

**Gifted and talented children in (and out
of) the classroom**

**A report for the Council of Curriculum,
Examinations and Assessment (CCEA)**

Feb 28th 2006

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What does it mean to be Gifted/Talented?

Identification of the gifted and talented can pose a problem to teachers and education professionals because they are not a homogeneous group. The typical picture of the highly able child is of a hard-working pupil who diligently completes work, and is perhaps known as the class “swot” or “brain box”. In reality the picture is much more complex than that. Alongside the gifted achievers are those who - despite their gifts and talents - persistently underachieve due to boredom, lack of interest, or crippling perfectionism; young children who are cognitively advanced enough to play games with complex rule structures and yet not socially mature enough to deal with the frustration that occurs when their peers cannot grasp the game; children whose giftedness may be masked by the fact that they are not being educated in their first language or who have also have a disability.

The vast number of definitions for giftedness and talent can be quite confusing. We have provided some of the better known definitions in the section below in order to give you an overview of the area. No one definition is perfect – highly able children can no more be fitted into one neat category box than any other child whose range of experiences has shaped his or her attitudes to learning and achievement.

Definitions of giftedness and talent

Before beginning to develop provision for gifted and talented students it is necessary to understand just what is meant by these terms, and how they apply to children in our classrooms. There is large variation in the range and breadth of definitions of gifted and talented students, and little consensus on a satisfactory definition. This lack of clarity led Gagne to remark that the concept of giftedness is at times difficult to defend because it is “defined too loosely while being measured too restrictively” (Gagne, 1995, pp 104).

Giftedness versus talent

Originally the words gifted and talented were often used interchangeably, or at times the concept of “talent” was seen as being in some way lesser compared with the idea of giftedness. For example Morelock (1996) referred to a hierarchical categorisation

with “talent” referring to specialised aptitudes that are assumed to be unrelated – and inferior - to general intelligence and giftedness. In the mid 1990’s, the term “talented” was often used to replace “gifted”, which was thought to have connotations of “getting something for nothing”, or being specially chosen in some way. Freeman (2000) and Winstanley (2004) both comment that the term “gifted” often seems to have religious overtones of gifts bestowed by God. Winstanley also remarks that this also implies moral connotations to do with being gifted, as if the child has a responsibility to apply themselves and not waste their abilities. The term “able” and variations of it are used frequently in the educational literature as it is felt to be more appropriate and less emotive. In both Wales and Scotland pupils are classified as “More Able and Talented” and “Able” respectively. Winstanley (2004) notes that the term “able” is often prefixed by words such as “more”, “very”, “severely” or “profoundly”, in order to create subtle distinctions that are often neither objective nor useful. She advocates using the term “highly able” for the majority of able pupils and “exceptionally able” for those who are particularly outstanding. However, the terms “gifted” and “talented” are those that are used most frequently in government strategies and research literature and so will be used in the rest of this review. In this report the terms are not intended to be synonymous, and are defined separately.

Gagné (1991) differentiated between the concepts of gifted and talented by defining giftedness as above-average competence in human ability, and talent as above-average performance in a particular field. Giftedness refers to human aptitudes such as intellectual or creative abilities. Talent however is demonstrated in an area of human activity such as mathematics, literature or music. Freeman (2000) echoes this definition, adding that gifts are usually easy to measure as intellectual aspects of development, whereas talents are normally discovered by experts in those fields. This can be further clarified by Munro’s (2001) distinction between talented students as displaying exceptional ability in areas in which they have been explicitly taught, and gifted students as those who display exceptional ability in certain areas without explicit teaching. Thus it follows that a gifted student may not necessarily be defined as talented.

In 1988 the US Congress defined gifted and talented as:

“The term “gifted and talented students” means children and youth who give evidence of high performance capability in

areas such as *intellectual, creative, artistic, or leadership* capacity, or in specific academic fields, and who require services or activities not ordinarily provided by the school in order to fully develop such capabilities”

Deborah Eyre (1999) provides a simpler definition: “An able child, as defined by our school, is one who achieves, or has the ability to achieve, at a level significantly in advance of the peer group. This may be in all areas of the curriculum or in a limited range.”

As of 2005 the current definitions from the Department for Education and Skills in Great Britain (DfES) are as follows:

Gifted: the top 5-10% of pupils per school as measured by actual or potential achievement in English, Maths, Science, History, Geography, Modern Foreign Languages, RE, ICT or Design and Technology.

Talented: the top 5-10% of pupils per school as measured by actual or potential achievement in the subjects of Art, Music or PE.

However one element of this description should be emphasised: it is the top 5-10% of pupils *per school, regardless of the overall ability profile of pupils.*

Categories of definitions of giftedness

McAlpine (1996) classified definitions of giftedness according to three criteria; whether they are conservative or liberal; single- or multi-dimensional; and whether they are based on potential or performance.

Conservative versus liberal

Conservative definitions tend to restrict the areas that are included in the categorisation of giftedness or talent, or how many people will be regarded as gifted – for example the top 5% of any given measure of ability. These definitions also tend to use a single dimension such as high intelligence (as measured on an I.Q test), to define giftedness. More liberal definitions would suggest that there is no meaningful

difference between those who score in the top 3-5%, and the 10-15% who come just below and so would advocate that 15-20% should be included in the gifted category.

Single- versus multidimensional

Some definitions of giftedness refer to ability in just one domain, usually academic, while others include achievements in a number of domains. The more domains that are included the more liberal the definition could be considered to be. While a broad definition of giftedness is desirable as it makes it less likely that individuals who are gifted will be overlooked, it is also necessary to guard against creating a definition so broad that everyone is regarded as gifted, undermining the exceptionality of the individual.

Potential versus performance

Some definitions require concrete evidence of above average performance. Others include children, for example those who are underachieving, whose performance may not be exceptional but who would be considered to have further potential. Freeman (1998) remarked that the inclusion of the word “potential” in within a definition of gifts and talents, rather than only recognised performance, often serves to diminish the “elitist” nature of many definitions.

Culture and Context

Along with these categories it should be remembered that the ideas of giftedness and talent and dependent on both culture and context. Which categories of definition are advocated internationally depends on the educational culture and school system of that particular country. On a more local scale, and because the term gifted is always a comparison, children can be called gifted at very different levels of achievement. In highly selective schools some children might be viewed as “stupid” by classmates, whereas they might be termed “gifted” in other schools.

Identifying gifted and talented students

Clear, objective and useful criteria are needed in order to identify the most able pupils in education and provide for their needs. However, the vast array of definitions, as well as common prejudices about what constitutes giftedness/talent can often hamper

the establishment of these guidelines. Giftedness is often equated with high IQ, and yet IQ measures alone may not pick up the all of the highly able children in a classroom setting. A number of researchers have proposed checklists of characteristics, implying that it should be possible to simply tick boxes pertaining to the attitudes and behaviours of pupils. Winstanley (2004) notes however, the desire to be inclusive means that the checklists are often unwieldy, too vague to be useful and at times completely contradictory. To give an example of this below are elements from two checklists displayed side-by-side:

Able pupils are likely to:

Demonstrate unusual curiosity	Exhibit boredom
Finish work with ease and speed	Take extra time to finish tasks to a high standard
Have many friends	Be quite isolated
Contribute willingly in class	Refuse to comply with instructions
Be interested in a broad variety of topics	Only express interest in a narrow range of subjects

These examples are taken from Eyre (1997) and the DfES website “Excellence in Cities”, and are reported in Winstanley (2004). They are a good illustration of why gifted children cannot be treated as a homogeneous group and caution those who seek to describe them according to a set of pre-defined attributes. Checklists can be valuable instruments for stimulating thought and they may spark recognition in teachers for pupils perhaps not previously considered gifted. It is recommended that any checklists in this document are used as a starting point for thinking about giftedness and talent rather than as a diagnostic tool.

General Characteristics of Gifted, Talented and More Able Pupils.

Many educationalists have produced lists of characteristics of very able children. Familiarity with these characteristics can help teachers to build up a pupil profile of learning strengths. Such a profile may help to identify a pupil who might not be achieving at a particularly high level but who may have real ability in certain areas.

He or she may:

- be a good reader
- be very articulate or verbally fluent for their age
- give quick verbal responses (which can appear cheeky)
- have a wide general knowledge
- learn quickly
- be interested in topics which one might associate with an older child
- communicate well with adults – often better than with their peer group
- have a range of interests, some of which are almost obsessions
- show unusual and original responses to problem-solving activities
- prefer verbal to written activities
- be logical
- be self taught in their own interest areas
- have an ability to work things out in their head very quickly
- have a good memory that they can access easily
- be artistic
- be musical
- excel at sport
- have strong views and opinions
- have a lively and original imagination / sense of humour
- be very sensitive and aware
- focus on their own interests rather than on what is being taught
- be socially adept
- appear arrogant or socially inept
- be easily bored by what they perceive as routine tasks
- show a strong sense of leadership
- are not necessarily well-behaved or well liked by others

None of these behaviours are proof of high ability but they may alert teachers to the need to enquire further into a pupil's learning patterns and ability levels.

Parent's reports

Parents often have a detailed knowledge of their children's abilities, and can be a very useful source of information in identifying a child as gifted/talented. Louis and Lewis (1992) found that parents were correct 61% of the time in identifying their child as gifted, with the remaining 39% correct in that their children were advanced but did not meet the criteria for giftedness. Parent's reports are often dismissed as biased or as evidence of a pushy parent, but in actual fact most parents think that their own child is gifted (Davis & Rimm, 1998) and it is more common for parents to underestimate their children than overestimate, especially when the parents are well-educated (Chitwood, 1986).

Peer nominations and self-report.

One form of identification that is often overlooked is peer nominations. Children in the classroom are very good at nominating gifted and talented students, as they have the opportunity to observe who finishes work with ease, or who helps them out to complete their own work. Peer nominations can be especially useful in identifying students from disadvantaged, culturally different or minority backgrounds. One example of a peer nomination exercise takes the form of a game of make-believer. Children are asked to imagine that they are stranded on a desert island and must name the classmate who would be the best organiser (leader, persuader), best judge (settles arguments, fair), fixer (improves things), inventor (invents, discovers), entertainer, etc (Jenkins, 1979).

Self-reporting should be used with older children who are often more self-aware and know their capabilities. Teachers may be unaware of the interests, motivations or extra-curricular activities of older students, and in some cases underachievement may mask the presentation of abilities.

Why provide for gifted and talented students?

The idea of specialised provision for gifted and talented students can be very emotive and can raise arguments ranging from accusations of elitism to the dangers of “hot-housing” young minds.

Arguments that differentiated provision for gifted students is elitist are most often levelled in the context of academic subjects. Our society strives for equality and fairness, so it seems unreasonable to give extra attention to those who are already highly able in languages, sciences or the arts. However, such an argument is rarely made when a student excels at music or sport. In those cases the student is rarely expected to stand aside and wait for those less talented to catch up but encouraged with private lessons and extra-curricular activities. Such thinking implies that some gifts and talents are more valuable or more deserving of nurturance than others, which itself is elitist.

Another common attitude towards provision for gifted and talented students is that due to their abilities and potential, they already have the right tools for future success. Time and money instead needs to be devoted to the children at the “other end of the spectrum”, those with disabilities and disadvantage to allow them the same opportunity to succeed. There are two compelling (and related) arguments to rebut this viewpoint. Firstly, as previously mentioned and contrary to the popular perception, the gifted and talented are not a homogeneous group of hard-working, well-adjusted and achieving students, nor can we talk about a dichotomy between those who are gifted and those who have disabilities or learning difficulties. As will be discussed in this course of this document, children who are gifted and talented may also have emotional problems, adjustment issues, intellectual disabilities or they may be underachieving due to boredom, frustration, low self-esteem or stress. It is neither useful nor fair to attempt to categorise assume that just because they are gifted some students will not need further encouragement or help. All pupils are entitled to an education based on their needs.

Secondly, all pupils are entitled to an education that takes them beyond the minimum basic skills and stretches them to develop their abilities as best they can. If we do not expect a student who is a talented sportsman to play less than his best because his age peers are not so advanced, why should a student who is gifted/talented in mathematics

be required to sit quietly and wait until the rest of the class is finished or to complete more of the same sums to fill the time? Boredom often turns to frustration and underachievement and disaffection with the learning process. The education system has a responsibility to provide an *appropriate level of challenge for students of all abilities*, not just those who may be classified under the traditional bracket of “special needs”. This is true, even in cases where the student’s potential performance will outstrip the necessary requirements (Winstanley, 2004). In her book “Too Clever by Half – a fair deal for gifted children”, Carrie Winstanley gives an excellent overview of the range of economic, moral and educational viewpoints proposing and opposing provision for gifted and talented children that are not covered here.

The concept of intelligence

There is no one agreed-upon definition what constitutes intelligence but the one most widely used by psychologists today describes intelligence as “knowledge and information about the world, and the ability to use that knowledge to reason about, and adapt to, our surroundings” (Sternberg, 1985). A number of theorists in the field of education have taken components of this definition and applied it to our knowledge of gifted and talented individuals in order to provide their own conceptions of what constitutes giftedness/talent. Three influential model of giftedness and talent or intelligence are presented here.

Renzulli’s Three-Ring Model

Renzulli (1986) reports that research on gifted and talented individuals shows that they possess three particular traits that interlock and affect each other: above-average ability, creativity, and high levels of task commitment. Taken together, these three traits constitute giftedness.

Well above average ability is characterised by:

- 1) High levels of abstract thinking, verbal and numerical reasoning, spatial relationships, memory and word fluency.

- 2) adaptation to novel situations
- 3) rapid, accurate and selective retrieval of information
- 4) the application of these abilities to one or more specialised areas of knowledge, techniques and strategies
- 5) appropriately using the abilities in (4) in pursuit of particular problems or interests
- 6) the capacity to sort relevant from irrelevant information in (5)

Task Commitment is characterised by:

- 1) the capacity for high levels of interest, enthusiasm, fascination and involvement
- 2) the capacity for perseverance, endurance, determination, hard work and dedicated practice
- 3) self confidence- belief in one's own ability to carry out important work
- 4) drive to achieve
- 5) ability to identify specific problems and tune in to major channels of communication and new development
- 6) setting high standards for one's own work
- 7) maintaining openness to self criticism and other's criticism
- 8) Development of an aesthetic sense of quality and excellence in one's own and others work.

Creativity is characterised by:

- 1) fluency, flexibility and originality
- 2) openness to experience and receptivity to what is new and different
- 3) curiosity, speculative thinking, adventurousness and willingness to take risks in thought and action
- 4) sensitivity to detail and the aesthetic characteristics of things and ideas
- 5) A willingness to act on or react to external stimulation and one's own ideas and feelings.

Renzulli maintains that between these clusters of characteristics there is overlap and interaction and that all traits cannot be expected in any single individual.

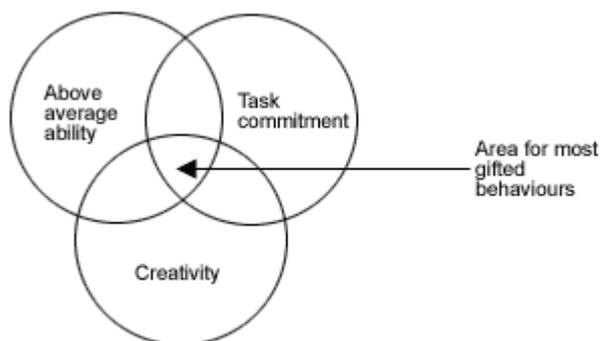


Fig 1. Renzulli's three-ring conceptualisation of giftedness

Critics of this model argue that Renzulli's model is not so much about giftedness, as it is about how potential can be translated into talent. Feldhusen and Hoover (1986) claim that the three tenets of Renzulli's model, when taken together, actually account for the realisation of gifted potential. Once this "sense of self" has been created, it spurs a motivation to learn and to achieve. Essentially Feldhusen and Hoover see motivation and creativity as the result of an environment that facilitates educational development and a "sense of self" with regard to talent. While motivation and creativity are goals that we should aspire to develop in any education system, they are not the cause of giftedness or talent, and therefore should not define it.

Further, Renzulli's model does not provide any means of identifying children who are underachieving, as they may lack the necessary criteria of task commitment. With respect to younger children, the model is also inadequate. Renzulli's accepts that the three criteria may not be fully developed in young children but suggests that they will still be identified as gifted if it is likely that they will later go on to develop these traits. However, how this potential could be assessed is unclear, and also if their environment is not stimulating, then they may not be motivated – they will lack task commitment.

The role of creativity in this model is contentious. If creativity is seen as distinct from giftedness or talent, as some would suggest, then the child is actually required to show

capability twice over. Alternatively, if creativity is characteristic of any thinking (Ebert, 1994) then that criterion is superfluous. Renzulli's model basically conceptualises giftedness and talent as internal to the individual.

Gardner's Theory of Multiple Intelligences

Gardner suggests that the idea of a general intelligence or *g* is not sufficient to capture the breadth and adaptability of human intelligence. Taking a multi-disciplinary approach, Gardner (1983; 1997) has proposed the existence of eight co-existing intelligences possessed by each individual.

The intelligences are:

1. Logical-mathematical – entailing good reasoning ability
2. Spatial – involves the ability to interpret information in two or three dimensions, such as when appreciating art, constructing graphs, or reading maps
3. Verbal – the ability to use language well and creatively to express oneself
4. Musical – an aptitude for patterns and rhythms in music, for expressing emotion in music
5. Bodily-Kinaesthetic – entailing motor skills and physical co-ordination, perhaps expressed through dance or sport
6. Interpersonal – the ability to deal with varied social situations, to read social cues and produce effective social behaviour.
7. Intrapersonal - involving knowledge and awareness of one's own strengths, weaknesses and needs, understanding of one's own emotions and the ability to use this understanding to inform your behaviour
8. Naturalist – involving knowledge and awareness of the environment, sensitivity to features of the natural world.

