

GIFTED AND TALENTED EDUCATION
PROFESSIONAL DEVELOPMENT PACKAGE FOR TEACHERS

Module 1



Early Childhood



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Australian Government
Department of Education,
Science and Training

THE UNIVERSITY OF
NEW SOUTH WALES



GERRIC

Gifted Education Research, Resource and Information Centre

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Welcome!

You are about to start a Professional Development Course which will help you identify the gifted and talented students in your class or your school, and differentiate the curriculum to respond to their individual learning needs. You'll also be able to decide which of your students may benefit from various forms of ability or interest grouping and which may possibly be candidates for one or more of the many forms of academic acceleration.

About the Package

The course consists of six Modules

Each Module consists of three levels: Core, Extension and Specialisation. The Core levels of the six Modules are the heart of this course. The Core Modules contain essential information and practical advice and strategies to assist you to identify and respond to your gifted and talented students.

We strongly suggest that you complete the Core level of each Module.

Pre-tests

We are aware that teachers and school administrators will enter this course with a wide range of existing knowledge of gifted and talented education. To accommodate this range of knowledge and experience, we have started each Core Module, from Module 2 onwards, with a pre-test. We encourage you to take these pre-tests and, if you 'test out' on any Module at Core level, simply move on to the next Module. For example, if you 'test out' of Core Module 2 you will pass over that Module and move on to Core Module 3.

Extension and Specialisation Levels

Extension and Specialisation levels for each Module. Material covered in the Extension and Specialisation levels builds on the knowledge you will have gained from the Core level in each Module. Key issues are examined in greater depth and participants explore a wider range of issues in the cognitive and social-emotional development of gifted students. New identification, curriculum differentiation and program development techniques are introduced.

The Extension and Specialisation levels require teachers, counsellors and administrators to undertake further reading and practical activities to reflect on classroom practice, school practice and policy. They encourage participants to focus on their specific role in the school and prepare a brief action plan to demonstrate application or mastery of outcomes.

Schools may decide that completion of the course at Specialisation level would be a useful prerequisite for becoming the school's Gifted Education Coordinator.

What will you learn in this course?

The course consists of six Modules:

Module One: Understanding Giftedness

Understanding the nature of giftedness and talent; what the terms mean; levels and types of giftedness. Cognitive and affective characteristics of gifted and talented students; ways in which these students may differ from their classmates - even if at first we don't observe this.

Module Two: The Identification of Gifted Students

A range of practical identification procedures, with particular attention to procedures which are effective in identifying gifted students from culturally diverse and disadvantaged groups. We'll be emphasising the use of a combination of approaches rather than a single measure such as IQ testing or teacher nomination used in isolation.

Module Three: Social and Emotional Development of Gifted Students

Understanding the social and emotional characteristics and needs of gifted students. Ways in which gifted students may differ somewhat from their classmates in their social and emotional development. Supporting gifted students and their parents. Teaching strategies and class structures which foster the development of positive social attitudes and supportive peer relationships in gifted students.

Module Four: Understanding Underachievement in Gifted Students

Understanding the causes of underachievement in gifted students. Identifying gifted underachievers and planning interventions designed to prevent and reverse cycles of underachievement.

Module Five: Curriculum Differentiation for Gifted Students









Teaching strategies and methods of curriculum differentiation which enhance the learning of gifted students in the regular classroom. Appropriate use of different enrichment models that international research has found to be effective with gifted and talented students. Practical applications of pre-testing, curriculum compacting and individualised programming.

Module Six: Developing Programs and Provisions for Gifted Students

Practical strategies for the establishment and monitoring of ability, achievement or interest grouping, and the many forms of accelerated progression. Particular attention will be paid to the effects of various strategies on students' academic and social development.

Using the package

Much of the material is suitable across teaching and learning contexts. This content is not specifically marked. However, content that may be applicable to your particular context is identified as follows:

Role	Classroom Teacher 	Executive Staff 	Principal 
Location	Urban 	Rural 	
Mode	Self Study 	Small Group 	Whole Staff 

Follow these symbols through the content to customise your learning path.

Each Module comes in two parts, each concluding with a practical exercise. We suggest that you complete the first and second parts a few days apart - unless this is not workable in your particular learning context. This will give you a chance to digest the information in Part 1 and work through the Reflective/Practical component.

Core Module 1: Understanding Giftedness

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Module 1

Understanding Giftedness

Welcome to the first Module in this Professional Development Course.

We have not developed a pretest for Module 1. As the Foundation Module, it contains key information which will be built on in subsequent Modules. We strongly suggest that, even if you have taken previous inservice, or even study, in gifted education, you should refamiliarise yourself with the material contained here.

Outcomes

At the completion of this Module you will:

- understand the difference between strengths, gifts and talents, and be able to distinguish some of these in your students.
- be able to identify some cognitive and affective characteristics of gifted children or in some of your students.
- be able to evaluate the influence of intrapersonal and environmental catalysts on the development of talent in your classroom or school.

Giftedness and talent: What do they mean?

Aren't all students gifted?

Some teachers find the terms 'gifts' and 'talents' a little disturbing. If we talk about 'gifted' students, does this mean some students aren't gifted? Does this suggest some students are of less value than others? Aren't all students gifted in some way?

Let's look closer at the issues. Firstly, the issue of value. Identifying a student as gifted doesn't mean she is of greater worth than other students, just as identifying a student as developmentally disabled or physically disabled doesn't mean that she is of less worth.

Identifying a student as having learning characteristics that are significantly different from those of the majority of her classmates isn't an issue of worth at all; it's an issue of need. Gifted students and developmentally disabled students have different learning needs from most of their classmates and as teachers we have to respond to these needs.

Helping these students isn't a 'bonus' or an optional extra; it's a professional obligation.

Does everyone have a gift? Teachers who claim this may be confusing gifts with personal strengths.

Everyone has a personal strength, something we do better than we do other things. Our personal strength is the high point in our personal ability spectrum. Each of us also has a personal weakness, the relative low point. We don't confuse personal weaknesses with disabilities. Equally, we shouldn't confuse personal strengths with gifts.

The essence of giftedness is advanced development. Students who are gifted have the potential to perform at levels significantly beyond what we might expect for their age. A student can be intellectually or creatively gifted. He might be physically gifted or gifted in some area of his social-emotional development. But giftedness in any area means ability well beyond the average.



Case Study

*Clare is in Year 2. Her levels of language skill are significantly behind those of her classmates and she receives learning support in this area. Her capacity to work, in maths, at a level appropriate to her age, is a much valued **strength**.*

However, for us to describe Clare as gifted in maths, she would have to have the ability to work, in maths, at levels quite a bit beyond her age

peers. And Clare doesn't. While she succeeds in maths at Year 2 level, her maths abilities at this stage don't extend beyond that. Her personal strength is maths, but she isn't mathematically gifted.

Clare responds well to the Year 2 maths curriculum. It is set at her level of maths ability and readiness. However, if Clare was mathematically gifted, the curriculum developed for her age-peers would not truly meet her needs. She would require something more: a maths curriculum quite substantially differentiated in terms of its level, its pace, its content and its level of complexity. Module 5 will give you the skills to develop curriculum material which is differentiated in these ways.

Religious perspectives

Teachers in church-founded or religiously oriented schools sometimes take a different perspective on the argument that every child is gifted. If life is a gift and the relationship of Humankind with God is a gift, then surely all are gifted.

However, many words which have a particular meaning when we use them in relation to religious faith have a quite different meaning when we use them in our temporal, or everyday, vocabulary.

Praise is an important element in the act of worship - but when you praise your 14-year-old for cleaning up his room, the meaning of the word changes.

A Passion Play represents a series of events in the life of Christ which are of supreme importance to Christians. Bach's St Matthew Passion is a wonderful musical evocation of these events. But when we talk of someone having a passion for sport, we are using the word in a different way.

The gift of grace is an important concept in Christian theology - but the grace exhibited by a gifted dancer or gymnast refers to a different quality.

In this Professional Development Course we are using the term 'gift' to define an ability or aptitude significantly beyond the average and we describe a child who possesses that ability as 'gifted'. We are using the word in a temporal sense to express a temporal concept.

The Gagné Model of Giftedness and Talent

Until the mid 1980s, definitions of giftedness and talent used in Australia tended to be performance-based and children or adolescents who were identified as gifted were usually the successful, motivated students who were already achieving. Unfortunately these rather stereotyped definitions tended to ignore gifted children who, for a range of reasons, had not yet been able to translate their high abilities into achievements.



As early as 1988 a nationwide Senate Enquiry into the education of gifted students in Australia (Senate Select Committee on the Education of Gifted and Talented Children, 1988) identified groups of gifted students who were at particular risk for non-identification.

- gifted children from economically disadvantaged backgrounds
- culturally diverse students learning English as a second language
- children who were gifted but with a learning disability
- gifted students with physical disabilities - for example visually impaired or hearing impaired gifted students
- gifted students in geographically isolated areas
- gifted students whose love of learning had been dimmed by years of repetitive and unchallenging curriculum
- gifted students who deliberately camouflage their abilities for peer acceptance.

In 2001, a second Senate investigation reported that the situation had changed very little in 13 years!

Performance-based definitions disadvantage gifted students who, for whatever reason, are not performing to the level of their ability. A model of giftedness which recognises, and avoids, this problem, has been developed by François Gagné, a French Canadian psychologist. Over the last ten years Gagné's definition has influenced Australian views of high ability and how it is translated into high achievement. The Gagné model alerts us to 'hidden gifts'.

Gagné (2003) argues that we should not use the terms 'giftedness' and 'talent' synonymously. Rather, he suggests that we should use these terms selectively to identify two different stages in a highly able student's journey from high potential to high performance.

