anyone else, success for the "gifted" is largely the result of preparation, experiences and motivation. Success is tricky and often hard to measure. An important component of success, which is sometimes overlooked, is self-awareness and an understanding of how to effectively *use* innate gifts and talents. This article does not discuss the definition of "gifted", but instead focuses on the 'nuts and bolts' of how people think and how to unlock the potential for gifted people (and other individuals).

Common Myths

One of the more common myths surrounding gifted and talented students is that they *"…are so smart they can do fine on their own in school and don't need help. And…they always get great grades."* This is wrong on several fronts: first, not all gifted students are gifted in the same way. Second, if not correctly challenged, these students often get bored, frustrated, and/or develop poor study habits. Finally, gifted students' social and emotional needs are typically the same as their peers. Adults often make the mistake of thinking that gifted kids are more emotionally mature than they really are due to their advanced ability to solve problems or comprehend at a higher cognitive level.

The reality is that gifted students need support and guidance in order to reach their full potential just as any other child does, but possibly on a different level. Providing this support, however, is easier said than done. Many schools do not have programs designed for gifted students so the regular classroom teacher is charged with differentiating the curriculum to meet their needs. It is not the act of differentiating content that is challenging for teachers, but how to *truly* differentiate content in ways that are engaging and are not just "more stuff" to complete…in other words, *quality* versus *quantity*. Bottom line: "*differentiate*" means "make different", not "make more".

One way to help teachers, parents (and students themselves) recognize *quality* versus *quantity* is to consider *how the brain thinks* and how to know if an activity is indeed designed to elicit challenging higher-order thinking skills.

The question before us then, is *how can teachers, parents or students determine the relative cognitive level* of materials and content? Cognitive psychologists have pondered and studied this question for decades. The good news is that psychologists have made progress in two areas that can help to strengthen learning at all levels:

1. How humans think
2. How to differentiate the complexity of classroom learning activities

How Humans Think

Research has identified a twofold process of higher cognition (Keith Stanovich, Richard West, and Daniel Kahneman). The first cognitive processing category is referred to as *Type 1* or *System 1*. During this level of processing, our brains are

thought to be in a default, or automatic response, mode with little or no effort or sense of voluntary control. *Type 2* or *System 2* is considered to be a higher cognitive processing level that requires mental effort to allocate attention to support hypothetical thinking and that leans more heavily on working memory.

System 1 and System 2 need each other to meet the challenges of our everyday lives. Effortlessly originating impressions, feelings, and ingrained memory concepts are the main tasks of System 1. This mental activity is fast and automatic and can improve with prolonged practice, such as with reading and understanding nuances of social situations. This practiced knowledge is stored in memory and accessed without intention or conscious effort.

System 2 is a more meticulous and slower process. It is brought to bear in response to a higher order thinking challenge that requires focused attention to solve an issue demanding deeper mental resources. If this stage of thinking is disrupted and attention is drawn away from a task, System 2 will not be able to accomplish its mission. For instance, if a situation requires attention and the thinker is not ready, or if attention is directed inappropriately, he/she will not perform at the requisite higher cognitive level to solve the problem.

How to Differentiate the Complexity of Classroom Learning Activities

Benjamin Bloom (1956) developed a useful framework for differentiating the complexities of classroom learning activities. His framework, referred to as Bloom's Taxonomy, helps to distinguish between six different qualitative kinds of learning: evaluation, synthesis, analysis, application, comprehension and knowledge.

Classroom teachers, without realizing it, may include a large number of activities designed at the lower levels of Bloom's Taxonomy. In 2001, a group of cognitive psychologists updated the traditional Bloom's Taxonomy to include four Knowledge Dimensions: factual, conceptual, procedural, and metacognitive These new dimensions, along with the original categories of Bloom's Taxonomy, can help teachers and parents more easily identify tasks that are focused toward higher order thinking. (Figure 1).

Figure 1:

	Cognitive Process Dimension *(Adapted from the Revised Bloom's Taxonomy 2001)*						
	Knowledge Dimensions	**1. Remember** *Recognize, Recall, List, Name, Define*	**2. Understand** *Interpret, Infer, Compare, Summarize, Classify, Explain, Describe, Identify*	**3. Apply** *Implement, Choose, Demonstrate, Use, Illustrate, Interpret*	**4. Analyze** *Compare, Organize, Deconstruct, Contrast, Classify, Differentiate, Examine*	**5. Evaluate** *Check, Critique, Experiment, Judge, Discuss, Defend, Determine, Select*	**6. Create** *Design, Generate, Construct, Plan, Produce, Invent, Assemble, Develop*
	Factual: *basic elements students must know or be familiar with to understand a discipline or solve a problem*						
	Conceptual: *concerns the interrelationships among basic elements within a larger structure that enables them to function together. This includes knowledge of classifications, principles, generalizations, theories, models, and structures*						
	Procedural: *refers to actions: how to do something. It includes knowledge of subject specific skills, algorithms, techniques and methods of inquiry, criteria for using skills, and knowledge of when to use appropriate procedures*						
	Metacognitive: *is the awareness of one's own cognition and particular cognitive processes. It is strategic or reflective knowledge about how to go about solving problems. It includes cognitive tasks, including contextual and conditional knowledge and self-knowledge*						

The Knowledge Dimensions paired with the Cognitive Dimensions provide a clear framework for writing more targeted learning objectives. The updated taxonomy allows teachers to determine at what '*cognitive processing*' level they expect their students to perform and to decide what *level* of 'knowledge' they expect their students to be responsible for in their final learning product. This positions teachers to more easily determine if the classroom learning objectives (and the activities that support the objectives), encompass higher-order thinking skills such as analysis, evaluation, and creation.

Unlocking the Potential

Armed with the knowledge about how humans think (System 1 and System 2) and how to differentiate the complexity and performance levels of learning activities, teachers can now determine the challenge level of a curriculum. This enables the creation of genuinely differentiated learning activities for gifted, as well as all other students.

If gifted students have the capacity to function easily at System 1 in a particular area, then they should be challenged to think more deeply using System 2 in that same area. As students spend more time working with their System 2 level of thinking and understanding, they will begin to recognize that deeper more analytical thinking demands their entire attention. Gaining the ability to distinguish between System 1 and System 2 thinking demands will help gifted students to understand *how* they think and respect the different thinking types.

This new knowledge and insight will help gifted students to self-regulate and appreciate that thoughtful learning is not just conducted at the System 1 level. To truly expand their thinking, they must be trained to engage their System 2 processing, which requires slower and higher level cognitive power. When System 2 thinking is engaged regularly, students will recognize what is required of them and the importance of developing effective organizational study skills to meet the challenges of higher order cognitive processing.

Developing curricula and activities that encourage gifted students to use both types of thinking and reflect at a metacognitive level about *how* and *why* they think will reinforce their abilities to effectively use and transfer their cognitive power to all forms of learning.

Thinking to learn and *learning to think* are powerful tools for anyone. These vital intangible tools in the hands of our gifted students, not only help them to think more deeply, but to have the potential to unlock new and exciting knowledge for the world.