The intelligences are relatively autonomous and can be combined in many adaptive ways by individuals and cultures. The intelligences are described as biological and psychological potential, and are unevenly distributed across the different skill areas so that everyone has an individual cognitive profile. However, Gardner claims that the skills work in harmony with each other, so “their autonomy may be invisible” (Gardner, 1983). Gardner cites as evidence for his theory the cases of autistic savants, who show exceptional ability in one particular domain, while struggling with severe

impairments in other aspects of their cognition and patients with acquired brain injuries where one faculty or talent has survived intact. While there are a number of documented cases of such individuals, the case of the savant is in itself an exception to the norm.

People who test highly on one particular subscale of the eight intelligences usually tend to also score highly on a number of the other scales. While Gardner might argue that this is the intelligences “working in harmony” there is little evidence to support this and it is interpreted by others as evidence for a single capacity or general intelligence. The fact that Gardner is currently proposing the expansion of the model to include a further three intelligences has also provoked scepticism with regard to the scientific basis of the model.

Gardner and others have also debated the appropriateness of labelling each of the 8 segments an “intelligence” – some appear to better suit the definition of a talent, and do not correspond with even the more modern and liberal definitions of what constitutes intelligence. Others deal with the outcomes or products of intellectual and cognitive processes, but not the processes themselves.

The strength of Gardner’s theory lies in its contribution to broadening educator’s views of ability and in valuing a broad and differentiated curriculum, providing diversity for children. However, the scientific basis of the theory needs further investigation before it is held up as a model of giftedness/talent.

The Multiple Intelligences Table

*Adapted from the book **Succeeding with Multiple Intelligences***

By Howard Gardner (1996)

Intelligence	What Learners Like To Do	Teachers Can
Interpersonal	<ul style="list-style-type: none"> • Sensitive to the mood and feelings of others • Understand people well • Interact and co-operate effectively with others • Good at leading, sharing and organising • Mediate between people • Enjoy playing social games • Listen well to others • Enjoy many friends • Meditate • Build consensus and empathise with others 	<ul style="list-style-type: none"> • Use co-operative learning • Assign group projects • Give students opportunities for peer teaching • Brainstorm solutions to problems • Create situations in which students are given feedback from others
Intrapersonal	<ul style="list-style-type: none"> • Like to work alone • Motivate oneself • Intuitive • Sensitive to one's own feelings and moods • Know own strengths and weaknesses • Use self-knowledge to guide decision making and set goals • Control own feelings and moods • Have a sense of independence • Are strong willed and have strong personal opinions • Pursue personal interests and set individual agendas • Self confident • Reflective • Learn through observing • Use metacognitive skills 	<ul style="list-style-type: none"> • Allow students to work at own pace • Assign individual, self-directed projects • Help students set goals • Provide opportunities for students to get feedback from each other • Involve the students in journal writing and other forms of reflection
Bodily-Kinaesthetic	<ul style="list-style-type: none"> • Use ones' body to communicate and solve problems • Remember through bodily sensations • Learn best through physical activities • Find it difficult to sit still for long • Have gut feelings about things • Is adept with objects and activities involving fine or gross motor skills • Play sports and be physically active • Use body language and gesture • Do crafts and mechanical projects • Dance, act or mime • Mimic easily 	<ul style="list-style-type: none"> • Provide tactile and movement activities • Offer role playing and acting opportunities • Involve students in physical activity • Allow students to move while working • Use sewing, model making or other activities using fine motor skills

<p>Linguistic</p>	<ul style="list-style-type: none"> • Think in words • Use language and words in many different forms to express complex meanings • Tell jokes, riddles or puns • Like to read, write or tell stories • Use an expanded vocabulary • Play word games • Have a good memory for names, places, dates, poetry, lyrics, trivia • Create poems and stories using the sounds and imagery of words • Find spelling easy 	<ul style="list-style-type: none"> • Create reading and writing projects • Help students prepare speeches • Interest the students in debates • Make word games, crossword puzzles and word searches • Encourage the use of puns, palindromes and outrageous words
<p>Logical - Mathematical</p>	<ul style="list-style-type: none"> • Approach problems logically • Understand number • See patterns easily • Like abstract ideas • Recognise and solve problems using reasoning skills • Work out sums easily in their head • Work with numbers, figure things out and analyse situations • Know how things work • Ask big questions • Exhibit precision in problem solving • Work in situations in which there are clear black and white solutions • Like computers • Devise experiments to test things out • Think in categories and see relationship between ideas 	<ul style="list-style-type: none"> • Construct Venn diagrams • Use games of strategy • Have students demonstrate understanding using concrete objects • Record information on graphs • Establish time lines and draw maps
<p>Musical</p>	<ul style="list-style-type: none"> • Sensitive to non-verbal sound in the environment, including melody and tone • Aware of patterns in rhythm, pitch and timbre • Listen to and play music • Match feelings to music and rhythms • Sing, hum, whistle and move to music • Remember and work with different musical forms • Create and replicate tunes • Like to listen to music when working 	<ul style="list-style-type: none"> • Re-write song lyrics to teach a concept • Encourage students to add music to plays • Create musical mnemonics • Teach history through music of the period • Have students learn music and folk dancing from other countries

Sternberg's triarchic model of intelligence

Sternberg (1997) is another critic of the single-capacity approach to defining giftedness and talent. Instead he contends that giftedness comprises three core qualities: analytic skills or *componential intelligence*. This is the ability to think abstractly and process information efficiently and effectively.

Synthetic skills or *experiential intelligence*: This is the ability to combine pieces of information in new ways, to be creative or to see links and patterns in seemingly unrelated information.

Contextual intelligence or the application of one's thinking skills to everyday practical problems. This ability is often considered in lay terms to be "street smart". It requires adaptability, and the skill of constantly reassessing ones strengths and weaknesses and building plans accordingly.

According to Sternberg, an important part of giftedness lies in the ability to make use of each of these three thinking styles and to recognise when each is most appropriate. Sternberg argues that modern IQ tests tap analytic intelligence only, and therefore there is the potential that very creative and adaptive thinkers are not identified as gifted.

While Gardner's Multiple Intelligences model concentrates on the different content areas where one can excel, Sternberg's triarchic model is more concerned with the processes that we engage in order to produce an intelligent response.

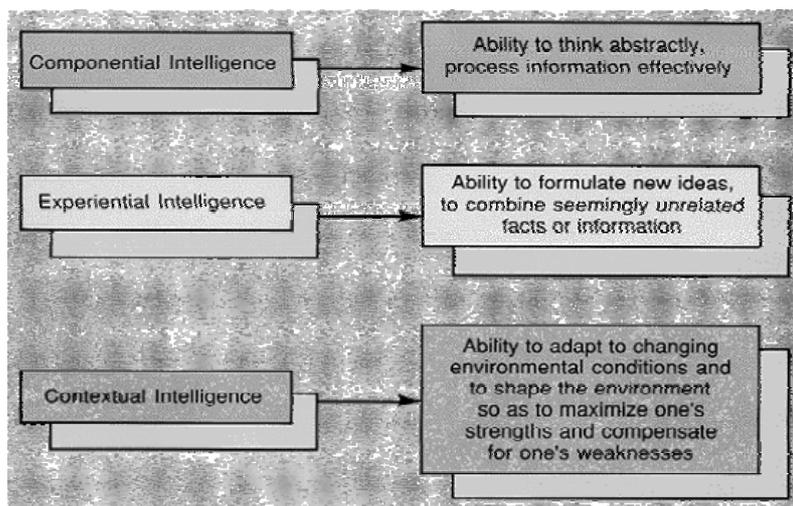


Fig. 2 Sternberg's Triarchic Theory of Intelligence

Provision for Gifted/Talented Children within the regular classroom

Curriculum Differentiation

Curriculum differentiation refers to the provision of different learning activities for same-aged children who have different learning needs and preferences (Kulik & Kulik, 1997). In dealing with gifted and talented students it is especially important to consider the extras that can be provided above and beyond what others in the class are studying. However, Sawyer (1988) points out that any extension activities must have be academically rigorous and that entertainment should not be mistaken for educational value.

Enrichment

It is important that teachers are willing to be flexible within the whole curriculum when providing for gifted and talented pupils. Enrichment implies horizontal flexibility whilst extension implies vertical flexibility.

Enrichment is any type of learning, or activity, which is outside the core of learning which most pupils undertake. It is additional to the established curriculum. It is a supplement to, not a replacement for, the core of work being undertaken. In a well planned and interesting classroom it may already be available. It can broaden pupils' horizons and help them to look at different aspects of their work. It may well be interest led. Enrichment could involve groups of pupils working together; it may mean working in a different way from usual. It should enrich the core and widen it out.

Extension

Extension is allowing, or enabling students to move through the curriculum at a faster rate than normal. It can mean 'acceleration', or skipping sections to move further ahead. It can also mean 'compacting' the curriculum so that it is denser and more

complex. It should give opportunities to work in depth, and to work at the student's individual rate.

This vertical and horizontal stretching allows teachers to use work from other key stages of the national curriculum and from other subject areas, other than those generally being worked on. Flexibility in the national curriculum is recommended for gifted and talented pupils. They may well be working with pupils from higher age groups in certain subject areas.

Extension and enrichment may take place within a mixed-ability class, where gifted children are given further or more challenging activities to tackle, or alternatively there may be organised "pull-out" classes, outside of the regular class timetable, where extended work is tackled at a faster pace. When extension and enrichment activities are provided in the classroom, they should be sufficiently different from the material being studied by others in the class. Assignments that are intended to be extended or enriched work should not simply be "more work" that is doled out to keep the gifted/talented student occupied while others finish the original assignment, nor should it be "harder work" that they are expected to finish. Both of these measures may be perceived as punishment ("Why should I work hard in class as it only results in more work being handed out?") and may lead them to reduce their effort and become unmotivated.

Where extension and enrichment are operated as "pull-out" programmes and able individuals are grouped to work together outside of the classroom it is important that the class teacher can integrate work that the group have covered and build upon it. Further, students who take part in such pull-out programmes should not be punished by being expected to also complete the work that they have missed in class on extension activities, as again this can lead to a reduction in motivation.

Acceleration

Acceleration of children into classes beyond their age-group is a very emotive subject among both educators and parents. At present the leading academics on gifted education in the US and Australia endorse the use of acceleration in appropriate circumstances when provision of the child's needs can be adequately met. At present, two large centres for gifted and talented education, The Belin-Blank Center for Gifted

Education and Talent Development in Iowa, USA; and the Gifted Education Research Resource and Information Centre (GERRIC) in New South Wales, Australia are endorsing the findings of a series of studies on acceleration entitled “A Nation Deceived: How Schools hold back America’s brightest students” that strongly advocated the use of acceleration.

The aims of acceleration are

- To avoid boredom, and resulting behavioural difficulties
- To promote the child’s development of good study skills such as higher-order thinking skills
- To allow children to mix more successfully with others, by placing them with children who differ in age, but share more similar interests
- To capitalise on young children’s interests and abilities.

Research consistently reports that acceleration meets all of these academic, social and emotional aims. Accelerants mostly adjust well socially and emotionally and they report preferring to be with the older children compared to their age peers. A number of studies have found that children who are accelerated display no difference in adjustment compared with equally gifted children who were not accelerated. A study carried out at CTY in the USA found that over 95% of students who had been accelerated found that the experience was positive, and that it increased their interest, challenge and movement through the educational system. Some negative aspects such as feelings of isolation from age peers were reported but very infrequently, and it seems that the opportunity to be accelerated far outweighed any social disadvantages (Ablard, Mills & Duval, 1994) While it appears in this case that no benefit has been found, it is also possible that children who elect to be accelerated might be damaged by a refusal to move them on, becoming unmotivated and bored, leading to a decrease in achievement. Swiatek and Benbow (1993) found that an early exit from school for gifted/talented learners did not hamper later achievement, and they continued to work well in university.

On the other hand a few studies have highlighted some negative effects of acceleration. One specific study indicated that 20% of early entrants to school were assessed by teachers as performing poorly (McCluskey, 1996). However, whether

this was due entirely to the early entrance is not clear – it is possible that these children may have performed poorly in any case. Also Porter (1999) points out that these findings could also have been due to raised expectations on the part of the teachers, who perhaps expected to see “outstanding performance” that would warrant the early entry, or the fact that acceleration is used so rarely that the children felt abnormal.

There seems to be agreement however, that the best way to manage acceleration is in terms of early school entry rather than later grade-skipping which can cause dislocation from friends and peer group. The issue must also be handled sensitively by the school and the appropriate support for the child provided.

Key provisions include:

- A flexible classroom structure and a teacher who is sympathetic to the idea of early entry
- Support from the school in filling in any gaps in the child’s skills that may have occurred due to early entry
- The child will need to have sufficient fine motor control to cope with academic skills such as handwriting, and a readiness to begin reading
- The child must be comfortable with the idea of mixing with older children, and with the idea of being one of the youngest in the class
- Support for parents, as their comfort with the notion of acceleration is likely to have an effect on their children’s coping strategies.
- Children need to be socially and emotionally mature enough to cope with school. However, among all school entrants - not just early ones – there is a wide range in levels of maturity (Braggett, 1992) and younger children tend to “grow into” the social-emotional levels of those around them (Vialle, 1998). Lack of maturity therefore, may not be an impediment to early entry.
- Children need to have the physical stamina to be able to cope with a long school day

Given the uneven development of gifted children, and the individual differences present, all gifted/talented children may not be mature in all of these domains, and it is strongly recommended that there should be extended consultation between parents

and the school as well as any early childhood staff (e.g. crèche workers etc) in order to decide on the best course of action for each particular child. Further, the decision to enrol a child at school early or to accelerate a child at any stage of their schooling, should be looked upon as a trial, and closely monitored, not as a finite solution.

Competitions

While competitions may not be marketed exclusively as vehicles for gifted/talented students, quite often they provide an excellent avenue for such pupils to work and to shine. At first glance they may appear to be passive entities, making use of talent that is already developed rather than encouraging new growth. However, they can activate and strengthen feeling for a particular subject, provide enrichment in researching a topic beyond its coverage within the curriculum, and development skills in problem-solving, perseverance and experimentation (Freeman, 2000). If the competitors can choose the basis or topic of their entry, it can also provide a sense of autonomy that is not always readily accessible in curriculum-based schoolwork. An example of one such competition on this island that meets the above criteria is the annual BT Young Scientist's Exhibition. Students are encouraged to develop a research hypothesis on a science-related topic within the realms of biological, chemical, physical or social sciences and to carry out a piece of original research to test their hypotheses. Their work is written up as a scientific report and presented on a display stand at a four-day exhibition. During the exhibition, they are interviewed and judged by academics and experts in their chosen project areas. Students get the opportunity to meet and interact with other exhibitors from all over the country and also to show the fruits of their hard work to family, teachers and the general public.

There is some suggestion that competitions tend to appeal more to boys than to girls and to those who are naturally more competitive, confident, and ambitious by nature. That said, they also offer potential for others to develop confidence and ambition if they are given the appropriate support and encouragement.

Mentoring

Gifted, talented and more able pupils can appear way ahead of their chronological age in their ability area. This may lead to unfair expectations of their social and personal

development. Mentoring is a strategy that can work effectively with any age pupil and can offer intellectual and emotional benefits. On a basic level, it could be just finding someone to spend time with the child, talk at length with them and obtain a clearer view of their ideas, abilities, views and feelings. The mentor could be another adult, a teacher or even an older child. On a more sophisticated level, the mentor may have an interest, or even be an expert in the pupil's area of ability. If relationships with peers are difficult or stressful, the existence of a mentor can be very beneficial for defusing fraught situations.

Acceleration, enrichment and extension can all be used to good effect with gifted/talented learners in normal classrooms, without the need to create pull-out programmes. The following suggestions and activities give examples of how different learning styles can be employed that give the student the chance to use broad range of talents and to develop new ones.

As gifted/talented children may be advanced thinkers and enjoy the challenge of new tasks, one of the key themes in these approaches should be independent learning. Try to avoid "telling" the student new information; instead encourage them to seek it for themselves. Try to move towards more investigative, resource-based and active forms of learning.

Where possible, try to allow them to choose the method or activity that they would like to do in order to learn, as this promotes a sense of autonomy and "ownership" of learning. However, do encourage them to try new activities in order to broaden the learning experience.

Ten approaches to differentiation

1. Task *Children, either as individuals or groups, are given different tasks based on prior attainment.* Able children can be challenged by setting tasks that encourage them to think at higher levels through the inclusion of problem-solving, investigation and the use of higher-order thinking skills.

2. Outcome *Children work on the same task following a common stimulus, but the teacher has different expectations for each child based on previous experience.*

Learning how to explain something to someone else so that they can understand a concept or process can be very challenging. An able child could be asked to explain or teach something to someone else, or write to someone else, or write or design something for children of a different age group.

3. Pace *Children are given a common task but the time allocated for completion is based on prior skills.* An able child might be expected to spend less time completing the core task than others and may then undertake some more challenging extension work (i.e. opportunities for extending the breadth and depth of learning related to the core curriculum objective rather than moving on to the next learning objective). Many able children miss the chance to do extension tasks where they are available because they take too long completing the core task, through lack of interest and motivation. Where appropriate, some children should be allowed to skip activities (known as ‘compacting’) and move quickly to extension work.

4. Support *Children work on a common task, but some receive more or less support than others.* An able child may need help in weak areas of their own such as recording, use of ICT, developing study skills or co-operative learning.

5. Resources Children are set a common task, but are given different resources, which require more advanced reading or research skills. Able children can be encouraged to use a range of resources or alternative methods for presenting their work.

6. Grouping *Children have a common task to complete but are grouped in a way that ensures success for all.* Able children can sometimes be grouped with peers of similar ability and expected to perform at a higher level.

7. Information *Children are set a common task but are given different information, or different amounts of information, which can support or stretch their thinking.*

8. Role *Children undertake a common task but individuals are given different roles.* An able child could be given the role of the main researcher, or organiser of the group's information and resources.

9. Homework *Children are set different homework whilst some pupils may need time to complete work started in class.* More able children might be given more complex aspects of the topic to research in more depth, or to carry out a different task.