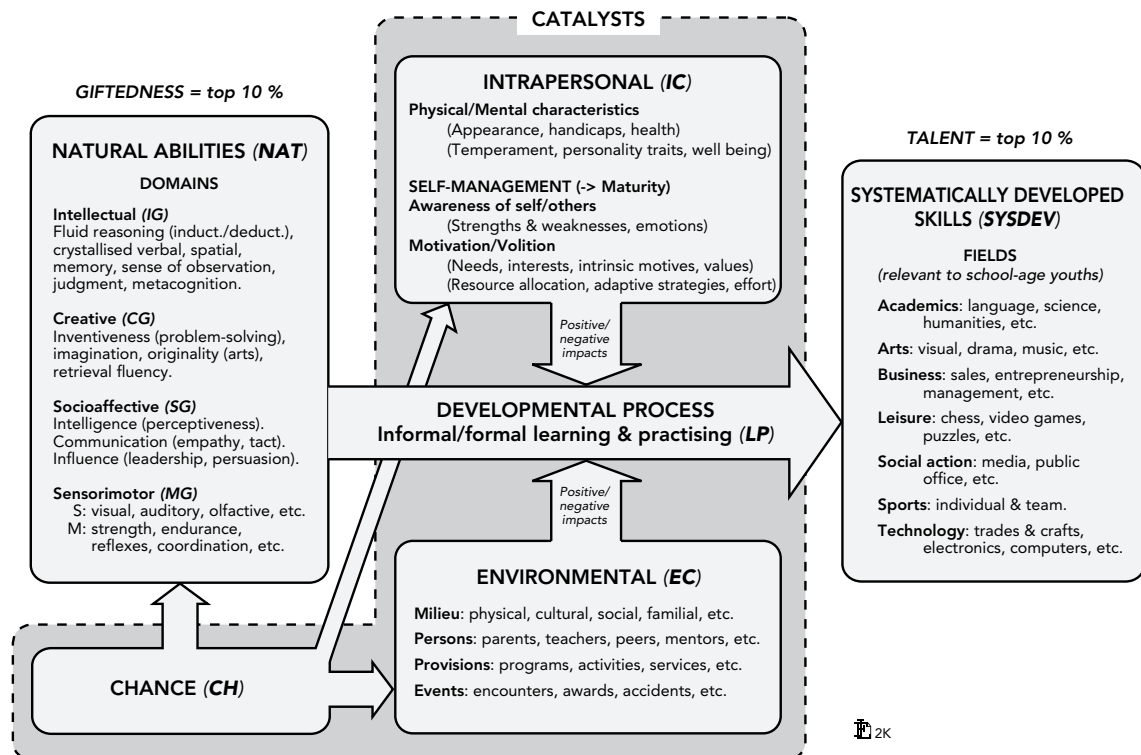
Gifts

Gagné defines giftedness as the possession of natural abilities or aptitudes at levels significantly beyond what might be expected for one's age, in any domain of human ability. As the diagram below illustrates, a student might be gifted in any one of the cognitive, creative, socio-affective or sensori-motor domains - or in several, or in all.

How many students could be regarded as gifted? Gagné suggests that at least 10%-15% - at least three or four students in a mixed ability class of 30 - could be gifted in the intellectual domain. Another three or four could be physically gifted. And of course there is often overlap between the domains.

The key to Gagné's view of giftedness is that it defines outstanding **potential** rather than outstanding performance. This model recognises the existence, and the dilemma, of the gifted underachiever - the student who may have well above average ability but who has not yet been able to translate this into above average performance.

Gagné's Differentiated Model of Giftedness and Talent (DMGT.2003)



Talents

While giftedness equates with high ability, talent equates with high achievement. Gagné defines talent as **achievement** or **performance** at a level significantly beyond what might be expected at a given age. As can be seen from the diagram, giftedness in any specific ability domain could be translated into talent in several different fields of performance. If Don Bradman had been born in the USA, he might have become a talented baseballer!

How does giftedness become talent? At the heart of his model Gagné places something that is also central to us as teachers, the quality of the child's learning. However, because learning occurs within environmental and personal contexts, he centres the developmental process of learning, training and practising between two clusters of catalysts which can either assist or hinder the child's learning.

Intrapersonal catalysts

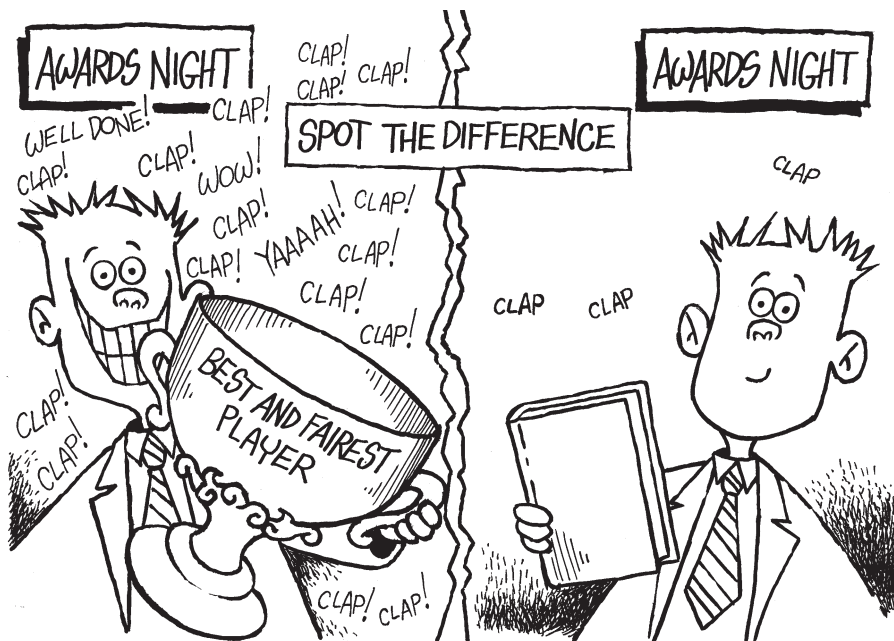
Personality factors within students themselves impact on the learning process.

- **Motivation** and **perseverance** are critical to success. Gagné emphasises that many gifted students find school sadly unmotivating: but the motivation to achieve their potential is essential if they are to develop as talented. They must



have the motivation to get started, the motivation to apply themselves and the motivation to persevere when the going gets rough!

- Students must have **confidence** in their abilities and they must accept and value their gifts. Sometimes teachers confuse conceit, which we naturally want children to avoid, with a healthy pride in one's abilities, which is an essential constituent of self-esteem. Gifted students must learn to feel good about being gifted.



- **Organisation** is important, too. The capacity to get organised and stay organised is essential for success regardless of the domain in which the gift is sited. Gagné describes **concentration** as the capacity to shut out external stimuli and keep working on essential tasks for as long as it takes to complete them. Students to whom learning has come easily in the early years may not have had to develop the skills of concentration.

Environmental catalysts

Teachers are very aware of environmental factors which impact positively or negatively on the learning process. These may include:

- The **milieu** or surroundings in which the child lives and learns. This can include family issues such as family size, family economic circumstances and family attitude towards education or towards the child's gifts. However it also includes the presence or absence of learning resources; for example, a student talented in sport but living in a small country centre may not have access to high level training.



- Significant **persons** - parents, siblings, teachers, other students, school leaders, community leaders - who encourage, discourage, or are neutral towards talent development. (Passivity - apathy or lack of interest in the student's talents - can sometimes be as negative as active opposition.)
- The **provisions** the school makes, or fails to make, to develop the student's gifts into talents, and even the social ethos of the community which can dictate which talents are valued and, therefore, which programs of talent development will be established or funded. A supportive school environment can enhance not only the child's likelihood of academic success, but also the development of a strong and healthy personality.
- Significant **events** in the family or community - for example, the death of a parent or a family breakup, winning a prize or award, suffering an accident or major illness, or finding the right teacher at the right time - can significantly influence the course of a student's journey from giftedness to talent.

Within the Gagné model, the school and community's responsibility is to seek out students who are gifted but **not yet talented** and assist them to develop their abilities into achievements, as well as recognising and further assisting those talented students who are already performing at high levels.

For this to happen, the school must identify positive personal and environmental catalysts and harness them to assist the talent development process. Equally, however, the school must work to lessen or remove negative personal and environmental catalysts which may be hampering the gifted student's progress towards talent.

Gagné points out that **chance** can have a significant influence on talent development. Children have no control over the socio-economic status of the family they are raised in, and usually they have little control over the their school's attitude to gifted education. However, teachers and schools **can** enhance the student's 'chance' of success. A gifted student is more likely to develop habits of motivation and perseverance if the work she is presented with is engaging, challenging and set at her ability level. There is less 'chance' of a gifted student camouflaging his abilities for peer acceptance if the class climate encourages academic talent.

Each Australian state or territory has a published policy on the education of gifted and talented students. In every case, these policies are congruent with the Gagné model - indeed some states, such as New South Wales and Western Australia have formally adopted the Gagné model.

URL links to the gifted education policies of the Australian states and territories appear at the end of this Module.

What abilities are valued within Australia?

Australia is a nation rich in cultural diversity. Different abilities and achievements are valued by different cultures. Some cultures value creative gifts, or aptitude for social relationships, more than academic gifts. Other cultures value academic ability very highly.

What abilities are valued by the communities served by your school? What abilities are less valued? What impact could this have on the gifts that a community will allow to be fostered into talents and the gifts that will be allowed to lie dormant?



What gifts or talents are mainly valued by the students in your class? In the 'environment' section of Gagné's diagram, list ways in which your classroom actively fosters these gifts or develops these talents further.

What gifts or talents are presently **undervalued** by your students? How could your classroom environment change to allow these abilities to be better appreciated?