10. Dialogue/Using Questions *The teacher adapts the questions they pose and the responses they make to different children.* Differentiation by dialogue has recently been stressed as a key area to consider in meeting the needs of highly able children. The use of questions is summarised on the following page.

- Adapted from Eyre (1997) Teaching Able Children in the Ordinary School.

Ten ways to encourage challenge in children's learning

Work can be made more demanding, and children's thinking extended through the use of a wide range of teaching strategies. Deborah Eyre (1997) identified the following:

1. Plan/do/review Able children can be expected to plan more systematically and with greater rigour, and to be more critical and analytical in the reviewing stage.

2. Working from more difficult texts Useful in that children can work on the same content but research information from more challenging texts and resources.

3. Using a wider range of information/resources As above, but children are expected to bring together information from many more sources.

4. Recording in alternative or more imaginative ways Children can be encouraged to move away from recording in a written format and explore more imaginative ways of presenting information.

5. Role play Encouraging children to interpret and empathise with different people and situations, to bring greater life and meaning to their learning.

6. Problem solving and enquiry tasks Children can be encouraged to explore alternatives to solving problems and research real-life problems. The Cognitive Acceleration through Science Education (CASE) programme has been used as a highly effective tool in this area and has recently been extended into the areas of mathematics, technology and performing arts.

7. Choice in how to handle content Choice usually results in greater motivation. Able children can often think of more unusual and challenging lines of enquiry.

8. Decision making Children can be given the outline of a task and then given the choice of how to develop and record their ideas. See TIC TAC TOE MENU on page **X**

9. No correct answer This is often linked to work on open-ended tasks. Children are asked to research widely and then use their critical skills to consider the pros and cons of arguments.

10. Using one text or artefact Limiting the stimulus can help children to look more carefully, think more deeply and more imaginatively.

- Adapted from Eyre (1997) *Teaching Able Children in the Ordinary Schools*

Bloom's Taxonomy of Educational Objectives (Bloom, 1956)

Bloom's Taxonomy, or more formally the *Taxonomy of Educational Objectives: Cognitive Domain* has had an international impact on education by drawing attention to the difference between "low-level" and "high level" academic thinking. "Low level" thinking includes acquisition of knowledge and comprehension, whereas the higher levels stress analysis, synthesis and evaluation. Each of the categories is outlined further below.

1. Knowledge

Knowledge is simply the ability to recall information, recite or list facts. Students can say they know something if they can recite it or write it down or recall its location.

2. Comprehension

Comprehension means that a student can describe what they know by describing it in their own words. They are able to restate, give examples, summarise or outline basic key points.

3. Application

Application means that the information learned can be applied in different contexts. Students are able to transfer knowledge learned in one situation to another.

4. Analysis

Analysis is when a student can compare and contrast; recognise inferences and opinions or motives. At this level a student can characterise the attributes of something, thus allowing the constituent parts to be studied both separately and in relation to each other.

5. Evaluation

Evaluation allows a student to make judgements about what he/she has analysed. Judgements are made against agreed criteria and this guides decision-making and the critique or rationale of an argument.

6. *Synthesis*

Synthesis is the construction of new wholes based on an informed and detailed understanding of constituent parts. Formulating a new theory, an original argument, a summary rationale, a forecast or prediction all require complex and sophisticated thinking.

A guide to structuring activities and questions follows.

A teacher's guide to structuring activities and asking questions using Bloom's Taxonomy

Knowledge

Activities

Questions for learning

<ul style="list-style-type: none"> • Tell • Recite • List • Memorise • Remember • Find • Summarise in your own words • Locate • Name 	<ul style="list-style-type: none"> • What three things are the most important? • Describe them to someone else • List the key characters in the book • Write your list, turn it over, repeat it • Write your list, turn it over, repeat it, try again • Look for and list the ingredients needed • List five key things and explain each • Where in the book would you find...? • Name as many characters as you can, go for five
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Comprehension

Activities**Questions for learning**

<ul style="list-style-type: none"> • Restate • Explain • Give examples of • Summarise • Translate • Edit • Draw 	<ul style="list-style-type: none"> • What do you think is happening here? • What is significant? • Can you think of any other similarities? • What do you consider essential? • What might this mean? • Using the cut and paste facility, can you...? • What three things are the most important?
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Application***Activities******Questions for learning***

<ul style="list-style-type: none"> • Demonstrate • Based on what you know • Model 	<ul style="list-style-type: none"> • Plan and deliver a presentation to... • What is most important for your chosen audience? • How can you best demonstrate your understanding?
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Analysis

Activities

Questions for learning

<ul style="list-style-type: none">• Investigate• Classify• Categorise• Compare and contrast• Relevant and irrelevant• Facts and opinions• Fallacies	<ul style="list-style-type: none">• What information is needed? Where will you get it?• Organise the data using flow chart/concept map• List the data in categories for a given audience• List arguments for and against, compare them• Choose a target audience: list R&Is for them• Separate into fact and opinion using a Venn diagram• What assumptions are being made? Why?
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Leading on from Bloom's Taxonomy, give students space and time to think about the questions that you pose.....

Pause for thought	After asking a question allow pupils to collect their thoughts. After a response pause yourself to show you are thinking.
Think-pair-share	Allow individual thinking time and ask pupils to share his or her ideas with someone else
Probe	Ask follow ups to probe their understanding – Why? Do you agree? Tell me more? Give an example? Can you elaborate? How did you arrive at that answer?
Withhold judgement	Respond in non judgemental ways “That’s interesting” “Who agrees?”
Play devil’s advocate	Challenge the answer “Explain why?” “What are your reasons?”
Encourage questioning	Invite pupils to write down their questions
Think about thinking	“What thinking have you been doing?” “What have you learnt?” “What have you found out?”

Ideas and Suggestions for Challenging Extension and Enrichment activities

1. **Resource-based learning:** you provide some resources and directions to follow so that pupils can find their own sources of information. You will need clear directions and parameters as to the areas in which they are researching. Allow for pupils to follow interesting tangents of their own.
2. **Supported self study:** this again involves pupils finding out for themselves, but usually supported by a study guide written by the teacher, which frames their investigation by areas of study, methods of presentation, time limits and so on. Pupils can work individually, in pairs, or in groups. Clear targets are set. End of unit assessment methods and areas are also known.
3. **Role-play:** this is not just ‘play-acting’ and should be introduced with care. It should involve careful research of the area to be presented, and of the parts the different ‘role’ or personnel play within it. A good role-play presentation would show a clear understanding of the key issues being researched, so these must be selected carefully either by the teacher, or in negotiation with the pupils involved. Participants should attempt to pull out the essence of the subject matter for presentation in this matter.
4. **Debating:** a formal debate situation can be set up so that pupils are deliberately researching one side of an argument for presentation to the group with the intent of influencing ‘voters’. Again it makes for clarification of the key points around an issue, and also ensures careful listening, noting points to use later, making informed judgements, ensuring the facts are correct, waiting to make a point. Debaters will have to understand the whole picture to make an effective argument.
5. **Oral presentations:** once more this requires a clear understanding of the area for presentation, and an ability to find and present the salient points. It also requires considered use of language forms, and vocabulary, and recognition of ‘audience’.

6. **Poster making:** this is often seen as a method for the less able to present the point of view, and indeed can be used as such, but it can also be seen again as finding the most powerful arguments, and the most important points around an issue, and being aware of audience, so that the poster can be effective.
7. **Video making:** this task requires a number of skills and can be a challenge to the more able pupils to make an effective video concerning a topic they are working on. It will probably be a useful group task, with pupils designated to particular roles in the production team.
8. **Interviews:** this is an interesting process for pupils to decide which questions they wish to ask about a particular issue (a task in itself), and then to interview members of the public for facts and opinions. If a large number of interviews are done, then mathematical work can be done with the statistics generated, and it can be seen how statistics can be manipulated to prove a point.
9. **Creative writing:** based upon the topic being addressed. Using pupils' imagination to create poems, plays, stories which illustrate the key points being dealt with. Again good background research and understanding will be needed to support such work.
10. **Art work and cartoons:** another form of self-expression concerning the work being addressed in other subject areas. This will articulate what to the student are the most important points, and the sequencing component of cartoon work is an interesting element.
11. **Book, film, newspaper reviews:** a useful way of gathering opinions and angles on the topic being addressed is to review books written about it, films produced about it, and newspaper articles written at the time. Poetry and stories written on the subject can be analysed for deeper content. Analysis of content of books, newspapers etc requires skills in selecting relevant information and opinions.

12. **Writing newspaper articles:** an interesting way of presenting the facts, whilst putting an individual opinion on them. Requires pupils to know the facts, and know what they think about them, and then to be able to present these things to someone else using ICT packages such as 'Front Page', 'PowerPoint', 'Publisher', 'Word'.

13. **Using statistics:** this can be an exercise in collecting and developing their own statistics, or analysing statistics already available to assess what they show; for example, perhaps about public understanding of a particular disability, or experience of sexual harassment; or opinions on women's role in society.

14. **Producing flow diagrams:** to represent a series of events (could be used in science, geography, history, story making and so on). This ensures a logical view of the 'flow' of events and clarity regarding key points which occur.

15. **Carrying out surveys: including questionnaires:** Surveys of local issues will be of interest and will involve detailed observation, counting, interviewing, producing graphs and statistics, and interpreting the information gathered.

16. **Organising and running events:** such as exhibitions, mini-enterprise and so on, any of which again involve detailed fact finding, assessment of key issues, good management of self and others, and of resources.

17. **Fieldwork:** doing real fieldwork out in society. An example might be:

How are disabled people catered for in a particular firm?

Who decides this?

Who's in authority?

How much say do the disabled themselves have?

Role of Social Services

Role of NHS/Health Boards

Role of pressure groups

Role of charities.

What are the ideas and opinions of these groups? Do you agree?

The same could be done for women's groups, political movements and ethical and racial issues. Gather statistics from local firms. Find out about rights of women, working mothers, pregnant women and so on. Do research, interviews with the various political parties, local politicians, MEPs and so on. Conduct surveys in school.

18. **Problem solving:** using facts and opinions gathered identify a 'need' or problem, analyse it, plan solutions, try them out if possible, evaluate.

19. **Pupil self-assessment:** build in opportunities and methods for pupils to be involved in their own assessment. This can range from simple techniques such as self-marking of right and wrong answers, through groups analysing other groups' posters, role-plays and so on, to negotiating the value of a piece of work with the teacher. This, obviously, needs to be built into the setting of tasks with the pupils at the start of the work.

20. **Experiential learning:** pupils put themselves in the position of the groups they are investigating, for example experiencing being treated as disabled.

21. **Using ICT:** gifted and talented pupils often work more independently than others when making use of computers to research in greater depth. They should be encouraged to do this through opportunities both in school and at home where they may have better facilities to enhance the quality of their work.

Using Questions to promote effective learning and critical thinking

Questions that seek clarification

Can you explain that...?	Explaining
What do you mean by...?	Defining
Can you give me an example of...?	Giving examples
How does that help...?	Supporting
Does anyone have a question...?	Enquiring

Questions that probe reasons and evidence

Why do you think that...?	Forming argument
How do we know that...?	Assumptions
What are your reasons...?	Reasons
Do you have evidence...?	Evidence
Can you give me an example/counter-example...?	Counter examples

Questions that explore alternative views

Can you put it another way...?	Re-stating a view
Is there another point of view...?	Speculation
What if someone were to suggest that...?	Alternative views
What would someone who disagreed with you say...?	Counter argument
What is the difference between those views/ideas...?	Distinctions

Questions that test implications and consequences

What follows from what you say...?	Implications
Does that fit with what we said earlier...?	Consistency
What would be the consequences of that...?	Consequences

Is there a general rule for that...?

Generalising rules

How could you test to see if it were true...?

Testing the truth

Questions about the question/discussion

Do you have a question about that...?

Questioning

What kind of question is it...?

Analysing

How does what was said help us...?

Connecting

Where have we got to...?

Summarising

Who can summarise so far...?

Summarising

Are we any closer to answering the question...?

Drawing conclusions

- Adapted from Teaching Thinking – Philosophical Enquiry in the classroom by Fisher (1998)

The Tic-Tac-Toe task choice menu

Pupils often feel more motivated if they are given a choice over their work. One strategy found to be useful, particularly in primary classrooms, is the TIC TAC TOE menu approach developed by Susan Winebrenner in the USA and shown below. Pupils are asked to choose three activities and they colour in each square as the activity is completed.

<p style="text-align: center;">Make something</p> <p>Model, design, collection of artefacts, artwork of an aspect of your study.</p>	<p style="text-align: center;">Teach or demonstrate</p> <p>Something you have learnt to someone else or to the class.</p>	<p style="text-align: center;">Compare</p> <p>Select and then compare different elements of your study. Find similarities and differences.</p>
<p style="text-align: center;">Creative recording</p> <p>Photos, video, collage of your work for a presentation.</p>	<p style="text-align: center;">Graph</p> <p>Visual record of some aspects of your work.</p>	<p style="text-align: center;">Demonstrate</p> <p>Give a demonstration to show what you have learnt.</p>
<p style="text-align: center;">Survey</p> <p>Gather people's opinions, feelings about some fact, idea or aspect of your study.</p>	<p style="text-align: center;">Dramatise</p> <p>Organise a role-play on something you have learnt.</p>	<p style="text-align: center;">Forecast</p> <p>Look to the future, how will your topic change in the next 10 years.</p>

From Able Pupils: Providing for Able Pupils and those with Exceptional Talent, Nottinghamshire County Council 2000

This strategy can readily be adapted to the secondary school situation for the time when pupils are planning a topic or as a way of offering alternative homework. It is an enrichment/ extension approach.

Providing challenge for gifted/talented students

What is challenge?

There is no catch-all definition for what constitutes appropriate challenge in school; however schools have a moral obligation to ensure that a pupil is not wasting her time on activities that are ill-suited to her level of ability. All students have the right to expect that they will receive an education appropriate to their level of ability. In the case of gifted and talented children, this may mean curricular enrichment, extended lesson plans, or acceleration through course work. It is neither feasible nor practical to suggest that the need for challenge must be met in every single aspect of the curriculum to the detriment of other students, but pupils should not be allowed to grow bored and frustrated.

What kind of challenge is appropriate?

Challenge and motivation are practically inseparable - in order to respond to challenge the student must have the interest and motivation to engage with it. Extrinsic motivation (from outside sources) such as the promise of reward or threats is rarely enough to sustain interest and application to tasks over time. Instead the pupil must have internal motivation and undertake the task through interest. As far as possible an able child should be exposed to a wide range of activities in order to find those that excite them most, and will continue to hold their interest if they are to work alone beyond the rest of the class.

Once the type of activity has been decided upon, the level of difficulty should be pitched in order to stave off boredom but avoid extreme frustration. If tasks are too easy the pupil may become bored easily, leading to disengagement or disruptive behaviour. Alternatively, if they can constantly achieve perfect scores on their extension activities it may reinforce their belief that they must always produce perfect work – a belief that can be damaging as they progress through school and work becomes tougher. Challenge must include a risk of failure, and it is preferable that students should learn to cope with failure in support environments to avoid the distress brought about by failure late in their academic careers.

On the other hand it can be very demoralising if tasks are too difficult and the pupil can see no way to attempt them, especially if they are used to handling their regular schoolwork with ease. Winstanley (2004) suggests that children will intuitively struggle to attain something just outside of their grasp and to improve, giving the example of children in a playground who never injure themselves attempting outrageous stunts – instead they grow bolder as they slowly build confidence by trying slightly more daring moves when they feel able. Extension activities should aim to provide challenge that is just outside the grasp of the student in order to stimulate them, without seriously denting their morale.

Social and Emotional issues in the development of gifted children

At times there can be the perception that children who have been identified as gifted or talented are blessed with special qualities and advantages that will help them to succeed and make life easier for them. However, there is growing recognition that being gifted can bring with it challenges for social and emotional development, and those who are gifted are just as much in need of support as their peers in dealing with emotions, self-perception, behaviour and in looking to the future. That said, the idea of the gifted individual as a “mad genius” still prevalent in lay understanding is both unfair and inaccurate, and can lead to reluctance from parents to classify their children as gifted or talented. There is ongoing debate over whether gifted children have more or fewer emotional problems than their peers with some researchers claiming that they are better adjusted and others portraying them as emotionally fragile. As outlined in the first sections of this document, gifted and talented children are not a homogeneous, easily-classifiable group. Therefore, we cannot infer that all gifted children will develop emotionally in the same way. While the following paragraphs outline the need for consideration of the emotional well-being of gifted and talented children, the behaviours discussed should not be considered *necessary* for giftedness. Freeman (1991) found that parents and teachers stereotypes of gifted children as social misfits caused adults to identify children who were experiencing social and emotional difficulties as gifted, while overlooking gifted and talented children who were well-adjusted. This is especially true for gifted girls, who are often less vocal than boys and draw less attention to themselves.

According to Davis and Rimm (1995) the high intelligence, ability for self-analysis, perfectionism and creativity possessed by many highly gifted youth may lead them to evaluate themselves critically. The superior thinking strategies of gifted/talented children, including the ability to hypothesise and to consider multiple scenarios may mean that they are more likely to reflect on themselves and to understand and articulate the many facets of their behaviour and motives. Piechowski (1991) suggests that highly gifted and creative students will feel different; they will

experience self-judgement, self-doubt, self-criticism and sometimes even self-loathing. They may also be more concerned than their peers with their purpose in life and in the world, and may display signs of extreme sensitivity and emotional intensity.

A number of studies have collected a checklist of the most frequently occurring socio-emotional problems:

- Difficulty with social relationships; isolation from peers
- Conformity pressures; hiding or down-playing talents in order to gain acceptance from peer group
- Anxiety; depression
- Difficulty in accepting criticism
- Nonconformity and resistance to authority
- Excessive competitiveness
- Difficulty in understanding the nature and significance of intellectual differences
- Intellectual frustration in day-to-day and life situations
- Confusion and stress in considering a future vocation or career, especially where the student has a diversity of interests and talents
- Difficulty in developing a satisfying philosophy of life.

Delisle (1992); Landrum (1987); Silverman (1983)

Self-concept, self-esteem, social adjustment and identity

Problems and challenges associated with being gifted may begin early. Silverman (1991) reports that from birth children who are gifted are often active babies who require less sleep, respond intensely to their environment and may physically exhaust parents with their demands for stimulation.

Once schooling begins, gifted children who find themselves grouped with same-age peers may find themselves in situations that meet neither their intellectual nor their social needs. This can lead to feelings of frustration and isolation and can lead to the

development of poor social skills if they do not have opportunity to mix with others of similar interests and cognitive ability.

Academic self-esteem is often high in gifted (especially young) children; however social self-concepts are often poor. Some studies have shown that while children are pleased with the effects that being gifted had on their schoolwork, they disliked the connotations that it carried for them in their social lives, especially as they felt that non-gifted peers and teachers held negative views of them. Relating to this is the concept of *labelling*, and the discomfort it can pose to children who have been identified as gifted or talented in some domain. While the terms gifted/talented are often perceived by others as positive, they can be a source of discomfort for older students whose main desire is to “fit in” with their peers and who thus dislike being marked as different. Further, some adults find the terms distasteful as they go against the idea that “all people are created equal”. They may even find the term threatening when it is applied to someone younger than them.

Renzulli and Reis (1991) have suggested that one way to avoid the problems of labelling is to refer to the students’ *behaviour* as gifted, rather than applying the term to the student herself. Thus, giftedness is not a quality that is bestowed on the individual but a behaviour (or set of behaviours) that can be displayed and developed.

Subtypes of giftedness from a socio-emotional viewpoint

Betts and Neihart (1986) proposed six categories of gifted students that are based on both cognitive and personality/motivational dimensions of behaviour. Their profiles include what each type needs for better functioning.

1. The *successful* gifted are conforming, achieving and perfectionistic. While admired and liked by peers and adults, they need to develop risk-taking, assertiveness skills and intrinsic motivation.
2. The *challenging* gifted are creative, but their frustration, boredom and rebellion can often lead to power struggles with peers and those in authority. They need greater self-awareness, self-control and flexibility as well as support for their creativeness.
3. The *underground* gifted are insecure, shy and quiet, and have poor self-concepts. They may not be identified as gifted, or viewed as conformers.

They need help to develop self-awareness and self-acceptance and a chance to interact with gifted peers.

4. Gifted *dropouts* show resentment and anger as they feel that the school system has not provided for their needs and they have not developed to their potential as a result. As they do not fit with the stereotypical image of one who is talented or gifted. They are often viewed by others as average, or even below average due to their lack of application to study and their rebellion.
5. The double-labelled (now referred to as dual-exceptional) gifted may have a physical or intellectual disability, or severe emotional disturbance. Adults or peers may have difficulty recognising their talents, focussing instead on the areas where they are less able. Such students are prone to frustration and low self-esteem, and need to be encouraged to emphasise their strengths and learn coping skills. They also need the supportive adults who will remind them of their giftedness and reinforce it.
6. The *autonomous* gifted have a good sense of self and accept both their strengths and weaknesses. They are enthusiastic, well-motivated and confident. Adults and peers admire them and consider them to be responsible. They need support, advocacy and the opportunity to develop talents.

While these categories are helpful, they should be used with caution. They are not mutually exclusive and some students might show characteristics from more than one. Also, the way in which a student is categorised should not be static. For example, depending on the type of support given to a challenging gifted student, they might develop the desired autonomy of the sixth category, or drop out of the school system as in category three.

Emotional Giftedness: Overexcitability and Extreme sensitivity.

Many highly intellectual or creatively talented students might experience emotion much more intensely than their peers, and display behaviours that are quite alien to their classmates, teachers and parents. Some of this emotionality can stem from their advanced capacity to wonder and hypothesise about scenarios. The ability to think

about certain situations and follow them to conclusion can lead such children to be concerned about issues of social and moral justice, or environmental problems such as global warming. They may also have greater capacities for sympathy and empathy than other children their age. Although the word “overexcitability” has connotations that imply distress or even psychosis, in the context of theories of emotional development it was originally intended to denote abundant mental energy which provides “positive potential for further growth” (Tucker & Hafenstein, 1997).

Piechowski (1991) described the effects of this heightened emotional sensitivity over five areas:

1. In the *psychomotor* area, children show a great drive and huge amounts of energy and enthusiasm which can lead to restlessness. They may feel pressure to be constantly moving, and nervous behaviours such as rapid speech and nail-biting can develop. They may be workaholics, like fast sports, and could possibly get involved in delinquent behaviour.
2. In the *intellectual* area, children are very curious and have a capacity for sustained concentration, formulating probing questions and metathinking (thinking about thinking). These students enjoy questioning, discovery and love ideas and theoretical analysis.
3. The *imaginational* area includes activities typical of highly creative people. These individuals often engage in day-dreaming, fantasy, magical and metaphorical thought and poetic or dramatic interpretations of events. There may be a mixing of truth and fiction and a strong ability for visual recall.
4. In the *sensual* area there is constant stimulation of sensual experiences. These students take pleasure in seeing, smelling, touching and tasting and may often describe and interact with the world on these terms.
5. The *emotional* area includes intensely positive and negative feelings, with soaring highs and dark lows. The highs can be waves of joy and feelings of fantastic energy. Coupled with a strong sense of right and wrong these individuals are very sensitive to issues of justice and are keen empathisers. Lows can include extreme self-doubt, feelings of guilt, anxiety and inferiority, concern with death and depression.

Family Relationships for gifted and talented children

Educators in the field generally agree that positive family relationships play a large part in shaping the development of the gifted child, and that the support of parents is crucial to the realisation of full-potential. However, parenting a gifted or talented child may be stressful, and can strain both the parent-child relationship, and sibling bonds. While it is not universally true that problems will arise, raising a gifted/talented child may present parents with unique challenges or unfamiliar situations that they did not have to tackle when rearing other children in the family. Bridges (1973) noted that a lot of parents fear that they will have neither the emotional or intellectual coping skills to raise and support a “different” child. This feeling of inadequacy can affect the interactions within the family. Further, parents worry that their gifted child will grow up to be “socially maladjusted”. Laycock (1952) and Bridges (1973) report two common parental reactions to a diagnosis of giftedness or talent. On one hand the parent may feel threatened by the uniqueness and creativity of their child and find it easier to cope if they play down or completely ignore the ways in which they are exceptional. Alternatively, parents may be very over-excited to find out that their child is talented, and can try to impose unrealistic expectations on the child. Bridges (1973) reported that this was especially the case in circumstances where a child’s giftedness was seen as a stepping-stone to a higher socio-economic status. Contrary to common belief however, some studies have shown that parents of academically talented students are not always guilty of being “pushy” and pressuring them to achieve. Although many parents in a longitudinal study of 800 participants at a summer programme defined academic success in terms of concepts outside the individual (e.g. out-performing peers, attaining a successful career) a large proportion also attributed success to internal factors such as happiness, attaining personal goals, trying one’s best and being inquisitive (Ablard, 1997)

Relationships with siblings

A diagnosis of giftedness or talent may disrupt sibling relationships. There is some evidence that the siblings of gifted individuals feel greater jealousy and competition, and may be less well-adjusted than the siblings of non-gifted children. Gifted children

may receive more attention from their parents than their siblings do, most likely because they are more demanding and require more stimulation, and this too is likely to cause competition and envy. However, it appears that difficulties among siblings are most intense soon after the label of “gifted/talented” has been applied; within five years the negative effects were negligible.

It is important to remember that giftedness/talent does not cease outside of the classroom – a child will continue to be creative, interested and demanding of stimulation at home. As the child’s home life plays such a large role in moulding their cognitions and behaviours it is necessary to bear in mind the impact of a diagnosis of giftedness on the dynamics of the family as a whole.

Managing Stress in gifted and talented children

Stress can be defined as a biological reaction to circumstances where an individual perceives a discrepancy between a situation or event and their ability to cope with that event. Everyone experiences stress, and the extent to which we suffer is related to factors such as personality and temperament. Stress in gifted children can arise from a desire for perfectionism, feelings of being “different” from their peers, or worries that they cannot maintain the standard of work that is expected from them. Younger gifted children may find the classroom stressful if classmates constantly rely on them for help and support rather than asking the teacher. Often, young children would rather ask a classmate who they perceive to be “clever”, instead of admitting to a teacher that they don’t know an answer. While in small measures this may benefit the self-esteem of the gifted/talented child, if it happens regularly it can cause stress due to worry about falling behind with their own work, being caught talking when they shouldn’t be, or being constantly distracted by others. Busy teachers may be happy to let more able pupils help their classmates, but often forget to convey the fact that they *know* they are helping and that the gifted child is not misbehaving, or neglecting their own work.

While challenge is necessary to extend and enrich the school curriculum for gifted and talented children, it is important to ensure that the challenge is not too difficult, or too far out of the reach of the child. Anyone if set near-impossible targets will find the situation stressful and it is wrong to assume that a child will relish tough

challenges simply because they are gifted/talented. Extension activities should be graded in difficulty in order that the child does not move from the classwork they can complete with ease to a task that they struggle with, as this can be frightening and damaging to self-esteem.

Older gifted children may experience stress as they come to the senior years of the school cycle and the standard of work becomes more difficult. Suddenly the student who has always achieved straight A's with no problems at all may no longer be receiving such high grades, and they need reassurance that they are not "losing their giftedness". If this problem does not arise during the final years at school it often occurs in the early years at university, where it is no longer possible to maintain a 100% record on assignments and examinations. Such a revelation can be quite damaging to the esteem of the gifted student, and again they need reassurance and preparation for this situation before they leave school. Also, students need to be reinforced with the idea that *failure provides feedback* and is an important part of the learning process. Gifted students may be particularly reluctant to adopt this view, especially if they have an unblemished academic record, so it is necessary to highlight the *process* of learning, rather than allowing them to continually focus on the outcome.

As end-of-year and school-leaving exams loom gifted students may experience intense stress as they struggle to live up to the high goals that they have set, to maintain their standard of work and "prove themselves". This problem can be exacerbated by teachers and classmates who dismiss them as "having nothing to worry about". Being gifted/talented does not alleviate exam pressures and may in fact intensify it, and these students need a trusted adult to whom they can express their fears and not have these fears dismissed as groundless. Further, hard-earned results deserve due praise and should not be dismissed with comments such as "we wouldn't have expected anything less from a gifted pupil like you". It is easy to forget the amount of care and attention that a student might have put in to their work, if they frequently turn in work of a high standard that appears effortless (Winstanley, 2004). Such comments are not only unfair to the student, but also explicitly state the weight of expectation that the student may already feel to perform well at all times in all subjects.

Career planning and support for gifted/talented children

Gifted students need help in relating their personalities, interests and abilities to specific career alternatives, and in understanding the personal requirements, training, lifestyles, advantages and disadvantages of different careers. Gifted and talented students often display *multipotentiality*, or the ability to succeed in a wide range of possible careers or fields of study. The gifted/talented student with a diverse range of interests may be faced with a bewildering array of opportunities and may have real difficulty in deciding which career path they would like to follow. Common career aptitude tests may not be helpful, as often such students perform to a very high level on a number of (or all) subscales, leaving them unable to narrow down their choices. Highly talented students may profess that they could imagine themselves being equally happy studying modern history, engineering, philosophy or medicine, so how could they possibly choose? Equally unhelpful are career counsellors or parents who tell students “Well, with your brains you can do anything”. Provision of work experiences, and mentors from industry and universities can provide students with a much clearer insight into possible careers and future study than hours poring over confusing university prospectuses.

Underachievement in gifted and talented children

According to Davis and Rimm (1995) the gifted or talented child who is underachieving represents both society's greatest loss and its greatest potential resource. Such children have the potential for high achievement, and yet are not reaching the levels of attainment that would be expected for individuals of their ability. This lack of attainment often leads in turn to frustration and annoyance in teachers, parents and within the child themselves. With appropriate interventions however, it is possible to reverse the pattern of underachievement and modify the pupil's cognitions and attitudes about work.

Underachievement is defined as a discrepancy between the child's school performance and some index of his or her actual ability, such as intelligence, achievement or creativity scores, or observational data. Although numerous different versions of this definition appear in the literature on underachievement, the key part to all of them is the discrepancy between actual and potential performance.

While such discrepancies are often easily picked up on in examinations, intelligence and attainment tests, some children may not perform well on any of these measures due to poor test-taking habits, and so the only way that they may be identified as gifted is through observation in classroom and home situations. For example teachers may note class behaviours, comments or vocabulary which hints that the child has more intellectual, creative or artistic potential than they are currently exhibiting in school. However, this requires teachers to be open-minded about the ways in which giftedness or talent can manifest itself – indeed, they must be open to the idea that a child who has previously been labelled as “average” or “below average” could have the potential to shine. Children who are highly creative may occasionally considered to be no more than average because their personalities and thinking styles are at odds with the traditional classroom. Rimm (1987) found that a lot of highly creative children express themselves through nonconformity, and this concern for thinking and acting differently from others compromised their ability to achieve and work to their full potential within the classroom. Boys tend show signs of underachievement earlier than girls, although the rates of female underachievement increase during the

last years of primary school and the first years of secondary, as peer pressure increases.

Due to the frustration that teachers and parents may feel towards an underachieving gifted child, it is sometimes easy to label them as “lazy”, or “wasteful of their talents”. However, the roots of underachievement run much deeper than this, usually in socio-emotional problems that may in turn underlie certain negative behaviours. The characteristics of underachievement can be divided into primary, secondary and tertiary characteristics.

Primary Characteristic of underachievers: Low self-esteem

The characteristic that is most frequently and consistently found among underachieving children is that of low self-esteem. Often these students do not believe that they are capable of achieving the expectations of their family, teachers and friends and of themselves. In a sense, the problems of low self-esteem arise from the pressure to “be gifted”. Related to this issue is a sense of personal control over the tasks in their lives. Pupils with low self-esteem may attribute failure to a lack of ability (rather than a failure to study adequately or appropriately), and success to good luck. Thus, they will take responsibility for their own failure but not their success. Weiner (1985) found that students who attribute success to the effort that they have put in are more likely to work hard and expend further effort in the future, while those who attribute success to luck or task ease do not show such behaviour.

Secondary Characteristics of underachievers: Avoidance Behaviour.

Low self-esteem often leads to unproductive behaviours based on the avoidance of work or study. This avoidance actually has a self-protective function – if the pupil has not studied then they can attribute failure to this, rather than having to question their own ability. If they study they may feel that they risk confirming their possible short-comings if they subsequently do not do well. In such scenarios pupils may also

assert that they find the curriculum work “boring” or “pointless”, as they feel that this provides further vindication for not studying.

Perfectionism and the expectation of low grades – although they appear to be opposites – both act as defence mechanisms for the underachieving child with low self-esteem. If the underachiever expects low grades, then she has lowered the possible gap between attainment and failure, meaning that she has at least achieved her (albeit low) goals. On the other hand, a perfectionist will strive for the unattainable, thus providing herself with the “get-out clause” that she sets higher standards for herself than others and so failure is not due to her own incompetence. Adderholdt-Elliot (1989) named five characteristics of perfectionistic students that contribute to underachievement:

1. procrastination
2. Fear of failure
3. An all-or-nothing mindset (e.g. even one grade B means failure)
4. Paralysed perfection
5. Workaholism, often leading to isolation, depression and burn-out.

Avoidance behaviours are most common in secondary school students, although not by any means unknown in younger cohorts. Typically, those displaying poor grades and avoidance behaviours in the early to middle secondary school years had excellent school reports earlier on. Such reports include comments such as “impossible to improve!” or “wonderful student. Set for big things”. It seems that the student’s excellent performance and such high praise from teachers often led to perfectionistic tendencies. Later, when the school curriculum became more challenging, so as to no longer permit constant perfect performance these students became demoralised and avoidant of study. Onset of these behaviours may be as late as college or university for some students, especially those who consider themselves to be happy and interested at school without finding any assignments or study particularly difficult. Such cases highlight the need for all school work to be tailored to provide an appropriate level of *challenge* for every student.

Tertiary Characteristics of Underachievers

Because underachieving children avoid effort and achievement to protect their precarious self-esteem, tertiary characteristics arise which support the pattern of underachievement. These most frequently manifest themselves as poor study skills and concentration and/or poor discipline at home and school, but may also appear as peer acceptance problems. It is often these behaviours that provide the “tip-of-the-iceberg” indication that avoidance behaviours are masking low self-esteem. Also in this category are skill deficiencies. Redding (1990) found that gifted achievers and underachievers performed equally on tasks that required global or holistic processing, but where precision was needed in tasks with detailed computation, underachievers performed less well. If the gifted child finds writing difficult, they may prefer to focus on the verbal aspects of a task. Further Rimm (1991) noted that young children tend to equate “fastest” with “smartest”, so those with writing difficulties may experience stress and worry that they are not as smart as their parents or teachers believe them to be.

The school environment has a large part to play in the management of underachievement in gifted and talented students. Whitmore (1980) described the characteristics of classrooms that seem to cause and support underachievement. These included a lack of respect for the individual child; a strongly competitive climate; inflexibility and rigidity; and an unrewarding curriculum.

Inflexible and rigid classrooms that show a lack of respect for the learning styles and ability of individual children can be one of the main causes of underachievement in gifted learners. Gifted individuals may process information more quickly and at a more advanced level than others in the class and as a result will need challenging and enriching extension activities. If extra assignments are given that are simply “more” or “harder” types of the same work, the pupil may begin to view this “busywork” as punishment for finishing quickly and slow their rate of completion accordingly. However, as their mind still remains active they may occupy themselves with day-dreaming, trouble-making or even reading other more exciting material. Over time

these behaviours may act as reinforcers that prevent the child from completing even the regular assigned class work.