What gifts or talents are mainly valued by the students in your school? In the 'environment' section of Gagné's diagram, list ways in which your school actively fosters these gifts or develops these talents further.

What gifts or talents are presently undervalued by the students in your school? How could your school 'climate' change to allow these abilities to be better appreciated?



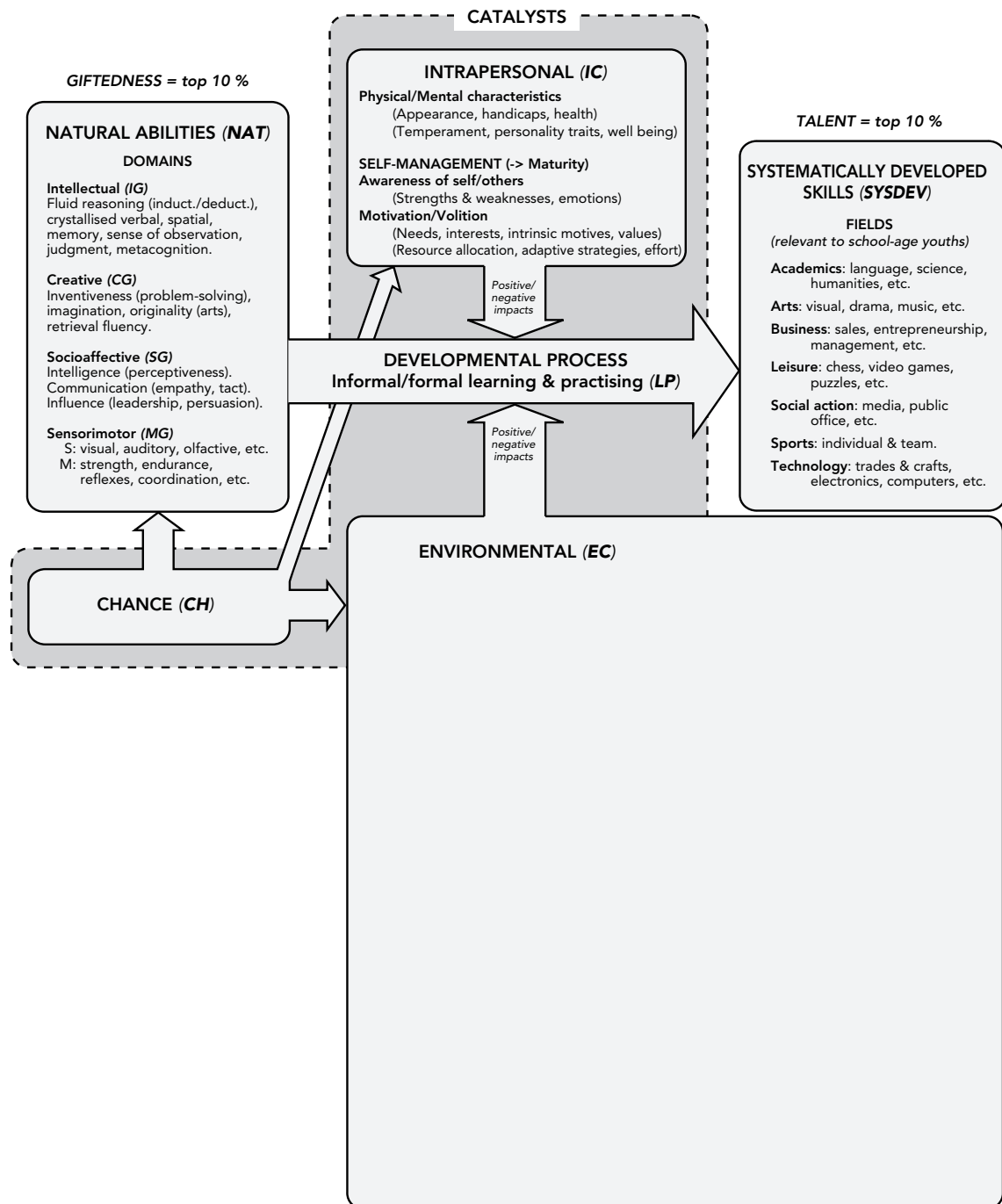
In general, what is your school's or community's attitude towards gifts or talents? Does this vary depending on talent area? Does it vary depending on the subject? Is it 'cool' to be talented in some subjects but less so in others? If so, why?

In the 'environment' section of Gagné's diagram, list programs, initiatives or other interventions through which your school actively fosters talent development. Do any patterns appear? For example, are some talent areas or subjects represented more often than others?



In general, what is your school's or community's attitude towards gifts or talents? Does this vary depending on the talent area? Does it vary depending on the subject? Is it 'cool' to be talented in some subjects but less so in others? If so, why?

Re-read the 'persons' and 'provisions' segments of the 'environmental catalysts' section above. In the 'environment' section of Gagné's diagram, list activities or attitudes which may assist or impede talent development within your school. Are any talent fields particularly valued and assisted? Which fields could do with more help?



Welcome to Part 2 of Module 1. In this section we are going to look at some of the characteristics of gifted and talented students. Some of these characteristics are easily recognised. Others are not so readily visible.

Levels of giftedness

Teachers of developmentally disabled or physically disabled students recognise that there are different levels or degrees of disability. For example, hearing impaired students are recognised as having mild, moderate, severe or profound degrees of hearing impairment.

It is important to recognise that using these terms is not simply 'labelling' the student: the level and type of intervention required are dictated by the severity of the condition.

It's relatively easy to distinguish different levels of talent, especially in adult life. There's a world of difference between the talent displayed by a 'good' weekend golfer, a golf club professional and Tiger Woods!

Similarly, we can see the huge differences in achievement in three talented readers, Max, Deng and Paula. They are all in Year 3 at their local primary school. However, Max has a reading age of 10, Deng reads books enjoyed by Year 6 or 7 students and Paula enjoys Agatha Christie mysteries! Mrs Samuels, the school librarian, has started bringing in books from home to feed Paula's unusual talents. She says Paula is one of the most remarkable students she's ever met.

However, it's important to note that we can see the difference in Max, Deng and Paula's reading only because the three students have been allowed to develop their gifts for reading into talents. If their teachers restricted them to reading age-appropriate material at school we might never become aware of the true levels of their ability.

How flexible are library policies at your school? Would Deng, in Year 3, be able to borrow books at his Upper Primary reading and interest level? When he was in Year 1, he was reading books more usually enjoyed by Year 3 students. Would he have been able to borrow them?

We will explore levels of giftedness in greater depth in the Extension and Specialisation levels of this Module but for now let's just be aware that it's not enough to identify a student as gifted. We need to identify the **level**, as well as type, of giftedness and Module 2 will introduce ways of doing this.

Some cognitive (learning) characteristics of young intellectually gifted students

One of the ironies about giftedness in early childhood is that some of the most striking manifestations of high ability appear in the very early years - long before the child enters school. This means that while the parents are aware of the child's advanced development, the child's future teachers are not around at the time to see it!

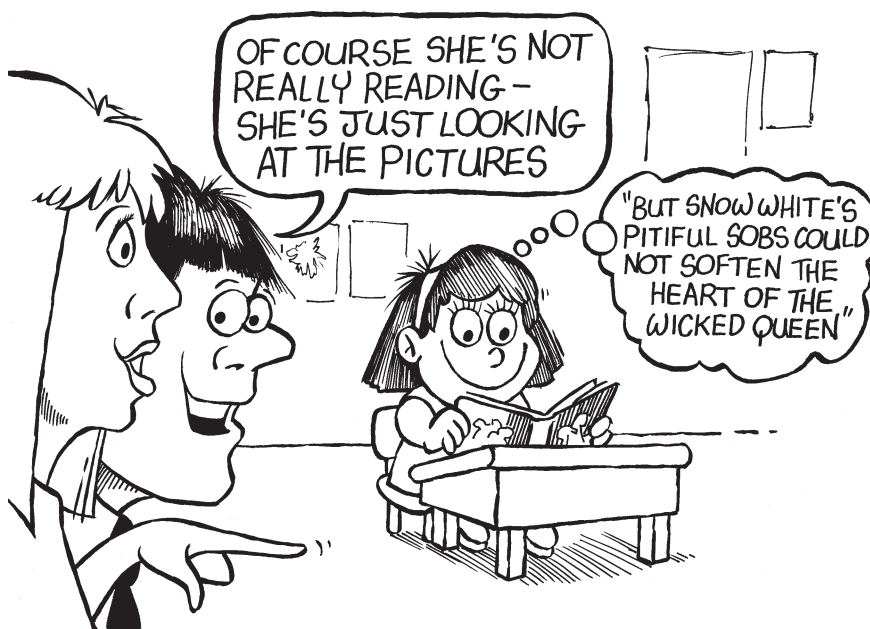


Sometimes, when the child enters school and the parents try to describe his early development to the Kindergarten or Reception class teacher, the teacher is reluctant to believe what they say.

Not all the following characteristics appear in all gifted young children but when a child displays a cluster of these characteristics, this is a strong indication that the child may be intellectually gifted.

- **Ability to understand and use abstract symbol systems at much younger ages than usual.** Gifted children may 'pick up' reading and number from TV, street signs and other sources long before school entry and without being taught. (SO ... don't assume it was a doting mum with flashcards!)

BUT gifted children from disadvantaged groups may not maintain, or even have, this 'head start' if their home environment can't provide further materials or stimulation. This will be discussed further in Module 4: Understanding Underachievement in Gifted Students.



- **Early language development.** Many gifted children are speaking in short sentences at ages where the average child is just beginning to link words into pairs.

BUT this occurs only when the carers talk regularly and directly to the young child.

We also need to be aware that a child who is learning English as her second language may be extremely fluent in her first language but much less confident in English.

- **Early motor development.** Many intellectually gifted children learn to walk and run rather earlier than usual.
- **Early development of a rich vocabulary;** love of words; capacity to create complex sentences.
- **Unusual facility with number;** capacity to grasp abstract mathematical concepts at unusually early ages.

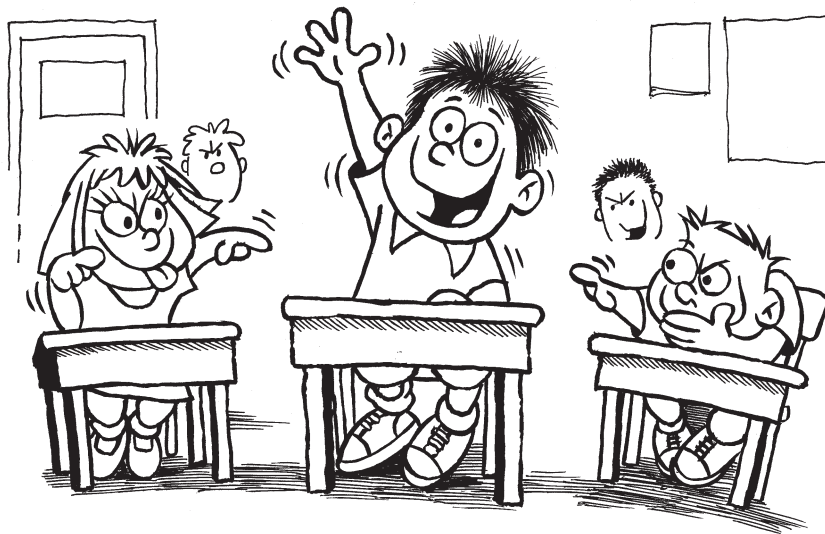
Tara, aged 5, was puzzled because shoes in a shop window were displayed singly instead of in pairs. 'Why are they all by themselves?' she asked and then, before her mum could answer, she exclaimed 'Oh mum, a pair is two, and one is half of a pair!'

- **Exceptional memory.** Some gifted children can repeat songs and TV commercials by heart before age 2.
- **Rapid pace of learning.** Gifted young children may seem to acquire knowledge effortlessly. Often they can generalise the knowledge to new situations in unexpected ways.

Jenny, aged two, had just visited her grandmother in hospital. On the way home they passed a vet's surgery with a sign that showed a smiling cat and dog with bandaged paws. 'Look', she called in delight, 'a hospital for pussycats and puppydogs.'

- **The ability to ask reflective and probing questions.**

The father of Tomas, aged 3, was reading him a bedtime story but Tomas was preoccupied, looking out of the window at the night sky. Suddenly he asked, 'Dad, why does the moon only go for a walk on nights when the sky is cloudy?'



- **Early development of classifying and investigating skills.** A fascination with categories - categories of dinosaurs, insects or plants, or patterns in shapes or number.

Some affective (social-emotional) characteristics of young gifted children

This section is designed as a short introduction to some issues in the social and emotional development of intellectually gifted young children. Module 3 will look at these issues in greater depth.

It is often assumed that while intellectually gifted students are more academically able than their age-peers, their social and emotional maturity will be much closer to that of their classmates. However, in many cases this is not so.

Teachers of children in the pre-school and early primary years may note that young children who are developmentally delayed can differ in several ways from their age-peers of average ability - not only in their capacity to learn but also in their socio-affective characteristics. They may be rather less socially and emotionally mature. Their play interests may be more like those of younger children. They may retain the 'self-centredness' of early childhood for longer than their classmates.

In much the same way, intellectually gifted children - children who are developmentally advanced in their capacity to learn - are often somewhat more mature than their age-peers in their social and emotional development. However, this may not always be visible. Indeed it can be easy to mistake the emotional intensity and sensitivity shown by some bright young children for emotional immaturity!

- **Some gifted young children have an unusually well developed sense of justice and 'fairness'.** They may become upset if they feel that one child has been 'unfair' to another - or if they feel a teacher or other adult has been 'unfair' to a classmate.

David, aged 3, was already counting. When his friends Ben and Craig came to his house to play he would carefully count his lollies into three piles so that each child had an equal share. He became quite distressed when the other boys would take lollies from someone else's pile. David had not realised that Craig and Ben had no concept of equality, or number; he thought they were cheating.

Tamara, aged 7, was very protective of Josie, another child in her class. After Ms Wilkie had reprimanded Josie for misbehaving, Tamara had a quiet word with Ms Wilkie and pointed out that two of the other girls, including herself, had been involved in the same piece of mischief. She felt it wasn't fair that only one child should be punished.

- **Emotional intensity.** Gifted children tend to experience emotional reactions at a deeper level than their age-peers. Joy can be more joyful and sadness more sorrowful. The breakup of a friendship or the death of a pet can cause deep distress.

Sometimes other children can 'play on' this sensitivity to get an emotional reaction out of their classmate. It is important for teachers to understand that the emotional 'over-reaction' does not necessarily indicate immaturity.

- **Young gifted children often have play interests that are more like those of older children.** They begin to enjoy structured, 'rules-based' games at earlier ages than their age-peers. This can become a problem when the gifted child starts to explain the rules of a game he enjoys to classmates who are still happier with free play.

- **Gifted children tend to prefer the companionship of children a little older, or sometimes some years older.** Their advanced intellectual development, their reading and play interests, and their relative emotional maturity may lead them to seek out, as friends, older children who are at similar developmental stages.

Yanis learned to read when he was 4. Now, aged 8, he has a passion for conservation. With his friend Ian, in Year 5, he reads up on endangered animal species and writes letters to conservation authorities.

- **Australian research has found that gifted children have rather different conceptions and expectations of friendship from those of their age-peers** (Gross, 2002). Academically gifted 6- or 7-year-olds may be looking for a friend to share thoughts and feelings at an age where their age-peers are looking for play partners.



- **Many gifted children have an enhanced capacity to empathise with the feelings of others** - even with older children or adults. They can sometimes be extremely perceptive about relationships.

Sara, aged 6, became distressed when her mum told her gently that the parents of her best friend Susan were going to live apart. Sara's mum hastened to assure her that this would not happen in her family, but that wasn't what was disturbing Sara. 'Susan is going to think her daddy doesn't love her any more,' she said. 'Susan's mummy needs to explain it to her like you've explained it to me.'

- **Young gifted children can sometimes become very frustrated when their imperfect fine motor coordination won't allow them to produce art work or writing at the level they can envisage in their imaginations.**

Alexa, a few days after her 5th birthday, tore up her first five attempts to write a 'proper' thank you letter to her much loved grandma. Her printing just wouldn't come out the way she wanted. Finally her mother asked her which was more important - that Alexa should be pleased with her writing or that Grandma should have the pleasure of getting a letter. Alexa reluctantly took the point.

- **Some gifted children have an unusually mature sense of humour.** In the early childhood years, humour tends to be strongly visual - a clown, people in fancy dress or slapstick comedy. However, some children move on, earlier than others, to the next stage of humour which tends to be verbal. Wordplays - dreadful puns and riddles - become popular.

This can sometimes be an effective way of identifying gifted children. A 6- or 7-year-old who is already trying to camouflage his ability for peer acceptance will sometimes 'break camouflage' by responding to a teacher joke which 'should be' a little above his head.

The cognitive and affective characteristics of gifted young children which we have discussed above are addressed in greater depth in Gross (2004), Harrison (2003) [both available from GERRIC, The University of New South Wales], and Klein & Tannenbaum (1992).



Adam, Bella, Carla, Darren: What's your opinion?

Here are four thumbnail sketches of students who may appear in your class.

What's your opinion of their ability levels?

From what you've learned in this Module, do they seem to have indications of high ability?

If so, in Gagné's terminology, would you say they are gifted (possessing high ability or aptitude) or talented (demonstrating high achievement or performance)?

When you've read these brief descriptors, record your response. You may want to refer back to it when you've completed later Modules.



Adam entered school six months ago. He's not reading yet and shows little interest in most of what happens in the classroom. He is popular with the other children, particularly the boys. He is a very fast runner and enjoys organising races at recess and lunchtime, which he invariably wins, even against Year 1 and 2 children.



Bella, in Year 2, is very quiet in the classroom. It's difficult to get much out of her. She hardly ever speaks and seems to do only enough work to get by. She doesn't seem to relate well to other students but at recess and lunch she 'haunts' whoever is on yard or playground duty.



Carla is a good 'all-rounder' academically. She's strong in language-based subjects and in maths. You'd certainly place her in the top quarter of your class. However, she doesn't seem to have the exceptional qualities that characterise a gifted child. She has high abilities but there isn't the spark that indicates giftedness.



Darren in Year 2 is struggling academically and receives learning support. In the early part of the year he really tried hard and made some progress but now he seems to be switching off. Darren's mum, and your colleagues who taught him last year and the year before, say that this has become a pattern.

Now go to the 'feedback' section.



Feedback

Adam certainly is talented in Gagné's sensorimotor domain. His ability to run fast and well has been translated into high performance. We can identify his talent because it is clearly visible. We can even measure it objectively; we can use a stopwatch to time his performance and compare it against those of both his age-peers and older students.

Adam's popularity is probably related to the fact that he excels in a talent area that is valued by his peers - particularly since he can beat older boys! He has had no need to conceal his gift, so it has readily developed into a talent.

There doesn't seem to be any strong indication at this stage that Adam is talented academically but the first few months of school are very much a transition stage. We need to praise him for his talent in running and facilitate his further development. We have to be careful not to assume that the gift we have identified is his only gift; he may have more than one.

Bella's teacher, Ms Jens, once said, 'You hardly know she's there' and that is part of the problem. She seems to be happy to blend into the background. Unless we stop taking her at face value we may simply accept the picture she is drawing of herself.