Competitive classrooms where marks awarded are announced, or where a teacher expresses surprise at a student's high or low grades can have serious effects on gifted/talented children. Even students who are highly motivated and achieving may find that exaggerated emphasis on external rewards and punishments may detract from the inherent enjoyment that they get from learning. Those who underachieve may not have a clear picture of their competencies in certain areas, and receiving continuous feedback from teachers that they are not meeting expected standards may lead them to believe that they are actually below-average, or it may set in motion some of the avoidance or defensive behaviours outlined above.

Finally, gifted children may be especially sensitive to an unrewarding curriculum because of their advanced facilities for analysing and criticising material, or for the creative ways in which they think about subjects. Gifted underachievers can often be seen to perform at a very high standard in extra-curricular activities where they have the opportunity to choose the type and level of the pursuit they are engaged in. Where possible this should be applied to the classroom by letting the gifted/talented learner choose the type of extension activity they would like to do thereby giving them the chance to exercise some autonomy over the curriculum.

A number of common misconceptions exist with regard to giftedness/talent and underachievement. The first is that underachievement is a key criteria or component of giftedness, and some teachers nominate students as gifted on these grounds. While underachievement can be an indicator of underlying talents, it is by no means a necessity in defining giftedness. It is important not to overlook bright students who might be achieving and enjoying the school experience and assume that they do not meet the criteria for giftedness/talent.

The second misconception is that underachievement and trouble-making go hand in hand. However, a gifted child may be at the top of the class and not causing trouble but still be "coasting" on assignments that do not provide sufficient challenge. The discrepancy between their output and what they could potentially achieve could be grounds for a diagnosis of underachievement that is not recognised because they do not draw attention to themselves with discipline issues.

A checklist to identify gifted underachievers

Observe and interact with the child over a period of at least two weeks to determine if he or she possesses the following characteristics. If the student exhibits ten or more of the listed traits, including all that are asterisked, individual intelligence testing (e.g. on the Stanford-Binet or WISC-R) is recommended to establish whether he or she is a gifted underachiever.

- ___ *poor test performance
- ___ *achieving at or below grade-level expectations in one or all of the basic skill areas: reading, language arts, mathematics
- ___ *daily work frequently incomplete or poorly done
- ___ *superior comprehension and retention of concepts when interested
- ___ *vast gap between qualitative level of oral and written work
- ___ exceptionally large repertoire of factual knowledge
- ___ vitality of imagination; creative
- ___ persistent dissatisfaction with work accomplished, even in art
- ___ seems to avoid trying new activities to prevent imperfect performance; evidences perfectionism; self-criticism
- ___ shows initiative in pursuing self-selected projects at home
- ___ *has a wide range of interests and possibly special expertise in an area of investigation and research
- ___ *evidences low self-esteem in tendencies to withdraw or be aggressive in the classroom
- ___ does not function comfortably or constructively in a group of any size
- ___ shows acute sensitivity and perceptions related to self, others, and life in general
- ___ tends to set unrealistic self-expectations; goals too high or too low
- ___ dislikes practice work or drill for memorization and mastery
- ___ easily distracted, unable to focus attention and concentrate efforts on tasks
- ___ has an indifferent or negative attitude towards school
- ___ resists teacher efforts to motivate or discipline behaviour in class
- ___ has difficulty in peer relationships; maintains few friendships

From Whitmore, (1980) *Giftedness, Conflict and Underachievement* .Needham Heights, MA: Allyn & Bacon.

The effects of culture and socio-economic class on giftedness and talent

It is important to guard against the stereotype that gifted children from minority cultures will suffer due to deficient backgrounds and home lives (Porter, 2001). However it is important to recognise that gifted students from such backgrounds suffer educationally because they are not identified as gifted/talented. This inequality is unacceptable as giftedness is assumed to occur with equal frequency in all cultures (Boland and Wright, 1994). Frasier (1993) argues that minority cultural membership may also be a disadvantage when it is coupled with poverty, isolation or limited language exposure. It is further suggested that children from minority backgrounds may not show “traditional” signs of giftedness, as different values and skills are prized in different cultures, and so teachers may not be attuned to signs of giftedness beyond the norm (Frasier, 1997; Harslett, 1996).

Contrary to popular conceptions, socioeconomic status has very little impact on *individual* children’s academic achievement: factors such as parental encouragement of learning are much more important (Freeman, 1993). Further, even when children are hampered by their family life, many show great resilience and with the help of some other significant adult in their lives as a mentor they can achieve highly. Gifted/talented children who live in rural areas may be disadvantaged for a number of reasons, both in respect of developing their talents and with regard to identification and provision (Porter, 1999). Living in rural areas my mean children have less exposure to a range of social contacts from whom to learn; a smaller range of experiences to promote their development; fewer opportunities to come together with intellectual peers; and resources such as libraries, IT, and school support may receive less funding than in metropolitan areas (Bailey et al. 1995; Knight et al. 1997)

The Twice Exceptional Child: Gifted and Talented Children with Disabilities

“It is a well-kept secret that a child can be both gifted and disabled”

- Linda Kreger Silverman (1989)

Usually, children who are both gifted and disabled are recognised primarily for their disability. Since most disabilities do not prevent giftedness, it is logical to expect that there would be the same percentage of gifted and talented children with disabilities, as exist in the general population. More frequently however, emphasis is placed on remediating the disability than on nurturing the child’s individual gifts and talents and in some cases the disability may entirely obstruct recognition of talent. This is not to suggest that identification of talent should be easy with increased vigilance on the part of parents and teachers. At times, a child’s disability can obscure the expression of gifts and talents or gifted children with disabilities may rely on their intelligence to compensate for the disability, thus making both exceptionalities seem less extreme. In such cases, the disability may appear less severe because of the effort that is being expended to cope with it, and in turn the effort that is expended may hinder the full expression of gifts.

The usual methods of identifying gifted children such as observational checklists and IQ tests may not be sufficient to unmask gifts and talents in children with disabilities. Due to their sensory deficits, children who are blind and deaf tend to exhibit more “concrete” thinking and can have difficulty with abstract reasoning, which leads to lower scores on this portion of IQ tests. Also, children with hearing impairments may have trouble with oral instructions, and they may not have sufficient vocabulary to express the complexity of their thoughts. Children with dyslexia will certainly suffer on the verbal components of IQ measures, although it is suggested that these children will often display above-average ability in spatial tests.

Gifted children with ADHD

A factor of primary importance in dealing with a child with ADHD is establishing the appropriateness of the diagnosis. Research indicates that in many cases, a child who is diagnosed with ADHD may in fact be gifted and reacting to an unfulfilling and understimulating curriculum. Willard-Holt (1999) suggests that the key to distinguishing between the two lies in the extent of the “acting out” behaviours. If the acting out occurs only in specific situations, and especially in school, then it is possible that the behaviour is related to giftedness; whereas if the behaviour is consistent across a range of situations then a case can be made for a diagnosis of ADHD.

Willard-Holt (1999) proposes two checklists to help highlight the similarities and differences between students with ADHD and those who are gifted.

Characteristics of Gifted Students

Who Are Bored

- Poor attention and daydreaming when bored
- Low tolerance for persistence on tasks that seem irrelevant
- Begin many projects, see few to completion
- Development of judgment lags behind intellectual growth
- Intensity may lead to power struggles with authorities
- High activity level; may need less sleep
- Difficulty restraining desire to talk; may be disruptive
- Question rules, customs, and traditions

- Lose work, forget homework, are disorganized
- May appear careless
- Highly sensitive to criticism
- Do not exhibit problem behaviours in all situations
- More consistent levels of performance at a fairly consistent pace (Cline, 1999; Webb & Latimer, 1993)

Characteristics of Students with ADHD

- Poorly sustained attention

- Diminished persistence on tasks not having immediate consequences
- Often shift from one uncompleted activity to another
- Impulsivity, poor delay of gratification
- Impaired adherence to commands to regulate or inhibit behaviour in social contexts
- More active, restless than other children
- Often talk excessively
- Often interrupt or intrude on others (e.g., butt into games)
- Difficulty adhering to rules and regulations
- Often lose things necessary for tasks or activities at home or school
- May appear inattentive to details
- Highly sensitive to criticism
- Problem behaviours exist in all settings, but in some are more severe
- Variability in task performance and time used to accomplish tasks. (Barkley, 1990; Cline, 1999; Webb & Latimer, 1993)

She also proposes a list of questions that can be used to consider the differences between giftedness and ADHD

- Could the behaviours be responses to inappropriate placement, insufficient challenge, or lack of intellectual peers?
- Is the child able to concentrate when interested in the activity?
- Have any curricular modifications been made in an attempt to change inappropriate behaviours?
- Has the child been interviewed? What are his/her feelings about the behaviours? Does the child feel out of control? Do the parents perceive the child as being out of control?
- Do the behaviours occur at certain times of the day, during certain activities, with certain teachers or in certain environments?

This is not to say that giftedness and ADHD *cannot* co-occur in a child. Gifted children with ADHD differ from average ability children with ADHD in a number of

ways. While gifted ADHD children may be deficient in support skills in school such as note-taking, outlining, organization of ideas and writing skills, they often display greater proficiency for rapid learning. Compared with their age peers, gifted ADHD children are better at using learning strategies such as grouping by category, spatial arrangements, and mnemonics. However, their difficulty lies in remembering to use these strategies, and using them efficiently. When they do use these strategies the quality of their work can be outstanding, but can drop significantly if the strategies are abandoned. Gifted children with ADHD may also show differences in social and emotional maturity compared to average ability age peers. They may behave less maturely than their peers some of the time, for example they may be disruptive in ways that are viewed as “silly” by others in the class, but at other times they may display greater maturity, perhaps in having very complex ideas about how to play a game. Gifted children with ADHD can show much more sensitivity and emotional maturity than age peers with ADHD, and when feelings are negative gifted children with ADHD may be consumed by worries that would never occur to other children. Gifted children with ADHD need and like more complex activities than their age peers, and seek it out in their activities and interests. They can show intense focus and diligence beyond their years on complex tasks that excite them.

Gifted children with ADHD also differ from other gifted children. As before, they show a greater variation in social, emotional and cognitive domains and in their ability to act maturely. Cognitively, compared with other gifted children, those with ADHD have more trouble thinking sequentially, employing working memory and reasoning, often because they have trouble picking out the main or important features in data. Compared to their gifted peers they complete less work, try to hurry through it, may change topic mid-way through a project, and have difficulty working in groups.

Given the difficulty that can occur in distinguishing between ADHD and giftedness - as well as the possibility that they could occur together - as far as possible, assessments should be carried out by a practitioner who has experience in both fields.

Gifted children with Asperger's Syndrome

Asperger's Syndrome (AS) is characterized by pedantic speech content, impairment of two-way interactions, excellent logical abstract thinking, repetitive and stereotyped play, isolated areas of interest and ignorance of environmental demands. Neihart (2000) comments that there is growing recognition that gifted children with AS are sometimes not diagnosed because their unusual behaviours are attributed to either to a learning disability or to their giftedness. A number of similar characteristics have been noted between gifted children and those with AS, though distinctions can be pointed out. While both groups usually display above average verbal fluency, AS children are often very pedantic in their speech. Both groups may express a dislike for routines especially in school, but AS children are often much more rigid in their routines and less able to cope with change or disruption. While gifted AS children demonstrate creativity with word play and puns, they lack the social reciprocity that underlies most humour and so they often do not get the joke. Ordinary gifted children however do not have such difficulties.

Neihart suggests that the most pronounced feature to distinguish a gifted AS student is his or her lack of awareness regarding the feelings, needs and interests of other people. She comments that an AS child may talk at length on a topic without picking up cues that their listeners is bored, needs to leave, or would like to contribute to the conversation. They often are oblivious to social conventions and may interrupt conversations, leave abruptly, or show disregard for even the simplest rules. AS children also often avoid eye contact or appear to be looking straight through the person to whom they are speaking.

Proposed Characteristics to Differentiate Ordinary Gifted Children from Gifted Children with Asperger's Syndrome

Differentiating Characteristic	Ordinary Gifted	Gifted with Asperger's Syndrome
Speech Patterns	Normal, but may have language of older child	Pedantic, seamless speech
Response to Routines	May passively resist, but will often go along	Very low tolerance for change, agitation, aggression

Disturbance of Attention	If disturbance exists, it is usually external	Disturbance is internal
Humour	Engages in socially reciprocal humour	Can do word play, but typically doesn't understand humour that requires social reciprocity
Motor Clumsiness	Not characteristic of most gifted children	50-90 % of Asperger children manifest
Inappropriate Affect	Not a characteristic	Nearly always observed
Insight	Insight usually good	Usually remarkably absent
Stereotypy	Not a characteristic	May be present

AS children generally display difficulties in three areas: learning, socializing and behaviours. Mesibov (1992) suggests that interventions should concentrate on information, general support and managing problem behaviours. AS students can benefit by learning strategies to cope with these difficult areas, and these are best taught in ways that are in tune with the AS brain. Most children with AS are strong visual thinkers and much use should be made of diagrams, pictures and visualizations (Atwood, 1998). The strategies should be taught in the exact order that the student will use them in order to be successful. Interestingly, rote learning is recommended for gifted AS children, unlike other gifted/talented children, as it appeals to their rigid sense of structure.

Gifted and Talented Children with Learning Difficulties and Dyslexia

Students who are gifted and learning disabled are those who possess and outstanding gift or talent and are capable of high performance, but who also have a learning disability that makes some aspect of academic achievement difficult (Brody & Mills, 1997). Quite often recognition is given to students who exhibit talents in areas such as music, art or sport, but who have trouble with academic learning. A harder concept to accept, and for teachers and parents to spot, exists when a student's giftedness and learning disability both lie in related academic areas. For example, a student might

demonstrate advanced reading ability but have troubled with written expression and spelling. Brody and Mills (1997) suggest that it is students' whose gifts and disabilities overlap who are most often misunderstood and unrecognized.

Dyslexia is perhaps the most commonly known learning difficulty, affecting reading, comprehension and writing production.

A definition of the learning disability that provides a broad conceptualisation comes from the Report of the Irish Task Force on Dyslexia.

“Dyslexia is manifested in a continuum of specific learning difficulties related to the acquisition of basic skills in reading, spelling and /or writing, such difficulties being unexpected in relation to an individual's other abilities and educational experiences. Dyslexia can be described at the neurological, cognitive and behavioural levels. It is typically characterised by inefficient information processing, including difficulties in phonological processing, working memory, rapid naming and automaticity of basic skills. Difficulties in organisation, sequencing and motor skills may also be present.”

Dyslexia is not a developmental delay but can occur across the lifespan and may also involve difficulties with numbers. With early and appropriate intervention it can often be improved or alleviated. Dyslexia can occur in all socio-economic classes and can co-exist with other problems such as Attention Deficit Disorder. Gifted children who are dyslexic may show intense frustration with their difficulties in written expression, and may find other ways to compensate for their difficulty. For example, in spelling they may rely heavily on memory strategies rather than the phonic structures that other children will grasp.

Toll (1993) noted three distinguishing profiles of Learning Disabled/Gifted children:

a) The Subtle Gifted LD:

- have good verbal skills
- poor spelling and handwriting
- disorganized in their classwork
- discrepancies between strengths and weakness widen as they grow older

- Giftedness compensates for learning disability, so the disability is usually not recognised
- often viewed as 'underachieving'

b) Hidden Gifted LD:

- not labelled as gifted nor as Learning Disabled
- bright enough to compensate for their learning disability
- usually appear as average students
- usually recognize their giftedness and learning disability as adults
- need occasions where they can exhibit their superior thinking in creative ways

c) Recognized LD:

- they usually excel in an area of interest
- their disability depresses their intellectual performance
- teachers or parents detect good reasoning or thinking skills

Willard-Holt (1999) notes that gifted students with learning disabilities often show high ability in abstract reasoning, advanced vocabulary, insight and creativity, keen spatial and mathematical skills and are good problem solvers. Such traits, accompanied by disorganised work, failure to complete assignments, difficulty with computation or phonics/spelling and difficulties with sequential tasks may indicate a gifted student who has a learning disability.

Gifted and talented children with sensory and motor impairments

Willard-Holt (1999) suggests that it is students with sensory impairments who are most likely to use their intellect to compensate for their disability, which hampers the expression of their gifts and talents. She suggests three checklists with characteristics of giftedness/talent in students with sensory or physical disabilities, which could be used as a guideline for teachers.