Some academically bright students are wary of standing out in case their classmates tease or resent them. Is Bella seeking teacher protection at recess and lunch because of this? Or is she perhaps looking for someone to talk to about things her classmates are not interested in?

Carla is showing special aptitude in at least two subjects. If she's at least in the top quarter of the class, could she actually be in the top 10%? We have to guard against seeing gifted students as the 'exceptional' few. Has the school assessed her maths and reading on standardised tests of achievement? If her abilities are far beyond the level she's currently being encouraged to work at, that may explain why the 'spark' is missing!

Darren certainly seems to have learning difficulties - but has he ever been assessed to ensure that he also does not have a specific learning disability? Could his eagerness at the start of the year and the subsequent shift to disengagement mean he is losing confidence in himself? Can he work out things clearly in his head but have problems with getting the material down on paper?



Adam, Bella, Carla, Darren: What's your opinion?

Here are four thumbnail sketches of students who may appear in your school.

What's your opinion of their ability levels?

From what you've learned in this Module, do they seem to have indications of high ability?

If so, in Gagné's terminology, would you say they are gifted (possessing high ability or aptitude) or talented (demonstrating high achievement or performance)?

You'll almost certainly have some disagreement among your group - and that's okay. Record the range of responses your group makes. You may want to refer back to it when you've completed later Modules.



Adam entered school six months ago. He's not reading yet and shows little interest in most of what happens in the classroom. He is popular with the other children, particularly the boys. He is a very fast runner and enjoys organising races at recess and lunchtime, which he invariably wins, even against Year 1 and 2 children.



Bella, in Year 2, is very quiet in the classroom. It's difficult to get much out of her. She hardly ever speaks and seems to do only enough work to get by. She doesn't seem to relate well to other students but at recess and lunch she 'haunts' whoever is on yard or playground duty.



Carla is a good 'all-rounder' academically. She's strong in language-based subjects and in maths. You'd certainly place her in the top quarter of your class. However, she doesn't seem to have the exceptional qualities that characterise a gifted child. She has high abilities but there isn't the 'spark' that indicates giftedness.



Darren in Year 2 is struggling academically and receives learning support. In the early part of the year he really tried hard and made some progress but now he seems to be switching off. Darren's mum, and your colleagues who taught him last year and the year before, say that this has become a pattern.

Now go to the 'feedback' section.



Feedback

Adam certainly is talented in Gagné's sensorimotor domain. His ability to run fast and well has been translated into high performance. We can identify his talent because it is clearly visible. We can even measure it objectively; we can use a stopwatch to time his performance and compare it against those of both his age-peers and older students.

Adam's popularity is probably related to the fact that he excels in a talent area that is valued by his peers - particularly since he can beat older boys! He has had no need to conceal his gift, so it has readily developed into a talent.

There doesn't seem to be any strong indication at this stage that Adam is talented academically but the first few months of school are very much a transition stage. We need to praise him for his talent in running and facilitate his further development. We have to be careful not to assume that the gift we have identified is his only gift; he may have more than one.

Bella's teacher, Ms Jens, once said, 'You hardly know she's there' and that is part of the problem. She seems to be happy to blend into the background. Unless we stop taking her at face value we may simply accept the picture she is drawing of herself.

Some academically bright students are wary of standing out in case their classmates tease or resent them. Is Bella seeking teacher protection at recess and lunch because of this? Or is she perhaps looking for someone to talk to about things her classmates are not interested in?

Carla is showing special aptitude in at least two subjects. If she's at least in the top quarter of the class, could she actually be in the top 10%? We have to guard against seeing gifted students as the 'exceptional' few. Has the school assessed her maths and reading on standardised tests of achievement? If her abilities are far beyond the level she's currently being encouraged to work at, that may explain why the 'spark' is missing!

Darren certainly seems to have learning difficulties - but has he ever been assessed to ensure that he also does not have a specific learning disability? Could his eagerness at the start of the year and the subsequent shift to disengagement mean he is losing confidence in himself? Can he work out things clearly in his head but have problems with getting the material down on paper?

It's not easy is it?

It's difficult to assess a student's level of ability or potential when you have such a small amount of information and when you are being asked to make a subjective judgement without objective data.

Adam's talent can be clearly seen. For Bella, Carla and David, we need more factual information and we need to know how to access that information. Module 2: **Identification of Gifted Students** will give you practical help on how to do just that.

Questions for Reflection

Have your views on what constitutes giftedness or talent changed over the course of this Module? If so, in what ways and why?

How often might you now expect to teach a gifted student?

Think of a child you have encountered in previous years whom you now believe may have been gifted? What was it about this child that makes you think that?



Resources

References

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The following URL links will allow you to access Australian state and territory policies and support documents on Gifted and Talented Education.

NEW SOUTH WALES

The policy can be accessed at the Department's web site:

<https://www.det.nsw.edu.au/policies/curriculum/schools/gats/PD20040051.shtml>

The companion document to the policy and associated support packages are available online at:

<http://www.curriculumsupport.nsw.edu.au/gats/>

QUEENSLAND

Education Queensland's "Framework for Gifted Education" can be accessed on:

http://www.learningplace.com.au/uploads/documents/store/doc_158_1129_gt-framework.pdf

TASMANIA

The policy can be accessed on:

<http://www.education.tas.gov.au/ocll/elsupport/giftededucation/policyguide.htm>

WESTERN AUSTRALIA

The policy can be accessed on:

<http://www.eddept.wa.edu.au/gifttal/policy.htm>

<http://www.eddept.wa.edu.au/regframe/Documents/DO04080914.pdf>

and the guidelines on

<http://www.eddept.wa.edu.au/regframe/Documents/DO04060063.pdf>

AUSTRALIAN CAPITAL TERRITORY

The ACT's policy can be found on the following websites:

<http://www.det.act.gov.au/policies/pdf/g&t.pdf>

<http://www.det.act.gov.au/policies/pdf/g&tguide.pdf>

SOUTH AUSTRALIA

Following is the URL link for our policy:

<http://www.decs.sa.gov.au/docs/files/communities/docman/1/GiftChildrenStudentsPolicy.pdf>

and also for the policy support material:

<http://www.sacsa.sa.edu.au> - [select *Equity/Cross Curriculum Perspectives* tab select *SHIP* tab]

VICTORIA

Victoria's Gifted website address is:

<http://www.sofweb.vic.edu.au/gifted>

NORTHERN TERRITORY

Not available at this time.

10

Characteristics and Needs of Talented Learners

Joyce VanTassel-Baska

Much of the foundational work in creating a field of gifted education has been based on the articulation of the characteristics and needs of gifted children. Early pioneers of this movement, such as Lewis Terman (1925) and Leta Stetter Hollingworth (1926), did much to aid our understanding of these children in the context of behavioral characteristics, and case study research has additionally refined our understanding. Witty (1930), Benbow and Stanley (1983), Tannenbaum (1983), and others also have sought to identify differences within the gifted population with respect to family backgrounds, special aptitudes, ability levels, and temperament. In more recent years, scales for rating behavioral characteristics (Renzulli, Smith, White, Callahan, & Hartman, 1976) have attempted to quantify the relative presence or absence of some of these key behavioral indicators.

The characteristics and needs of gifted children also have played an important role in defining appropriate interventions for gifted learners in schools. Classroom teachers frequently make inferences about curriculum that flow directly from the observation of a stated behavior (see Table 10.1). In this way, an “optimal match” might be made between the learner’s strength area and a curricular opportunity.

Psychologists also have begun to analyze individual test results for appropriate interventions to suggest to parents and educators for providing more extensive work in specific areas of strength. Table 10.2 presents a menu of ideas developed at the Center for Gifted Education at the College of William and Mary (1993) for matching student ability with appropriate options.

This chapter discusses some of the most significant characteristics and needs of the gifted child so the reader can more readily come to appreciate the nature of these

Table 10.1 ~
Characteristics of Gifted Learners and Curriculum Implications

Characteristics of the Gifted Learner	Curriculum Implications
Reads well and widely	Individualize a reading program that diagnoses reading level and prescribes reading material based on that level Form a literary group of similar students for discussions Develop critical reading skills Focus on analysis and interpretation in reading material
Has a large vocabulary	Introduce a foreign language Focus on vocabulary building Develop word relationship skills (antonyms, homonyms, and so on)
Has a good memory for things heard or read	Have student present ideas on a topic to the class Have student prepare a skit or play for production Build in Trivial Pursuit activities
Is curious and asks probing questions	Develop an understanding of the scientific method Focus on observation skills
Is an independent worker and has lots of initiative	Focus on independent project work Teach organizational skills and study skills
Has a long attention span	Assign work that is long-term Introduce complex topics for reading, discussion, and project work
Has complex thoughts and ideas	Work on critical thinking skills (analysis, synthesis, evaluation) Develop writing skills
Is widely informed about many topics	Stimulate broad reading patterns Develop special units of study that address current interests
Shows good judgment and logic	Organize a field trip for the class Prepare a parent night Teach formal logic
Understands relationships and comprehends meanings	Provide multidisciplinary experiences Structure activities that require students to work across fields on special group/individual projects
Produces original or unusual products or ideas	Organize curriculum by issues and examine those issues from different perspectives (e.g., poverty—economic, social, personal, education views) Practice skills of fluency, flexibility, elaboration, and originality Work on specific product development

Note: From *Comprehensive Curriculum for Gifted Learners* (2d ed.) (pp. 158–159) by J. VanTassel-Baska (1995). Boston: Allyn & Bacon. Used by permission.

Table 10.2
Individual Instruction Plan Menu for the Gifted Child

The following recommendations are intended for consideration by those who know the child well and can make informed decisions about the relevance and practical application of a curriculum recommendation to an individual child's aptitude, interest, and needs.