Gifted Students with Visual Impairment

- Fast rate of learning
- Superior memory
- Superior verbal communication skills and vocabulary
- Advanced problem- solving skills
- Creative production or thought that may progress more slowly than sighted students in some academic areas
- Ease in learning Braille
- Great persistence
- Motivation to know
- Sometimes slower rate of cognitive development than sighted students
- excellent ability to concentrate (Whitmore & Maker, 1985)

Gifted Students with Hearing Impairments

Gifted Students with Physical Disabilities

- Development of compensatory skills
- Creativity in finding alternate ways of communicating and accomplishing tasks
- Impressive store of knowledge
- Advanced academic skills

- Development of speech-reading skills without instruction
- Early reading ability
- Excellent memory
- Ability to function in the regular school setting
- Rapid grasp of ideas
- High reasoning ability
- Superior performance in school
- Wide range of interests
- Non-traditional ways of getting information
- Use of problem-solving skills in everyday situations
- Possibly on grade level
- Delays in concept attainment
- Self starters
- Good sense of humour
- Enjoyment of manipulating environment
- Intuition
- Ingenuity in solving problems
- Symbolic language abilities (different symbol system) (Cline, 1999; Whitmore & Maker, 1985)

- Exceptional problem- solving skills
- Rapid grasp of ideas and superior memory
- Greater maturity than age mates
- Good sense of humour
- Persistence, patience and motivation to achieve
- Curiosity, insight
- Self-criticism and perfectionism
- Cognitive development that may not be based on direct experience
- Possible difficulty with abstractions
- Possible limited achievement due to pace of work (Cline, 1999; Whitmore & Maker, 1985; Willard-Holt, 1994)

International Provision for Gifted and Talented Students

It is not possible to provide a detailed overview of all the opportunities and provision made for gifted students around the globe. The first part of this section takes a detailed look at some of the provision available for gifted and talented students in the United States, as the US was a world leader in educating the highly able for many years. Next we look at the measures that the UK and Ireland are implementing to aid their most talented students. Finally the last part of this section highlights some countries that are making interesting provision, and some whose philosophical conception of giftedness or the way in which it is dealt with in the education system differs from the norm. For further in depth reviews there are two excellent comprehensive articles dealing with provision for able and talented children in Europe and around the world, the first by Joan Freeman (Freeman, 2001), and the second by Franz Mönks and Robin Pflüger (2005). You can link to these articles here:

Gifted Education in 21 European Countries: Inventory and Perspective (by Franz Mönks and Robin Pflüger (2005).

www.bmbf.de/pub/gifted_education_21_eu_countries.pdf

Out-of-school educational provision for the gifted and talented around the world by

Joan Freeman (2001)

<http://www.joanfreeman.com/mainpages/freepapers.htm>

Gifted and Talented Education in North America and Canada

North America

The USA has always been at the forefront in the Western world in terms of the amount of provision for gifted and talented pupils. The gifted child movement surged ahead at the beginning of the 1900's, with the work of Terman, Goddard and Binet in developing IQ and other psychometric tests. The movement gathered pace until the late 1920's when the Great Depression necessitated cutbacks. After 1950 there was a resurgence in interest in gifted and talented individuals, spurred on by the 1983 publication "A Nation at Risk" which identified a steady decline in science and maths scores and higher order thinking skills as well as functional illiteracy in 13% of 17-year olds. At a national level, the Jacob K. Javits Gifted and Talented Education Act (1995) funded the establishment of the National Research Center on the Talented and Gifted. This was strengthened by the 1998 Gifted and Talented Students Education Act which provides states with resources to strengthen programs and services for gifted students.

The definition of giftedness most frequently used in the USA today comes from the 1988 Javits Education Act:

"The term gifted and talented student means children and youths who give evidence of higher performance capability in such areas as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who require services or activities not ordinarily provided by the schools in order to develop such capabilities fully." (Jacob K. Javits Gifted and Talented Students Education Act, (1988) Title IV, Part B for P.L. 100-297)

Today gifted programming is mandated in 29 states. Funding is not always available specifically for gifted students in all of these states. Other states that have not mandated education for gifted/talented students may provide funding.

In 1993, the US department of education listed the desirable characteristics in a programme for gifted and talented youth:

1. Seeks variety - looks throughout a range of disciplines for students with diverse talents;
2. Uses many assessment measures - uses a variety of appraisals so that schools can find students in different talent areas and at different ages;
3. Is free of bias - provides students of all backgrounds with equal access to appropriate opportunities;
4. Is fluid - uses assessment procedures that can accommodate students who develop at different rates and whose interests may change as they mature;
5. Identifies potential - discovers talents that are not readily apparent in students, as well as those that are obvious;
6. Assesses motivation - takes into account the drive and passion that play a key role in accomplishment
7. Is integrated - provides assessment to identify the specific talent areas that the program is designed to address.

The Talent Search Model

The Talent Search Model of provision for gifted/talented students was pioneered in the 1930's by psychologist Leta Stetter Hollingworth and first put into practise by Julian Stanley of Johns Hopkins University. Talent Searches are conducted annually throughout the USA by various organisations dealing with gifted and talented individuals. An individual's participation in these searches is usually based on teacher recommendations and is most likely to occur around the 7th grade. Participants will usually have achieved a score in the top 3% on a national attainment

test. As of 2002 about 5,200 middle-schools and 5,000 elementary schools distribute Talent Search applications to students each year.

Centre for Talented Youth (CTY)

The largest of the talent search organisations is the Centre for Talented Youth (CTY) associated with Johns Hopkins University in Baltimore. The Centre was founded in 1979 and since then close to 1 million students have taken part in the talent searches. CTY offers intensive and fast-paced courses in the humanities, natural and social sciences, mathematics and computers. They offer both residential and commuter courses for students, taught by expert instructors. In some subjects a year-long school course is compacted into a few weeks, in others college level courses can be studied for school or college credits. Residential programmes not only allow for intensive tutoring and intellectual challenge, they also allow the student to make a wide range of social contacts, mix with like-ability peers and experience being away from home for a short period of time. CTY has a vibrant alumni community and a research department that focuses on disseminating research on giftedness to the public. CTY has international branches in Ireland, Spain, Bermuda and Thailand, and is associated with the National Academy for Gifted and Talented Youth in the UK.

On- and above-level testing

On-level testing (where a child is tested for attainment or potential according to their age) does not allow for adequate diagnosis of giftedness and talent. Such tests produce a ceiling effect, where the scores of the most able pupils are clustered at the upper limit of the test scale, and so do not offer any information about what the child could *potentially* have achieved. Above-level testing uses tests designed for older children but given to younger students who have already reached the ceiling criteria on their own age-appropriate tests. Thus, high-ability students, and their current levels of achievement can be more clearly delineated. Talent Searches employ above level-testing, most frequently in verbal and mathematical reasoning ability, and usually assess children at a level of between two and five grades ahead, depending on the age of the participant.

Most of the major talent search centres offer summer academic enrichment programmes, with an emphasis on residential campus-based courses at major

universities. These courses aim to provide students with more advanced and faster-paced work than they would encounter in school or to introduce them to new subjects that they have not yet had the opportunity to study.

High scores on above-level tests are usually the main criteria for participation on these summer programmes, which give students the chance to participate in intensive study in the humanities, social or natural sciences, mathematics or computer science. Residential programmes usually last for between two and four weeks. Some centres also run programmes for commuters, correspondence courses, after-school classes or one-off day long events.

Davidson Institute for Talent Development

The Davidson Institute for Talent Development was founded in 1999 by Bob and Jan Davidson to provide learning opportunities for profoundly intelligent young people. At present, their work can be divided into the following categories

- Davidson Young Scholars Program.

This programme takes a very holistic approach to the idea of talent development and assists profoundly gifted and talented young people and their families with facing the challenges presented by their high abilities. As well as providing assistance and counselling in areas such as parenting, and appropriate educational placements, each family receives counselling and consultancy, and distinguished mentors can be found to support the gifted/talented child. Online colloquia in selected topics within art, literature and science are run frequently, as are online parenting seminars. As of December 2004 there were 558 individuals from 49 states enrolled in the Young Scholars Program

- Davidson Fellows Awards

These fellowship awards recognise the outstanding achievements of highly gifted young people and provide scholarships annually to students up to age 18. Any young person, under the age of 18, may apply who has created a significant piece of work in the areas of science, technology, mathematics, music, literature and/or philosophy.

Judges, with high levels of expertise in the domain areas of the works submitted, carefully review the qualified applications and select recipients. In 2004 there were 15 recipients of awards: 4 Davidson Fellow Laureates each receiving a \$50,000 scholarship; 7 Davidson Fellows each receiving a \$25,000 scholarship; and 5 Davidson Fellows each receiving a \$10,000 scholarship.

- Educator's Guild

Davidson Institute Educators Guild is comprised of teachers, school counsellors and school/district administrators who are interested in connecting with colleagues to locate resources and discuss strategies for identifying and serving highly gifted students. Members of the Educators Guild have access to electronic mailing lists and bulletin boards and to the Davidson Institute for Talent Development's team of professionals who are available to assist with resource location and curriculum development.

500 teachers, school counsellors and school/district administrators are members of the Educators Guild.

- The Davidson Academy, Nevada

The Davidson Academy is a public school that is scheduled to open in Autumn 2006 in the grounds of the University of Nevada, Reno. The school's mission is to provide fast-paced, challenging and enriched teaching to profoundly gifted middle- and high-school students. Teaching will be provided by instructors from the Davidson Institute and college professors from the University of Reno. It is intended that each student will have an individualized learning plan based on his or her academic achievement level, interests and motivation and students will attend small, academically rigorous classes with intellectual peers of similar age. When students are ready, they will take one or more progressively challenging university courses along with their Academy courses, and when enough credits for a high-school diploma have been achieved they will have the opportunity to become fully matriculated students of the university. However, the support systems provided by the Davidson Institute will not be withdrawn until the student has turned 18. The Academy is the first public school in

the US established with the purpose of providing solely for profoundly gifted and talented individuals.

The Apex Program

The Apex Program is run by the Center for Gifted Education Policy under the direction of Dr. Rena Subotnik and is sponsored by the American Psychological Association. It brings together established leaders in scientific research and the arts who act as mentors for a selected group of gifted and talented high-school students.

The adolescent participants were identified in one of three ways: (1) through established channels/talent searches conducted within each discipline, (2) by the master or his/her associate, or (3) via gifted education networks.

A one-week summit is held in July or August of each year, which gives the students an opportunity to meet with their mentor frequently and to benefit from their guidance and expertise. The objective of these sessions is to establish a mentoring relationship based on a project and career guidance through the beginning of the student's college career. Mentors are asked to continue their relationship throughout the following year, by visits, email, post or telephone. The following summer both mentors and students are invited to return to the next summit to present the progress they have made in their work and to meet the new cohort on the project.

Advanced Placement

The Advanced Placement programme offers first-year university level courses to students still in high school. Students can sit national AP exams and as a result gain college credits while still at school, reducing the length of their degree once in university. In 2004 over 1.9 million AP exams were taken in the US in 34 subject areas including all sciences, mathematics, a number of foreign languages and a range of humanities subjects. Over 60% of high schools in the United States offer at least one AP course, meaning that students from isolated and rural backgrounds can also get a chance to taste college-level subjects. According to a report on acceleration in the US entitled "A Nation Deceived" (Colangelo, Assouline and Gross, 2004), college students who have not taken an AP class in high school have a 33% chance of

completing their Bachelor's Degree. This number rises to 59% if just one AP course has been taken, and to 76% if two have been completed. Advanced Placement courses have the benefit of allowing bright students to study challenging college-level material while still keeping them with their friends and familiar social activities until an age where they are socially and emotionally more ready to move to a university environment (Colangelo, Assouline and Gross, 2004).

Canada

On a national level, interest in gifted and talented youth in Canada has diminished considerably over the last decade. Leroux (2000) blames the state of the economy and governmental changes, but also notes a lack of enthusiasm for teacher to specialise resulting in less competence at identifying and handling gifted and talented students. Leroux further states that in most regions the term "gifted" refers only to intellectual giftedness and that provision is only available to assist those who are obviously already achieving in school. Canadian interest in Talent Searches has also significantly declined and as of Dec 2005 the Canadian branch of the Duke Talent Identification Programme (TIP) was no longer in offering assessment or summer courses.

The GATE Programme

Education in Calgary city is organised by the provincial government department, Alberta Learning, which is responsible for the delivery of education programs and services in the province of Alberta. The Calgary Board of Education, CBE, administers the education system within the city. The Centre for Gifted Education at the University of Calgary provides a program supported by the CBE - The Gifted and Talented Education (GATE) program, established by the CBE in 1987.

The program is currently offered in four congregated settings in the geographical north and south of the city. There are two elementary (grades 4-6) sites and two junior high schools (grades 7-9) sites. Queen Elizabeth Junior/Senior School introduced a Senior High school (grades 10-12) GATE program last year. The latter has been based on languages, arts and humanities. As of this year, the program in Senior High is to be extended to include Biology (including a university credit element), a careers and life management course (CALM) and Physics and Mathematics courses.

Admission to the GATE program is based on CBE Special Needs criteria for those children in grades 4-9 who are intellectually gifted. Referrals to the GATE program are made through the individual School Resource Group in consultation with parents. The Admissions Committee reviews all referrals and determines the applicants to be admitted to the GATE program.

Criteria for placement in the program include:

- Very superior scores on an individual psychological assessment (WISC-III IQ test and WAIS achievement test). An IQ of 130+ is required to.
- School nomination form Parent nomination form Student written response.
- An IPP (Individualised Program Plan) submitted from the referring school.

A rare aspect of the GATE program is that it also includes students who are coded as gifted and have a learning disability. Currently, the GATE provision takes in 550 students. Students admitted to the GATE program studied in the GATE schools dependent on their age and home location in the city. The students met for certain lessons as a GATE group taught by specifically appointed GATE teachers and at other times were integrated with students in the rest of the school.

GATE is not the only option for the more able student. The Junior/Senior high school visited had recently set up a GATE program for grades 10-12. However, not all GATE students progressed to this program, instead choosing other forms of qualifications. Advanced Placement schemes and particularly the International Baccalaureate were proving to be popular, particularly the latter as it was more readily recognised by the 'top' American universities. A small number of pupils who go through the GATE program do not continue on to university, choosing to set up or expand their business interests.

The teaching and learning styles observed in GATE classes centre around open ended project work. Discussions and student presentations features heavily. GATE lessons often gave the appearance of 'hot housing' where students discussed and creatively thought about issues and topics. Students are aware of their role in the education process and their responsibility for their own learning.

Gifted and Talented Education in the United Kingdom and Republic of Ireland.

The current UK government, in power since 1997, has made great strides in provision for gifted and talented students, and in raising the profile of these students in schools. The revised National Curriculum “access” and “inclusion” statements (Department for Education and Employment/Qualification Curriculum and Assessment, 1999) makes it a statutory responsibility to “provide for all pupils” according to their abilities. In particular, the identification of individual needs, differentiation in school, recognition of individual differences and “education of the able, gifted, and talented child” as a topic of teacher training is written into the guidance of governmental agencies (Monks & Pflüger, 2005).

England

In 1998, the Office for Standards in Education commissioned Joan Freeman to undertake an extensive survey of gifted and talented provision worldwide (Freeman, 1999), in order to inform the direction and scope of the UK plans.

The most recent White Paper on Education “Higher Standards, Better Schools for All” (DfES, 2005) makes specific reference to guidance and support for gifted and talented students. One of the keystones of this White Paper is the idea of “personalised learning” – described as “a tailored education for every child and young person, that gives them strength in the basics, stretches their aspirations, and builds their life chances. It will create opportunity for every child, regardless of their background”.

According to the White Paper the proposed school census (secondary, 2006; primary 2007) will ask all schools to identify students on their gifted and talented register, all students who are members of the Excellence in Cities (EiC) scheme and all members of the National Academy for Gifted and Talented Youth (NAGTY).

While committed to expanding provision and services for gifted and talented learners, and to the creation of a national register of gifted/talented pupils, at present the focus of the DfES and their core partners, including The National Academy for Gifted and

Talented Youth, is still on secondary school students. However, moves are underway to expand provision for primary school learners.

Excellence in Cities (EiC)

Excellence in Cities programme was launched in 1999 as a targeted programme of support in schools in deprived areas of the country. It originally comprised 25 Local Education Authorities, a number that has risen to 57 and is due for further expansion in 2005-2006. At present there are over 1000 primary and 1000 secondary schools involved in this initiative. Its aim is to provide a series of strategies for dealing with teaching and learning, behaviour, attendance, and leadership.

One strand of the EiC programme is to target gifted and talented students from disadvantaged areas. The aim of this gifted and talented strand is to

- Achieve significant, measurable improvement in the **attainment, aspirations, motivation and self-esteem** of gifted and talented pupils and students, especially those at risk of underachieving, including those from disadvantaged backgrounds.
- Improve the quality of **identification, provision and support** in schools, colleges, and local education authorities, giving priority to the weakest, and develop robust **quality standards** to support this.
- Develop tools, and identify and use levers, to help ensure that every maintained school and college in every LEA is equipped to **differentiate teaching and learning** to meet individual needs at the upper end of the ability range.

Each of the EiC areas has a Strand Co-ordinator, as well as a School Co-ordinator for each school. The school co-ordinator is required to implement, develop and monitor the school's strategy for identify and providing for gifted pupils, to liaise with other schools in the district, to work with learning mentors to identify and address the needs of disadvantaged, and to generally "champion" the gifted and talented students and

ensure that their social and emotional needs are catered for with an appropriate mix of challenge and support.

Physical Education, School Sport and Club Links Strategy – Gifted and Talented Strand

The gifted and talented (G&T) in physical education (PE) and sport strand is a key component of the Department for Education and Skills (DfES) PE, school sport and club links (PESSCL) strategy.

The main aim of G&T in PE and sport in PESSCL is to establish pathways which co-ordinate the development of, and the demands on talented (and potentially talented) young sports people so as to enable them to maximise their academic and sporting potential. Gifted and Talented programmes focus not only on high achievers but also on those who show sporting potential, including pupils at risk of underachieving and those from disadvantaged areas. The Youth Sport Trust manages the Gifted and Talented strand of the Government's Physical Education, School Sport and Club Links (PESSCL) strategy.

Junior Athlete Education (JAE)

JAE is a support programme that assists school sport partnerships in helping their most Gifted and Talented young sports people to manage the demands of not only their sport, but their school and social life.

The aim is to identify a young person's needs and, with the assistance of teachers, parents and coaches, give that person the opportunity to maximise their sporting potential while reducing the conflicting demands that developing sporting talent often brings.

As well as running workshops for young people and their parents, the programme also identifies a school staff mentor to support the athlete and help them plan and balance

their schedule.

Multi-skill academies

Created for Gifted and Talented 8 to 12 year olds, multi-skill academies are focused on developing core skills such as movement, co-ordination, agility, body awareness and thinking skills

Multi-skill Clubs

Multi-skill clubs provide a weekly opportunity for 7 to 11/12 year olds to take part in a wide range of sporting activities outside of school hours.

They enable young people to develop fundamental movement and sport skills, such as agility, balance, co-ordination, running, jumping, throwing and catching.

Support is also provided for gifted and talented athletes with disabilities and provision is made for research

The National Academy for Gifted and Talented Youth

The National Academy for Gifted and Talented Youth (NAGTY) was founded in 2002. Its stated objective is to drive forward education of gifted and talented students by providing support and leadership for education professionals. In order to achieve this aim NAGTY works with teachers, students, parents, education professionals, universities and businesses.

Based on the government directives, NAGTY proposes what it terms “The English Model” of gifted and talented education. It argues that the bulk of provision for such pupils must come from within the school classroom and that gifted education must be an integral part of general educational policy. In this respect, every teacher becomes a teacher of the gifted, and lesson planning must reflect this. However, if specialist provision is required that the school is not able to provide, then it must be made

available externally and the lack of availability in school should not hinder the progress of the individual. NAGTY suggest that this approach raises school standards overall. By age 14-19, the emphasis should be on personal pathways in learning, to reflect personal needs, and this is echoed in the most recent White Paper's ideas on personalisation of learning. In the English Model special attention is paid to under-represented groups, through school identification and NAGTY co-ordinates a number of initiatives with Local Education Authorities to raise aspirations and increase opportunities for gifted and talented individuals from minority groups.

NAGTY is currently divided into four strands: The Expertise Centre, The Student Academy; The Professional Academy; and the Research Centre.

The Expertise Centre

The purpose of the expertise centre is to create a link for policy makers and education practitioners to the relevant expertise and knowledge, in order to improve provision for gifted and talented pupils and in turn boost their attainment. They run a number of expert advisory groups based on provision for primary, secondary and 14-19 age groups, and for developing research, professional development and regional services.

The Student Academy

The Student Academy provides an opportunity for the gifted/talented student to join a community of peers who will provide support and stimulation.

Through the Student Academy, members can take part in:

- A year-round programme of short courses delivered by experts at locations across the country
- Summer Schools providing a lengthier, in-depth focus on one subject in a university environment
- Academic Study Groups, offering Internet-based learning guided by academic specialists
- Online forums where members discuss wide-ranging topics

- **Online learning:**

The Student Academy runs a number of Academic Study Groups (ASG) which are free to student members of NAGTY. ASGs are informal virtual learning environments creating communities of students who share interests in a particular subject or discipline, and are led by experts in the field. The student is not limited in the number of these groups that they join. Current ASGs include Astronomy; Classics; Film Studies; Ethics and Philosophy; Engineering; and History. Below are two samples of monthly topics in the ASGs.

As part of its online community, NAGTY also offers a selection of discussion forums for students, in debate topics (e.g. views on the war in Iraq) and general chat forums. As these forums are available round the clock online it means that gifted/talented students always have somewhere to go if they need to talk to a peer.

Classics Study Group

Art and artefact in Greek and Roman cultures

What is 'art'? What is an 'artefact'? Are they different things? Does it just depend on who you ask?

This discussion group will look at a variety of images from the ancient world – a different one each two weeks or so. Each of these mini-discussions will centre on an individual object or piece of 'art'. What do these things mean to us? Are they works of art? Did the ancient Greeks and Romans consider them art? How can we tell?

The things we look at will be as varied as prehistoric figurines from Greece and Roman wall paintings from Pompeii. Or maybe you've got a favourite object or image you would like to talk about?

We will examine these objects or images in detail to get as much information as we can about what place they had in ancient cultures. But we will inevitably need to think about much bigger issues too - the nature of art; how we can know about what long-dead people thought about and were interested in; the difference between a museum and an art gallery and why we bother visiting them.

This discussion group is for anyone interested in art or in the ancient world – or both! No prior knowledge is necessary. Just bring your ideas, questions, and thoughts.

Ethics and Philosophy Study Group

What is betrayal?

Is it an evil thing to do? If so, why? Is betraying a friend the same as betraying a stranger?

According to Aristotle, friendship should be regarded as the supreme human relationship. Can betrayal ever be the right course of action?

Is betrayal something we cannot get rid of even in our advanced and evolved society?

According to Nietzsche, "that lies should be necessary to life is part and parcel of the terrible and questionable character of existence".

- **Summer Schools**

The NAGTY summer schools provide residential courses that take place in higher education institutes around the UK. The courses are aimed at gifted/talented students aged 11-16. These summer courses will be provided at universities in Warwick, Bristol, Leeds, York, Durham, Canterbury, Lancaster and London. Some of the topics to be covered this summer include Legal Studies, Robotics, Religious Studies; Advanced maths; Creative writing. Students study one subject for 2-3 weeks, attending classes and study sessions daily. The classes are usually led by university lecturers, helped by teaching assistants, who are usually postgraduate students. The summer schools also provide a wide range of social activities from sports to drama and talent shows, giving the students a chance to interact and make friends outside of the classroom. Living on a university campus for 2-3 weeks allows the students to fully immerse themselves in all aspects of the programme, develop close friendships, and to develop a sense of independence in being away from home.

- **Outreach Programme**

NAGTY runs an extensive outreach programme for students in a variety of locations throughout England and Wales. These events are short courses that normally take place at weekends or on school holidays. The events may be residential or non-residential. Most take place at universities, but some are held at specialist sites such as theatres, museums, or science and technical facilities.

- **The Higher Education Gateway**

NAGTY's Higher Education Gateway is part of a national project by the Department for Education and Skills (DfES), entitled AimHigher. AimHigher is a student portal that provides information to all students considering higher education. It provides information on university and college courses, advice on securing funding, and aims to widen participation in UK higher education, especially among non-traditional groups, ethnic minorities and those with disabilities.

The HE Gateway is for students who are in the national top 5% in terms of ability and have little family experience of higher education. The HE Gateway offers fun,

high quality learning opportunities to students with little experience of higher education. Students can take part in events with leading academic experts at a participating higher education college or university. The NAGTY HE gateway has partnerships with 30 universities all over England in order to provide outreach events specifically for gifted/talented students who otherwise might not consider higher education.

○ **Gifted Entrepreneurs Programme**

The Gifted Entrepreneurs Programme was run in 2004 and 2005 and trained young people in a very practical way how to plan and run their own business and to think in an enterprising way about their future careers. The programme is sponsored by the Goldman Sachs Foundation. School teams submitted business ideas and received

- Expert training in Entrepreneurship skills from The Network for Teaching Entrepreneurship (NFTE - pronounced "Nifty"), an international non-profit organisation that introduces young people to the world of business and entrepreneurship
- Specialist mentoring that participants receive as they develop their businesses, from Goldman Sachs staff and from MBA students at Warwick Business School

Prizes for the best business ventures were awarded at the culmination of the programme this year. It is likely that the programme will run again in 2006.

○ **The Student Council**

NAGTY runs six regional student councils across England, facilitated by a member of staff at NAGTY, who meet once a term to discuss issues regarding NAGTY students. The councillors are all NAGTY students who stand for election and are voted in by their peers. Being a NAGTY student councillor helps the young person to develop a set of skills including

- Framing an argument or opinion
- Social skills through networking
- Presenting the ideas of others

- Liaising with staff
- Committee servicing (through attending meetings with associated agendas and minutes)

The Professional Academy

The Professional Academy works with schools, colleges, LEAs and other education providers to improve their provision for gifted and talented students by alerting them to guidance and examples of best practice. It also aims to increase access to high quality professional development opportunities and support examples of innovative practice. Working in partnership with the DfES, the Professional Academy strand of NAGTY aims to help ensure that every teacher feels confident in their ability to cater for the gifted pupils in their class.

Regional Gateways are part of NAGTY's delivery framework and exist to create opportunities for children and teachers and to foster the efficient sharing of information between educational professionals in a region, who are involved in the education of gifted pupils. The nine Gateways are aligned to the government regional structure. The work of each Gateway is organised through a steering group of representatives of Local Education Authorities, Higher Education Institutions, NAGTY and other relevant regional organisations with an interest in gifted and talented education.

At present there are nine Regional Gateways in operation, or currently under construction. They are: NAGTY East Midlands; NAGTY Eastern; NAGTY North East; NAGTY North West; NAGTY South East; NAGTY South West; NAGTY West Midlands; NAGTY Yorkshire and Humberside; and London Gifted and Talented.

○ **Ambassador Schools**

In order to promote the exchange of ideas and best practice in education NAGTY has recognised a number of Ambassador Schools, whose provision for gifted and talented students was singled out for praise during Ofsted inspections. These schools usually have specific policy guidelines and stated aims with regard to gifted pupils, and encourage a broad range of enrichment and extra-curricular activities and offer

extension and acceleration in some subjects where appropriate to the student. At present NAGTY has identified 18 Ambassador Schools.

○ **PGCE+ Programme.**

PGCE+ is an innovative programme for early career maths and science teachers funded by the Gatsby Charitable Foundation. The overall aim of the PGCE+ is to increase the capacity of an NQT to address the needs of gifted and talented students. The programme is designed for teachers who have just completed their PGCE course and presents a unique opportunity for participants to work alongside a NAGTY Summer School and to benefit from ongoing support through their early years of teaching. The PGCE+ comprises a two week course at one of the NAGTY summer schools, with the opportunity to work with the students and observe the teaching of maths and science at the summer school. The participant also receives follow-up support online and face-to-face meetings facilitated by NAGTY. During the summer school the key pedagogical issues covered include:

- The importance of gifted and talented as part of the inclusion agenda
- Identification of gifts and talents
- An insight into giftedness from the perspective of the student
- An overview of key research into thinking
- Characteristics of effective teaching for the most able in both a generic and subject-specific context
- Resourcing the teaching of the most able
- Assessment
- Monitoring and evaluation
- Developments in national priorities and provision

○ **Quality Standards**

Quality Standards is a joint project between NAGTY and the DfES to create a nationally recognised framework for schools to evaluate their performance and provision for gifted and talented students. It is designed to be accessible and relevant to all schools and colleges, with varying experience and expertise in gifted and talented education and in all areas of the country.

The structure of the Quality Standard is based around five key headings:

- Effective Teaching and Learning Strategies
- Enabling Curriculum Entitlement and Choice
- Assessment for Learning
- School Organisation
- Strong Partnership beyond the School

Within these five headings are a number of sub-criteria against which the school can rate its performance. As the QS provides a standardised mode of evaluation, a school can not only gain information on its own performance, but also see how they compare with others in their area, and gain ideas for further improvement.

The Quality Standard is built around a model of three levels of practice

Level 1: Entry	A baseline level of practice, where the school has made the first steps towards the implementation of a whole school approach to Gifted & Talented provision
Level 2: Developing	The school is effective in meeting pupils' needs and has practice which has scope for reinforcing, progressing and further improvement
Level 3: Exemplary	Exceptional and sustained practice, which has scope for disseminating beyond the school/college, and also for continuous improvement as best practice nationally evolves

○ **Think-Tanks**

NAGTY organises a number of two-day events for recognised leaders in key subject areas to come together and discuss ways to move provision for gifted and talented students forward in these areas. Each session is led by a convenor with recognised expertise in the subject area who will lay out the challenges and provide the context for structured debate. From these discussions NAGTY plan to develop a range of support materials, online training and subject specific conferences.

The Research Centre

The Research Centre at NAGTY is concerned with producing academically rigorous research that will inform education policies and provision, CPD training, and development of effective pedagogies. At present there are five research strands underway at NAGTY looking at all aspects of gifted and talented education from following Student Academy members throughout their schooling, to identify effective pedagogy for gifted and talented students. There is also support for teachers who wish to carry out their own piece of school-based research

Other approaches:

Villiers Park

Villiers Park Educational Trust is a partner organisation and provider for NAGTY. Their current focus is on creating “inspirational classrooms for gifted and talented students”. They run an extensive range of short courses for students in science and humanities but their approach also includes teachers, providing not just general CPD on gifted/talented learners but also courses dedicated to extending and enriching teaching in a wide range of subjects to cater for more able learners. The philosophy of the centre is to help teachers to reconnect with their subject and rediscover the interest and excitement that they had when they studied it first, with the idea that this enthusiasm will then filter down to the students. For example, one course entitled “Neuroscience in the Classroom” not only aims to promote a deeper understanding of the anatomy and physiology of the brain for AS/A2 level, but also to give teachers a chance to study some of the recent research findings and their theoretical and clinical ramifications. By placing this research in context outside of the parameters of the curriculum it is hoped that it will inspire teachers and remind them of the importance of their subjects to the wider world.

The Brunel Able Children's Education (BACE) Centre

BACE is located at Brunel University, West London.

The centre aims to:

- offer support to professionals to make effective provision for higher ability pupils;
- provide research evidence to help increase understanding of the most able children in our schools and their needs;
- establish principles of curriculum design and show how they may be incorporated into actual curriculum materials;
- offer programmes for gifted pupils through professional development schemes.

They run professional development courses in educating exceptional children and mathematics enrichment for able children; an MA in Gifted Education and various Doctorate degrees by research; and have a number of research and development schemes underway including an Urban Scholars Programme, and a mathematics enrichment project.

Wales:

In the 2003 Welsh parliament consultation document “Educating Pupils Who Are More Able and Talented: Guidance for Local Authorities”, the term ‘more able’ and ‘talented’ is used to describe *"pupils who require extended opportunities across the curriculum in order to develop their abilities in one or more areas"*. In general, approximately 20% of the school population may be ‘more able’ while the top 2% could be considered ‘exceptional’. Ability and talent can manifest itself in many different ways e.g. academic, practical, creative and social fields of human activity. The definition in Wales also takes into account the fact that children may have a specific learning disability and references is made to ensuring that identification processes are broadly based in order to identify children including those with the potential to achieve at higher levels and those who may be underachieving.

The approaches selected could include taking into account any of the following:

- Teacher observation and assessment, using agreed criteria, such as generic and subject checklists
- National Curriculum attainment and non attainment e.g. tests and Teacher Assessment;
- Attainment in externally accredited courses e.g. GCSEs;
- Standardised test scores;
- Involvement and achievement in competitions;
- Achievements in extra-curricular activities;
- Nomination by the child’s parent(s)/carer(s);
- Peer group nomination;
- External agency nomination e.g. health visitor.

In “Inclusion and Support”, a 2005 consultation paper there is also a section dedicated to the needs of more able and talented learners within the Welsh curriculum. However, given the size of the document they section on talent is afforded relatively little space.

The Qualifications, Curriculum and Assessment Authority for Wales (ACCAC) have also produced a piece of guidance for schools entitled “A curriculum of opportunity:

developing potential into performance” (ACCAC, 2003). This dual-language document provides an overview of identification, classroom strategies and outside opportunities.

Scotland

In the “Ambitious, Excellent Schools” progress report the Scottish Executive have outlined plans to implement indicator rating scales to check on schools’ performances and also the abolition of “age and stage” related examinations, meaning that students can be more flexible in when they take state exams, which will impact gifted and talented learners.

Scotland has nine centres of excellence that allow gifted children to maximise their potential, both academically and with regard to their particular talents. These centres offer a specific focus on a child’s gift, be it music, sport, dance or language. More than five of these schools are dedicated to music, with only one of each for dance and sport. Also, these schools are mainly clustered in the large cities of Edinburgh, Glasgow and Aberdeen.

The Scottish branch of the National Association for Gifted Children run explorer clubs and a range of enrichment activities. They also provide support for teachers and counselling for the gifted/talented and their families.

Scottish Network for Able Pupils (SNAP)

This association was founded in order to provide support for gifted pupils and their parents and teachers in Scotland and is based at the University of Glasgow. The colourful and easily accessible website www.ablepupils.com has pages dedicated to pupils, and extensive lists of research articles and books. Some are available for free and others for a small membership fee. SNAP also runs a brief online CPD course for teachers, which although not formally accredited provides useful background information and reflections. SNAP also hosts an annual conference for parents and educators, and recent keynote speakers have included Prof. Howard Gardner.

Northern Ireland

Explicit measures to provide for gifted and talented students in Northern Ireland are scant. In late 2004 the South Eastern Library Board (SELB) initiated a programme whereby approximately 20 students, nominated by teachers, were tested using standardised IQ and self-perception tests, including Ravens Progressive Matrices, the Mill-Hill Vocabulary Scale and the Myself-as-a-Learner Scale. These children subsequently took part in a series of “Discovery Days” at the AMMA centre in Armagh organised by the SELB, where they had the chance to attend classes such as Animal Behaviour, Engineering, and Media.

Republic of Ireland.

The educational needs of gifted students are not explicitly stated in Irish law. However the 1998 Education Act states that provisions should be made for those with “special educational needs” to ensure development to full potential and the Special Education Review Committee in 1993 advocates for respect and recognition of individual differences in the following statement: “Class organisation is to include class group and individual activities in an effort to enable each child to go forward educationally at a pace and depth of individual capacity....enrichment and acceleration should depend on ability related output.” (Monks & Pfluger, 2005). However, many schools do not have the resources or facilities to offer extensive enrichment programmes and whether a child is accelerated very often depends on the school’s own policy. Where acceleration occurs it is usually in the form of early grade skipping, although the perception of the negative effects of acceleration often mean this option is not considered.

IBM/DCU Irish Science Olympiad

Provision for gifted students is mainly organised outside of school. The IBM/DCU Irish Science Olympiad is open to post-primary students who wish to extend their knowledge of chemistry, physics, mathematics, biology and computer programming. The early rounds of the competition begin at school level, eventually building up to national and international competition. At the national level the top 250 students are invited to take part in the finals, held at Dublin City University

Irish Centre for Talented Youth (CTYI)

Founded at Dublin City University in 1992, the Irish Centre for Talented Youth is a branch of CTY International and provides extra-curricular enrichment to students aged 6-16 as well as guidance for their parents and teachers. The first three-week summer programme was offered in 1993, and at present CTYI caters for approx 2,600 students each year in a variety of residential and non-residential programmes in centres around Ireland. Two three-week residential summer programmes are now offered each year at the Dublin City University campus for students aged 12-16. Students have the opportunity to study subjects such as Psychology, Medicine in the Laboratory, Archaeology, Engineering and Game Theory at a level equivalent to first-year university standard in a fast-paced but supportive atmosphere. Entry qualifications for the programme are based on Scholastic Aptitude Test (SAT) scores and eligibility to take the SAT is determined by a score above the 95th percentile on a standardised mathematical/verbal reasoning test; notable achievement in a national competition demonstrating talent in fields such as maths, science or literature, or a personal statement explaining why the individual believes they would fall in the top 5% of the school population. All applications must be supported by a parent, guardian or teacher. In recent years the Centre has organised a number of one-off events for its students at weekends and it also runs a successful correspondence course for 12-16 year-old students. Participants are assigned one essay or assignment per month with recommended reading and are required to email their essay to the Centre where it is marked by an experienced tutor and detailed feedback is given. The correspondence course aims to promote essay-writing skills, provide a background knowledge of the course topic and teach time-management, research skills and critical thinking. Previous correspondence course topics include mathematics, psychology and philosophy.