Language Arts

Reading

1. Use an inquiry-based study of appropriate children's literature (e.g., *Junior Great Books* program).
2. Select biographies and books in the content areas (including subjects dealing with multicultural issues) for supplementary reading.
3. Encourage and provide time to pursue free reading based on student interests.
4. Individualize a reading program that diagnoses reading level and prescribes reading material based on that level.
5. Form a literary group of students with similar interests for discussions of books read.
6. Provide literature that is broad-based in form (myths, nonfiction, biography, poetry, etc.), rich in language, and provides role models for emulation.
7. Utilize children's literature that involves finding solutions to scientific, environmental, and mathematical problems or mysteries.
8. Encourage participation in library-based programs.
9. Introduce students to new genres of books (e.g., science fiction).
10. Provide the opportunity for author study by having the child read several books by the same author.
11. Provide the opportunity for topic study by having the child read several books on the same topic and contrasting authors and writing styles.

Writing

12. Use a writing program that encourages elaboration and incorporation of ideas from literature into stories.
13. Develop expository writing skills.
14. Encourage extracurricular experiences that are language-based, such as school paper or yearbook.
15. Encourage personal journal writing.
16. Encourage use of a wide variety of words in writing through the use of thesaurus and dictionary.
17. Suggest keeping a journal for "word of the day" or "word of the week."
18. Encourage parents to transcribe child's stories at home.
19. Have students draw pictures to illustrate their stories and develop titles for them.

(continued)

Table 10.2 continued

20. Use tape recorders to initially record a story and have students transcribe it later.
21. Encourage free story building; provide students with a set of givens (character, plot pieces, a setting).
22. Have students respond in writing to a piece of music, a picture, or a poem presented in class.
23. Allow young students the freedom to write without requiring accurate spelling and grammar.
24. Provide opportunities for students to read written work out loud to individuals or to small groups of students.
25. Encourage child to submit written work for publication to children's magazines.
26. Have student attend available creative writing opportunities (e.g., special courses or writing camps).
27. Teach the writing process: prewriting, organizing, writing, editing, and rewriting.
28. Use writing skills across the curriculum.
29. Teach word processing.

Verbal Expression

30. Include experiences in foreign language in the curriculum.
31. Use storytelling techniques.
32. Teach debating skills.
33. Focus on vocabulary building.
34. Develop word relationship skills (e.g., analogies, antonyms, homonyms).
35. Allow for oral reports before the class.
36. Encourage child to join debate team.
37. Provide opportunities for student to speak in public settings.
38. Encourage theater club participation.
39. Provide the opportunity for the child to act out what is read.
40. Teach oral presentation skills.

Math

41. Focus on developing spatial skills and concepts through geometry and other media.
42. Focus on problem-solving skills with appropriately challenging problems.
43. Have student use calculators and computers as tools in the problem-solving process.
44. Focus on logic problems that require deductive-thinking skills and inference.
45. Emphasize mathematical concepts more and computational skills less.
46. Emphasize applications of mathematics in the real world through creation of special projects.
47. Emphasize algebraic manipulation.
48. Focus on the use of probability, estimation, statistics, and computer technology.

(continued)

Table 10.2 continued

49. Apply mathematical concepts across the curriculum, for example, by having the child read and report on a book about a famous mathematician, assess the mathematical challenges of planning a Civil War battle, or study a unit on the history of mathematics.
50. Facilitate the child's attendance at career seminars in math.
51. Utilize a diagnostic-prescriptive approach to mathematics that allows the student to move at a fast pace and not be subject to instruction in skills already learned.
52. Begin college preparatory courses as soon as possible.
53. Teach the creative process in mathematics, including problem-finding and problem-solving.
54. Encourage the student to participate in math-related challenges, such as Mathematics Olympics, Math Counts, Virginia Math League, and the Great Computer Challenge.
55. Allow student to substitute the five most difficult problems in a set for the 10 easiest.
56. Provide manipulatives such as pattern blocks, tangrams, and Cuisenaire rods.
57. Utilize computer-assisted drawing programs.
58. Assist the student in developing her or his own computer programs dealing with problem-solving skills.
59. Provide opportunities for the study of computer technology.

Science

60. Provide opportunities to visit museums of science and natural history.
61. Provide reading material that suggests experiments the child can try; provide a balance between text and activities.
62. Help the child develop a scientific hobby like birdwatching, shell collecting, gardening, or electronics.
63. Provide opportunities for naturalistic observation at the beach, mountains, or local pond.
64. Provide well-made scientific toys.
65. Provide basic tools, such as a magnifying glass, binoculars, and a camera.
66. Assist the child in selecting biographies and autobiographies about scientists.
67. Consider summer science camp experiences.
68. Provide opportunities for interacting with practicing scientists.
69. Place a strong emphasis on the inquiry process.
70. Emphasize topics that place science in the context of human decision-making and social policy.
71. Teach skills that help children to define a problem, make a hypothesis, and draw implications from data.
72. Teach the child to conduct literature searches.
73. Use open-ended questioning techniques.

(continued)

Table 10.2 continued

74. Foster the use of collaborative techniques by allowing students to work in small groups.
75. Establish a science mentorship program.
76. Explore educational programming at community facilities such as the National Aeronautics and Space Administration and Continuous Electron Beam Accelerator Facility.
77. Suggest that the student volunteer in a hospital, doctor's office, veterinary clinic, or science museum.
78. Review each December issue of *Scientific American* for science books for children.
79. Focus on problems that require deductive-thinking skills and inference.
80. Teach critical-thinking skills.

Social Studies

81. Provide opportunities for students to develop timelines.
82. Teach visual spatialization techniques.
83. Teach mapping strategies.
84. Teach metacognition.
85. Use puzzles and mazes.
86. Develop understanding of cultures.
87. Study the development of cities.
88. Develop geography and mapmaking skills.
89. Develop cultural literacy around important historical events in American history and world history.
90. Develop an understanding of global interdependence.
91. Analyze primary documents, including the Declaration of Independence.
92. Teach critical-thinking skills.
93. Assist the child in selecting reading in history, biography, and historical fiction.
94. Foster discussion of social and environmental issues.

Creativity/Aesthetics

95. Practice skills of fluency, flexibility, elaboration, and originality.
96. Work on specific product development.
97. Have the student prepare a skit or play for production.
98. Provide art appreciation opportunities.
99. Provide music opportunities.
100. Provide dramatic instruction.
101. Provide opportunities for dance and movement.
102. Teach role-playing.
103. Provide "collage" experience across art, music, literature.

(continued)

children. Furthermore, the chapter addresses those characteristics and needs in the framework of both cognitive and affective domains and draws implications for educational practice.

Characteristics of Gifted Children ~

Cognitive Characteristics

Gifted children display atypical behaviors in the cognitive arena from an early stage of development. If proper nurturance occurs in the environment, these characteristics continue to expand as the children grow older. When nurturance is not present, however, many of these characteristics can act as negative forces to learning or can be hidden because of a gifted child's vulnerability. When considering the cognitive characteristics of gifted children, one must bear in mind the following:

1. Not all gifted children will display all of the characteristics.
2. There will tend to be a range among gifted children in respect to each characteristic.
3. These characteristics may be viewed as developmental in the sense that some children may not display them at early stages of development but may at later stages. Others may manifest the characteristics from a very early age.
4. Characteristics of the gifted tend to cluster and thus constitute different profiles across children as the combination of characteristics varies.
5. Characteristics may reveal themselves only when students are engaged in an area of interest and aptitude.

The following cognitive characteristics provide a basis for differentiating programs and services for gifted students in schools.

Ability to Manipulate Abstract Symbol Systems The gifted child exhibits a facility for learning systems such as language and mathematics at an earlier age than is typical. Children with gifted potential usually become known to parents and teachers by their skills in manipulating language or numbers. Less apparent are abilities to solve puzzles and to use figural analogies or other kinds of nonlanguage systems. Available resources that enhance those skills early on are crucial to the development of superior talent. Thus, prodigies such as Bobby Fisher, who benefited from mentoring at the Manhattan Chess Club, and Wolfgang Mozart, who inherited a genetic predisposition and an environmental context for music from Leopold Mozart, are examples of people for whom talent and a supportive milieu resulted in eminence.

Power of Concentration The gifted child who is absorbed by a science project or other arcane subject is like the absentminded professor at the adult level. Both display a high degree of concentration and an ability to focus on a problem for a considerable period of time. The reality is that long-term application and concentration in an area of interest are important components for gifted children to cultivate. An

Table 10.2 continued

104. Introduce various artistic forms.
 105. Introduce various musical forms.
 106. Use biographies of creative people.
 107. Teach creative problem-solving.
 108. Use brainstorming.
 109. Provide exhibition space for student products.
 110. Provide opportunities to illustrate school publications.
 111. Allow the child to create new endings for stories read.
 112. Encourage the exploration of creative arts careers through library and guidance programs and contact with community members in the creative arts.
 113. Suggest that the child illustrate original stories.
 114. Consider providing an artist mentor.
 115. Provide unstructured activities, allowing the student to choose the medium of expression.
- Leadership/Social Skills**
116. Encourage leadership skills through work with small groups in academic settings.
 117. Encourage leadership skills through work with student government, safety patrol, or other school organizations and community groups such as Scouts, book clubs, or religious institutions.
 118. Explore leadership training programs for precollegiate students at local colleges and universities.
 119. Assist the child in selecting biographies and autobiographies about high achievers.
 120. Provide monitored opportunities for involvement in volunteer or social service work in the community or at school.
 121. Provide the opportunity for the student to explore people-oriented careers through mentorships, on-site observations, career fairs, and research.
 122. Provide support for the child as he or she copes with the inevitable frustrations and challenges in working with others to accomplish a goal.
 123. Encourage the exploration of service-oriented summer experiences such as camp counseling, recreation program assistance, or hospital volunteer work.

Note: Developed by the Center for Gifted Education, College of William and Mary, 1993. Used by permission.

enduring interest or curiosity in some field that produces expert-level knowledge may be satisfying for its own sake as an avocation or may become the foundation of a career. The MacArthur fellows (Cox, Daniel, & Boston, 1985) represent persons who have been rewarded for sustained contribution over an extended period of time in various fields. Such rewards speak to the recognition of promising work in society.

Unusually Well-Developed Memory Memory is the sine qua non for the acquisition of information. Many gifted students from an early age have a phenomenal memory for data they have been exposed to only once. One young boy at age 3 had memorized all the license plates, house numbers and telephone numbers in his neighborhood. Another young girl at age 4 could recite "The Night Before Christmas" in its entirety after only one practice session.

Although it is a central aspect of intelligence, memory can be trivialized into spelling contest activity or other demonstrations and feats that have few long-term implications and little usefulness. Memory of events that are connected by historical significance and related to other social, economic, and cultural change has more meaning than does memory of a series of dates with little connection.

Early Language Interest and Development The gifted child often exhibits precocious development in language and has a strong interest in reading from an early age. Cases of early reading from as young as 2½ years are not uncommon. One study documented that early reading was apparent by age 5 in 80% of children later identified as gifted learners (VanTassel-Baska, 1983). The early reader has become less of an anomaly in our society in recent years for a number of reasons, some related to decreasing family size, others to older parents who are career-established and able to devote more time and attention to home teaching. Television programming that includes "Sesame Street" and "The Electric Company" also may positively influence the reading skills children bring to school. Thus, this characteristic alone may be less predictive of gifted behavior than it once was, yet it is still moderately predictive of later advanced reading behavior (Mills & Jackson, 1990).

Children whose language extends well beyond reading into a fascination with words and word relationships, with using language in speech and writing, are exhibiting important indicators of verbal aptitude.

Curiosity The gifted child displays a strong need to know and to understand how the world works. From early childhood on, this child craves to make sense of the world, and adults who treat these questions with respect and provide information appropriate to the needs of the child help build in him or her a personality orientation that seeks to discover the world.

Curious children ask questions frequently, and often these questions are on adult subjects fundamental to the large issues of life, such as "How was the world created?" or "Where did I come from?" or "Why do people die?" This level of question illustrates the advanced level of thought in which such children engage, an important indication of advanced development.

Reconstruction of the world or internalization of personal knowledge that comes about in learning is a long-term process that can be damaged by insensitive parents or teachers. Thus, the teacher who "turns on" the child's curiosity is usually remembered long afterward as part of a pivotal educational event.

Preference for Independent Work The gifted child has a natural propensity for working alone, for figuring things out on his or her own. This trait reflects enjoyment in constructing an internal schema to solve problems rather than a tendency toward antisocial behavior. At age 13, Robert attended one of the eastern summer Talent Search programs at a major university. On entering the class, the instructor asked each of the students what he or she hoped to accomplish. Robert answered that he wished to complete algebra and trigonometry so that he could take Advanced Placement (AP) calculus in the fall. The instructor replied that all Robert needed to do was finish two math books, whereupon Robert said, "Give me the books." He finished both algebra and trigonometry with a 97+ grade average for the summer. He then took AP calculus as a high-school freshman and, because of a tragedy in the instructor's family, stepped in to teach the last 10 weeks of the course. Needless to say, Robert's independent work habits contributed significantly to his early accomplishments.

Multiple Interests The gifted child has a large storehouse of information that interacts with good memory skills as well as with wide-ranging interests. Adrienne was a 5-year-old child in first grade who appeared highly able, so it seemed reasonable for the teacher to discuss with Adrienne the concept of birds as linear descendants of dinosaurs. Even so, the girl's response, "Oh, you mean like Archaeopteryx," did come as a surprise. Similarly, after she was given an aquarium for her fourth birthday, she became an "ichthyologist" who could explain differences between skates and other fish to her older brothers. When asked about her favorite books, she spoke of an interest in science fiction and in H. G. Wells's *War of the Worlds*, which Adrienne had read four times. This was the same child who was criticized by her teacher for being inattentive to the spelling lesson from the second-grade curriculum. Thus, the characteristic of having multiple interests may be missed or go unappreciated in gifted children if activities used with them do not allow for open exploration in a variety of areas.

Ability to Generate Original Ideas The gifted child can generate novel ideas on his or her own or in collaboration with others. In some gifted children this ability is manifested predominantly in one area, but for others the creative response is marked in several types of endeavor. John was a published poet in fourth grade partly because of his teacher's encouragement and partly by virtue of the writing talent search in his large school system. His science fair project was an example of programming subtleties with numbers. Lien and Phillip collaborated successfully as 10-year-olds on building a model city, complete with electricity.

These cognitive characteristics are typical of intellectually gifted students but may need to be considered in tandem with characteristics related to specific cur-

Sense of Humor Gifted children often have the ability to recognize or appreciate the inconsistencies and incongruities of everyday experience. The relatively large knowledge base they possess allows them to perceive those instances more quickly than their age-mates do. A sense of humor and a playfulness with ideas attest to the gifted child's ability to interpret the world in what may be a less threatening manner. Humor can defuse many painful experiences and subtly point up foibles with less damage to the self-esteem of the child or of others. Humor also can be used for self-deprecation and self-defense, leading some gifted children to become known as the class clown or stand-up comic. Because this use of humor may mask a deep sense of alienation, it may be cause for concern.

Emotional Intensity Just as gifted children are more able cognitively, they frequently experience emotional reactions at a deeper level than their age peers do. The death of a pet, for example, caused days of grieving for Dylan. The ability to emotive within a dramatic framework makes gifted children good candidates for theater productions. Their sensitivity to nuances of expression and use of language is an asset in that activity. That same asset can become a liability when other children find they can provoke a reaction that brings negative attention to the child. The hypersensitivity of gifted children in the general education classroom is a phenomenon that troubles many parents. The homogeneous grouping of high-ability children academically and socially potentially places them in a more accepting environment that reduces the temptation for attack by their age-mates. The opportunity to share experiences for these children and the reduction of the isolation they may have felt in a general education classroom should be viewed as some of the more important benefits of the grouping/identification process.

Early Concern About Death A concern with death or mortality often emerges early in the thoughts of gifted children. Responding to these concerns, and helping these children understand and accept the life-cycle process, is an important role for educators and parents and is one that must be approached and treated with maturity. Learning to use their cognitive strength to view the natural process apart from the emotional impact and stress that accompany the death of loved ones will be an important part of the emotional growth of gifted children. Respect for and celebration of life should be part of this process. The discovery of intergenerational relations through tracing the family tree and coming to know the events in the lives of forebears also offer a good perspective and a sense of identity for the child.

Perfectionism Many gifted children display characteristics of perfectionism. These children focus undue energy on doing everything perfectly and become disturbed if they or others in their environment make mistakes. Sally became incensed when she received a 98% on her paper because of a punctuation error. She immediately asked the teacher if she could redo the paper. Ed reacted very sullenly when members of his group could not answer the quiz bowl questions he considered easy.

In our enthusiasm to encourage a child to do his or her best work, we may cross a line that causes the child to internalize perfectionistic tendencies. A realistic accep-

riculum applications. For example, mathematically precocious children may be best identified using the following list of behaviors:

- Early curiosity and understanding about the quantitative aspects of things
- Ability to think logically and symbolically about quantitative and spatial relationships
- Ability to perceive and generalize about mathematical patterns, structures, relations, and operations
- Ability to reason analytically, deductively, and inductively
- Ability to abbreviate mathematical reasoning and to find rational, economical solutions
- Flexibility and reversibility of mental processes in mathematical activity
- Ability to remember mathematical symbols, relationships, proofs, methods of solution, and so forth
- Ability to transfer learning to novel solutions
- Energy and persistence in solving mathematical problems
- Mathematical perception of the world

Thus, cognitive strengths may be discerned by observing students at work in a given area of learning.

Affective Characteristics

The following affective characteristics provide another important lens through which to view the developing gifted child. This set of indicators provides information about the social and emotional development often seen in gifted children.

Sense of Justice Gifted children display a strong sense of justice in their human relationships. At later ages they generally are attracted to causes that promote social equality. This characteristic reflects a general concern for others and also a concern that the world work in a humane way.

At age 6, Renee wanted to protest the nuclear waste dump disposal procedures in her community. She made up signs, organized her friends, and carried off a "kids" march.

Altruism and Idealism Gifted children in general display a helping attitude toward others that may manifest itself in wanting to serve, to teach, or to tutor other children. They also may want to volunteer at a hospital or a senior center in the community. They may become very supportive of parents or older adults, taking on a caregiving stance. The altruism and idealism that gifted children exhibit frequently lead to involvement in service organizations or leisure activities that can consume large amounts of energy. This is a socially desirable direction when balance is maintained with the child's growth and when those activities promote goals that the parent can appreciate or at least accept. The sensitivity and insight these children bring to working with others, coupled with their altruism and idealism, can become a basis for later career decisions as well.

tance of error in people and in the world and of the imperfection of our own knowledge should temper the judgments a child is likely to make. The unrealistic fear and anxiety that can accompany perfectionism may hinder growth or result in guilt that works against the child's maximal development. Growth should be toward excellence, not perfection—a subtle distinction that teachers and parents must appreciate when working with the gifted child.

High Levels of Energy Gifted children often display high energy in the conduct of play and work. This energy can be observed in the ability to accomplish a great deal of work in a short time or in highly tuned verbal or psychometric activity.

In fourth grade, Lenore decided on her own to work on homonyms one weekend, after having been introduced to them in school on Friday. She discovered over 450 by careful dictionary work and proudly brought her list to school on Monday.

The high energy levels that gifted children bring to school tasks can be misinterpreted as hyperactivity by teachers who are not sensitive to rapid learning styles. Using the child's energy for productive purposes requires channeling it into meaningful tasks and encouraging persistence in working toward short- and long-term goals. The resulting motivation for achievement and success then will reinforce the child's identity and self-esteem. Positive use of high energy is a critical part of gifted children's emotional development so that boredom, frustration, and a tendency toward hostile outlets for the energy do not develop.

Strong Attachments and Commitments The gifted child frequently forms strong attachments to one or two friends who may be a few years older or to an adult figure. And these children, as they develop, form equally strong attachments to their work.

Laurel, at age 12, has maintained only two strong friendships. But these friendships were begun at age 2 and have continued to evolve. Winston, now in college, corresponds regularly with a drama teacher he became close to as a seventh grader.

Providing opportunities for role modeling of an ego ideal or hero can help the gifted child use his or her strong attachments to begin to formulate a long-range focus toward adult life goals. Mentors can provide a view of the adult world that will help a gifted child understand the commitment required for vocational success. Gifted children also tend to form unusually strong attachments to "the idealized self" that have to be balanced with the reality of human development over time.

Aesthetic Sensitivity The gifted child's appreciation of complexity often is expressed through aesthetic sensitivity. The "unity in variety" that is integral to works of art provides intellectual and emotional satisfaction in ways that are surprisingly comprehensible to young gifted children. Lisa was writing poetry and illustrating it at age 5, with her first book completed by age 7. The multilayered analysis required for interpreting works of art appeals to the gifted child and presents an excellent opportunity for demonstrating an interdisciplinary view of knowledge. Opportunities that enhance perceptual processes through music, dance, and drama are appropriate ways to stimulate gifted children and address their needs in this area.

These affective characteristics are crucial to understanding the personality structure of the gifted child. Yet each set of characteristics—the cognitive and affective—explained independently is less powerful than seeing them merged into an integrated structure. Silverman (1993) conceptualized the cognitive and affective characteristics of the gifted as corresponding characteristics, each understood as a reflection of the other. This integration of the nature of gifted children is a useful tool for addressing their needs in a more holistic and effective way.

Needs of Gifted Children ~

An important way to view the needs of the gifted child is through the lens of behavioral characteristics. In so doing, we can translate these characteristics into a set of educational needs that schools might address. Tables 10.3 and 10.4 summarize the linkage of key cognitive and affective characteristics, respectively, to learning needs and to curriculum interventions for the gifted.

Many times, gifted children appear to be "out of sync" for their age when we consider the normal development expected at any given age in cognitive, emotional, and physical realms. The mythical "norm" has become a benchmark that schools use; however, it may fit very few students in any case and is especially pernicious when applied to the gifted. The ceiling effect of the regular grade curriculum and the distorted notion of the child's ability based on the narrow-range sampling of standardized testing obscure a realistic view of gifted children. This situation is compounded by the fact that gifted children share many characteristics with all children; they may excel intellectually but be more typical in respect to physical or emotional development.

The match of ability to curriculum that maximizes opportunities of choice and development has ostensibly become the cornerstone of educational planning for all students. Gifted students have a right to such an optimal match of curriculum and ability without their parents having to create elaborate explanations of need. The need can easily be discerned from student behavior in the classroom. The characteristics of gifted children described in this chapter are relatively easy to recognize if educators are looking for such indicators, especially in young children before the behaviors have "gone underground" in favor of more socially accepted ones.

Too frequently, the school's resources and priorities become ordered on the basis of "obvious need," which usually means failure or some other negative attribute. Because gifted students do not have trouble with the core curriculum, they are ignored while others are served, and when the problems of mismatch become troubling, the home or parents are blamed. Arguments against providing for the gifted are many, but they usually constitute excuses to maintain the status quo and reduce parental complaints.

Gifted children often have large variability in their profiles, which leads to attacks on their "weak" or average areas as evidence of "ungiftedness." Overlooking the strengths of these children and the implications for change in curriculum is a

Table 10.3~
The Relationship of Characteristics, Learning Needs, and Curriculum for the Gifted (Cognitive)

Characteristic	Learning Need	Curriculum Inference
Ability to handle abstractions	Presentation of symbol systems at higher levels of abstraction	Reorganized basic skills curriculum Introduction of new symbol systems (computers, foreign language, statistics) at earlier stages of development
Power of concentration	Longer time frame that allows for focused in-depth work in a given area of interest and challenge	Diversified scheduling of curriculum work "Chunks" of time for special project work and small-group efforts
Ability to make connections and establish relationships among disparate data	Exposure to multiple perspectives and domains of inquiry	Interdisciplinary curriculum opportunities (special concept units, humanities, and the interrelated arts) Use of multiple text materials and resources
Ability to memorize and learn rapidly	Rapid movement through basic skills and concepts in traditional areas; more economical organization of new areas of learning	Restructured learning frames to accommodate capacities of these learners (speed up and reduce reinforcement activities) New curriculum organized according to its underlying structure
Multiple interests; wide information base	Opportunity to choose area(s) of interest in schoolwork and go into greater depth within a chosen area	Learning center areas in the school for extended time use Self-directed learning packets Individual learning contracts

Table 10.4~
The Relationship of Characteristics, Learning Needs, and Curriculum for the Gifted (Affective)

Characteristic	Learning Need	Curriculum Inference
Need for justice, fair play	Understanding of the complexity of issues associated with justice	A course study curriculum of humankind Study of court cases (judicial opinion) Bill of Rights/Constitution as sources of understanding
Altruism	Opportunities to help others matched with understanding needs of family and personal needs	Work with younger gifted children Study of the role of religion in televangelism from a review of newspaper articles and presidential campaigns Study of Puritans and early American religion
Humor	Opportunity to appreciate various forms of humor; use of humor for positive and negative purposes	Political cartooning in perspective Satire in Greek drama Clowns; pathos/bathos
Interest in death and mortality	Appreciation of human life cycle	<i>Roots</i> model for genealogy Use of curriculum that takes a life-span perspective
Perfectionism	Acceptance of human fallibility as a natural event	Heisenberg principle of indeterminism Understanding of statistical probability Safe risk-taking activities that allow students to fail

(continued)

Table 10.4 continued

High energy	Focus of attention to make best use of that energy	Psychomotor outlets for sublimation Gradual lengthening of learning increments Variety of experiences
Commitment	Realistic assessment of talent and process necessary to achieve	Mentoring Counseling toward goal in systematic fashion
Aesthetic sensitivity	Development of skills as an observer or performer	Exposure to the fine arts from various periods of history Opportunities for interrelated arts curriculum

much easier strategy than addressing the needs of their giftedness because there already are mechanisms in place for giving additional time to the “weaknesses.”

Another strategy of schools as gatekeepers consists of making the criteria for identification so cumbersome or restrictive that only a few children are found to qualify. This strategy allows the schools to have an identifiable program for public relations purposes and at the same time keeps the number of students small enough to maintain the status quo in regular classrooms.

A common problem related to the peaks and valleys of development for the gifted is the contrast of rapid cognitive development with less rapid physical maturation. Accelerating students as an accommodation to rapid mental growth by placing them with older students is a common school strategy that has been employed during the years. Because cognitive and physical maturation rates operate separately, this acceleration can highlight the differential in unrealistic ways. Thus, the child who can think through problems but not write them fast enough for the final test is penalized for writing and not thinking.

The narrow range on grade standardized achievement tests that schools use for accountability also has become a problem for the gifted. Little diagnostic or teaching information is to be derived from 95th percentile and above scores, and gifted children are characteristically in this group on such measures. The school’s explanation of these scores usually points to the excellence of its teaching and programs rather than to the problem inherent in a test that was too easy in the first place to provide useful information on superior learners. A more realistic testing procedure should be used that provides data that can be used to tailor the curriculum to the gifted child’s needs.

Summary

This chapter has delineated important characteristics and needs of gifted learners. Schools and parents must provide appropriate experiences to nurture these characteristics and needs. Thus, the case for gifted education in schools must rest on a firm foundation of differential characteristics. The following understandings emanate from appreciating the nature of gifted children:

1. Gifted students, like other populations that deviate significantly from what we call the norm for learning, have learning needs that require a special education program. Characteristics such as varied interests, intense curiosity, and the ability to manipulate abstract symbol systems all point to the need for a responsive school environment.
2. Most gifted learners will not develop their potential commensurate with their capacity without careful nurturance—some of which must be provided by the home and greater community and some by the schools. Data on dropout rates among the gifted, the lack of funding for and servicing of low-income students who have promise, and serious problems with underachievement among that population all point to areas of need.
3. A general education program does not respond adequately to such specialized needs because of an undue emphasis on basic skills taught from basal texts.
4. Change in schools is slow and reactive in nature, and innovative efforts are frequently diffused. Consequently, seeking positive change with a targeted group of learners whose performance outcomes can be impacted most greatly provides a safe testing ground for efforts ultimately to be used with larger segments of the school population.

Gifted education seeks to enable and empower exceptional learners to engage in meaningful experiences that will help develop their initial promise, both for the sake of themselves and of society. Gifted education also seeks to use what is learned from successful work with the gifted to make positive changes in schools for all learners.

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Study Questions ~

1. How do the particular needs of gifted children pose special challenges for schools?
2. What approaches could teachers reasonably explore when gifted children are not producing or flourishing in school?
3. What are some of the problems inherent in labeling children as gifted? How might sensitive educators deal with these problems?
4. How can we involve parents more effectively in recognizing and acting on the observed characteristics of their children?
5. How might the affective characteristics of gifted children be supported in the home? In the school? In society?
6. Individual profiles of gifted children typically reveal differential mixes of cognitive and affective characteristics. What might we infer from this situation with regard to identification and programming in schools?