Non-residential classes for 8-12 and 6-7 year olds run each summer and on Saturdays during the year. Some recent classes for this age group have included World Geography, Aeronautical Engineering, Psychology, Greek and Roman Mythology, Mathematical Magic and Film Studies. Classes for younger students take place in Dublin, Galway, Cork, Limerick, Letterkenny and Waterford.

As the topic of gifted and talented education is not a compulsory part of teacher-training in the Rep. of Ireland, CTYI also provides training and information for interested teachers and parents.

Gifted and Talented Education in Asia

The view of giftedness and talent in Asia highlights key differences between Eastern and Western philosophies. Asian views of education place a great deal of emphasis on individuals taking responsibility for their own achievements and the environment of an individual is considered just crucial to their development as innate ability, if not more so. Whereas in the West we tend to consider certain abilities to be genetic, and we screen children to discover their aptitudes, in Eastern Asia every baby is seen as being born with similar potential – it is their rate of development that varies. The keys to success in all aspects of life are diligence, persistence and hard work, along with the belief of the pupil and teacher in the pupil's capabilities, and the teacher's efforts are seen as a key factor in this success. In almost all international studies of student achievement, East Asian countries consistently top the polls in mathematics and science, yet studies of Chinese children have shown that they do not show any exceptional ability in mathematics at pre-school. Further, it is not just a few excellent performers who raise the average: overall the standard of achievement is very high and appears to be rising (Freeman, 2001)

China

Intellectual development in China is seen as very fluid and it is considered acceptable to accelerate a child as soon as they have achieved certain standards in their work. The basic quality of education in China, at least in the big cities is very high, with Chinese school-children out-performing their peers in Japan, Taiwan, Hungary, Canada and the United States. Elite schools do exist for exceptional students, and a number of universities run extra-curricular programmes for gifted youth, but really this provision meets the needs of only a tiny percentage of the country's enormous population. However, one of the most successful approaches to encouraging talent in China comes in the form of the Children's Palaces. They use a very different and popular means to identify children's abilities which lies in the motivation of the child herself. Children's Palaces may be houses or large purpose-built edifices crammed with a huge variety of activities. Children may choose exactly what they wish to do, be it music, drama, work in science labs, exercise, play with others in the playground,

calligraphy etc. The concept of the Children's Palace is that it is freely available to all children and that they have autonomy in their choice of activities. There are no entry tests and no child is turned away. Those children who find stimulation and enjoyment in certain activities can choose to take their subject further. They agree to a contract to attend for a certain number of lessons. If the contract is broken without good reason then they are not permitted to continue. The Children's Palaces play a large part in the moral, social, physical and artistic development of children although the precise impact of the movement is difficult to quantify due to the vast numbers of students who attend.

Japan

In Japan the emphasis in education is on equality for all: up to high school streaming is virtually unheard of and only those with sensory impairments or severe intellectual disabilities are educated separately. In keeping with the Eastern ideas of collectivism, separating able children from their peers would be seen to constitute an attempt to diminish their understanding of the role they play in Japanese society. Classes often have up to 40 pupils per teacher and a strict curriculum is followed meaning that there is little opportunity for teachers to assign more advanced work or reading. In classroom group work innate differences in ability are often disregarded and groups are mixed so as to contain members of both high and low ability, or children with different temperaments. Able children are expected to help their peers to learn, the pay-off being a deeper understanding of the material. Interest for more able learners is often maintained by the style of teaching. Japanese teachers aim to act as "knowledgeable guides" rather than lecturers, allowing students to discover information for themselves, and then requiring their pupils to evaluate and appraise it. Thus even more intellectually able children can be challenged to explain their reasoning or evaluate the proposals of another student. At the level of high school, education in Japan begins to disperse, as students decide whether to follow professions or trades. After-school activities in Japan are strongly encouraged and are often compulsory after the fourth grade. Up to 60% of Japanese teenagers attend *Juku*, expensive after-school schools, often perceived in the West to be "cram schools". In reality a large number of activities in personal and social development are offered, from journal-writing to English conversation.

Gifted and Talented Education in the Antipodes

Australia

School education in Australia is the responsibility of each state so policies vary but during the mid-nineties all of the states committed themselves to furthering the education of gifted and talented students in their policy documents. Within the education system itself, equality of opportunity is considered especially important and the majority of gifted and talented students are educated in mixed-ability classrooms, with little differentiation of the curriculum (Freeman, 2001). The story is beginning to change however, with a number of universities providing undergraduate and post-graduate training in educating highly able children, and dedicated teacher in-service training.

In New South Wales a number of primary schools have established “Opportunity Classes” – self-contained classes dedicated to gifted and talented students where they can work on a fast-paced and challenging curriculum. Students are selected via teacher and parent nomination and through a battery of achievement tests. The State Education Department of Southern Australia operates SHIP (Students of High Intellectual Potential) schools – six high schools and three primary schools – which are specially focussed to the needs of gifted and talented pupils. Acceleration, in the forms of early school entry, grade-skipping or single-subject skipping is permitted and in a number of high schools telescoping takes place, where six years of school are completed in five. In the State of Victoria the Victoria Strategic Plan (2000-2005) predicted that provision for gifted and talented education would continue to grow in the following areas:

- Identification of gifted students
- School-based program options
- Use of School Models for educating the gifted/talented
- Planning the whole school program
- Classroom strategies and use of mentors
- Extensive professional development for teachers.

In Victoria there are 48 networks that provide links between schools and the central office responsible for teacher training and policy implementation. Accredited

providers are authorised to identify students and provide them and their families with counselling, while parent support networks organise informal meeting, information nights and guest speakers (Freeman, 2001).

In New South Wales the Gifted Education Research Resource and Information Centre (GERRIC) is a largely self-funding organisation based at the University of New South Wales and under the direction of Prof. Miraca Gross. It was established in 1997, although a number of its programmes had been running informally for a number of years before that. In 1998 GERRIC ventured into partnership with the Belin-Blank Centre for Talent Development at the University of Iowa in the US to create a talent search programme for Australia. The outcome has been the Australian Primary Talent Search (APTS). Pupils in grades 3-6 take a test called *EXPLORE*, an above-level test that is normed on Grade 8 pupils in America. The test is multiple-choice and covers the areas of English, mathematics, reading comprehension and scientific reasoning. Pupils are required to take each section, regardless of where they feel their talents lie, and GERRIC have found that gifted students are likely to underestimate their abilities in a subject that they feel is a relative “weakness”. The large size of the Australian landmass makes the running of APTS a very difficult enterprise, so in consultation with educators from other states GERRIC have devised a list of criteria which qualify pupils for testing.

[Insert list here](#)

These criteria are purposely broad in order to give parents and pupils guidelines and to reduce the likelihood that societal and teacher prejudices would hamper access to testing. Children are able to attempt practise tests online, meaning that they are not faced with daunting exam situations and unfamiliar material on their test day.

The main goal of APTS is to provide teachers and parents with information on differentiating the curriculum for gifted pupils. Information is provided that allows teachers to align the pupil’s scores with the core curriculum outcomes and to plan a suitable strategy of work for the pupil. Thirteen educational options are listed for talent search participants and from this range teachers can select the most appropriate combination of interventions for the student.

All students who take part in the APTS are eligible to participate in GERRIC’s holiday enrichment programmes for gifted students. Children are grouped roughly according to age/grade with the Poppyseeds and Tall Poppies programmes aimed at

the youngest students and the Scientia programmes at the older cohort. Workshops are lead by instructors with postgraduate qualifications and/or experience in teaching gifted children. Participants are not formally evaluated on their performance but presentations are made to an audience of family members and other students to showcase the work that has taken place.

As well as test scores GERRIC has found that other non-standardised methods of selection are effective and necessary. **Insert list.**

New Zealand

Freeman (2001) considers the approach taken by the Ministry of Education in New Zealand to be one of the most impressive worldwide, in the range of learning experiences provided for schoolchildren. She also notes that “provision is...more unified across the country and the model more robustly applied”. One of the main schemes is called Learning Experiences Outside the Classroom (LEOTEC), where over sixty providers such as museums, historic parks, zoos and art galleries offer stimulating and interactive experiences on behalf of the Ministry. Often these providers develop their own professionally developed materials that teachers can incorporate into their planning and teaching. Access to these programmes is not selective, all children can attend, and it is the belief of the government that these activities outside the classroom “add value in a cost-effective way to the curriculum” (Freeman, 2001). National projects have been implemented in environmental science, technology, and the arts to provide LEOTEC opportunities to students from primary school right the way through to school leavers. Students can have the chance to take measurements in environmental fieldwork, go on virtual fieldtrips, visit conservation islands, develop skills and knowledge for TV production, and offer them the chance to get involved in drama and music productions not just on stage but behind the scenes in all aspects of set design, costumes, lighting and directing.

Gifted and Talented in Europe

Spain

Spain is one of the few European countries where giftedness is mentioned explicitly in the legislation on education. The “Royal Decree 696/1995” explicitly “regulated the conditions for educational attention to student with temporary or permanent special needs that are associated with educational history, or that are due to the conditions of giftedness, mental disability, or motor or sensorial handicap”. The Quality Education Law 2002 states that intellectually gifted pupils will receive specific attention from educational administrations and that early measures for identification need to be adopted. In 1996 the procedures to allow flexible acceleration of students in primary and secondary education were put in place. Required schooling can be reduced by a maximum of two years, and acceleration will be closely monitored and will cease if a student fails to reach proposed objectives. Evaluations on the suitability of a student for acceleration will depend not only on their performance at grade level but also on a psychological assessment of their socialisation ability and personal stability.

Where a student shows exceptional performance in one or two areas of the curriculum, or where their overall performance is exceptional but they have socio-emotional problems that preclude them from acceleration, enrichment is carried out and the student can be assessed under flexible criteria that takes into account the role of learning styles (Mönks & Pflüger, 2005).

Despite all the requirements under law, according to Mönks and Pflüger (2005) there is little specific provision for gifted students in Spanish classrooms, although a growing interest in the area is noted. Despite the fact that schools are obliged by law to identify the special needs of students, neither identification criteria for gifted children nor the psychometric instruments to assess them have been standardised. The Centre for Talented Youth in Spain (a charter member of CTY International, which runs extra-curricular enrichment programs) has plans to develop a Talent Search along the lines of the US model, and such services may be offered to schools. Teacher training in Spain makes little reference to the topic of gifted/talented education, and although some administrations or professional associations offer such training the courses are infrequent. There is recognition in Spain that despite forging ahead in

make legislative provision for their students, there is now an urgent need for more funding and training and for improved identification measures.

Hungary

Hungary is one of the European countries that works hardest to serve its gifted and talented students and since the beginning of the 20th century special attention has been paid to highly able children by government, teachers and experts in education. Legislation in Hungary explicitly recognises special needs. In 1993 the public education law states “every student has the right of education, which corresponds to its interest, abilities and potential and which will enable him/her to continue the education on a higher level as far as he/she is capable of”. Responsibility for providing for gifted and talented students lies with teachers and schools and for identification and recognition of individual strengths and talents. Extra-curricular activities and enrichment are not only encouraged but also regulated by law and all schools are obliged to arrange them.

Acceleration is not common in Hungary, and instead respect is given to the homogeneity of learning groups. Only in private special schools is acceleration used as the norm, with enrichment preferred as a means to stimulate able learners. Extra-curricular activities, often held as afternoon workshops cover subjects as diverse as mathematics, foreign languages, science, the visual arts, music, sport, folk and classical dance and a range of folk arts such as weaving, dyeing, pottery and textiles. For students aged 14-18 the extra-curricular activities are more academically based but still contain opportunities to study subjects such as philosophy, film studies and history of art.

Within-school and external achievements are often used to identify children as gifted/talented and teacher nomination is also widely accepted as a criterion, reflecting the value that is placed on the teacher’s role in nurturing talent. “Education of the gifted” is one of the main topic areas of the teacher-training curriculum and includes the following topics:

- Identification
- Giftedness and age
- Giftedness and creativity
- School programmes for gifted children

- The cooperation of school and family
- Underachievement of gifted children
- The special role of teachers in gifted education
- Special fields (e.g. sport, music, math)
- The international picture in gifted education

Internal in-service training also focuses regularly on dealing with gifted/talented children.

Scandinavia

Freeman (2001) surmises that it is highly unlikely that the Scandinavian countries will ever conceptualise giftedness and talent in the way that the US and UK do. The educational philosophy is rooted in the cultural values of modesty and egalitarianism, and it is regarded as somewhat improper to claim personal privileges (Persson, 1998). Freeman suggests however that Scandinavian classrooms are beginning to adopt Gardner's theory of Multiple Intelligences as a way to move forward and extend provision for all, and to bypass the ethical dilemma posed by provision for the highly able. In Sweden the rights and welfare of every student have been safe-guarded in the classroom since the 1920's, but special needs have only been recognised in the domains of learning disabilities or physical and psychological disorders. High ability has never been earmarked as an educational issue and some would think it unethical to argue for extra provision for achievers (Persson, 1998). Despite the lack of explicit provision for gifted/talented children, it seems that in some areas opportunities have long been available. Almost all Swedish towns and cities have dedicated music schools for all ages, and secondary schools devoted to developing music and sport. Basic proficiency is usually required for entry, but selection is based on interest rather than special ability. It seems that the situation is roughly similar in all Scandinavian countries, although Finland is more open to ideas of acceleration and enrichment. Further, while explicit provision may not be available, the Scandinavian countries advocate personalised learning that is tailored to each individual - a notion that has cropped up in the recent White Paper on education in England and is considered to have important implications for gifted/talented learners. In the Third International Mathematics and Science Study (TIMSS, 1999), Sweden and Denmark were among

the top performing countries, despite having virtually no provision for the most able. Attitudes to education in Scandinavia differ greatly from those in the UK and Ireland also. Teaching is a very well-paid and highly respected profession and a greater number of students in Scandinavian countries aspire to be teachers than in the UK. This cultural respect for learning may also go some way to ameliorate the lack of resources aimed at the talented. It appears that plans are afoot in Sweden to bring the issue of high ability to the fore, and to initiate teacher training schemes leading to the award of a diploma from the European Council for High Ability.

Russia

Russian education has undergone huge changes since the era of perestroika and the end of Communism. In what might seem to be a contradiction of Communist ideals the Soviet system of teaching the talented ensured that the brightest minds enjoyed tuition in private boarding schools, better teachers and ultimately went on to study at more prestigious universities and gain desirable jobs. Similarly those talented in the arts or sports often endured gruelling training in the pursuit of excellence. However, education of the gifted was seen as a way to benefit society as a whole, and to promote progress. The personal development of the individual was only placed third on the list of priorities. These dedicated schools for the gifted still flourish, although on the whole provision for the gifted is provided through enrichment and extension activities in schools. However funding is often a problem and it is usually only the most gifted students who can avail of these services. The nature of the curriculum in Russia has changed in the past 25 years, making it much more open to study of the arts and humanities, thereby catering for students whose interests and aptitudes lie outside the domain of science and mathematics. In-service training for teachers, though available is often patchy, and the extent to which teachers promote individualised learning and differentiation really depends on the teacher and their own personal workload. As in many other countries there are a number of extra-curricular courses run in conjunction with universities in Moscow and St. Petersburg, and perhaps the most spectacular is the Summer School of Cosmonauts in the city of Krasnoyarsk.

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Appendix 1 – Information on Gifted and Talented Education on the World Wide Web and in print

Gifted and Talented on the World Wide Web

Associations, Publications and CPD

Associations

Global

- European Council for High Ability (ECHA) – www.echa.ws
- World Council for Gifted and Talented Children (WCGTC) - www.worldgifted.org

United Kingdom

- National Academy for Gifted and Talented Youth (NAGTY) – www.nagty.ac.uk
- Children of High Intelligence Support Society (CHI) - www.chi-charity.org
- National Association for Able Children in Education (NACE) - www.nace.co.uk
- National Association for Gifted Children Britain (NAGC) - www.nagcbrtain.org.uk
- Scottish Network for Able Pupils (SNAP) - www.ablepupils.com
- Specialist Schools Trust - www.specialistschools.org.uk

Ireland

- Irish Association for Gifted Children (IAGC) - <http://homepage.tinet.ie/~iagc/iagc.htm>
- Irish Centre for Talented Youth (CTYI) - www.dcu.ie/ctyi/

United States

- American Association for Gifted Children at Duke University (AAGC) - www.aagc.org
- Appalachian Institute for Creative Learning (AICL) - www.sigc.org
- Arizona Association for Gifted and Talented (AAGT) - www.azagt.org
- California Association for the Gifted (CAG) - www.cagifted.org
- Advocacy for G&T in New York State
- Center for Gifted Education Virginia (CFGE) - <http://cfge.wm.edu>

- Centre for Gifted Studies - www.wku.edu/gifted
- Center for Talented Youth, Johns Hopkins University, Baltimore (CTY) - www.jhu.edu/gifted/
- Davidson Institute for Talent Development (DITD) - www.ditd.org
- Duke University Talent Identification Program (North Carolina) - www.tip.duke.edu
- Georgia Association for Gifted Children (GAGC) - www.gagc.org
- Gifted Child - A Center for Evaluation of Gifted Children - www.a-gifted-child.com
- Governor's Program for Gifted Children Louisiana (GPGC) - www.gpgc.org
- Hollingworth Center for Highly Gifted Children - www.hollingworth.org
- Illinois Association for Gifted Children (IAGC) - www.iagcgifted.org
- Kansas Association for the Gifted, Talented and Creative (KGTC) - www.kgtc.org

- The National Foundation for Gifted and Creative Children (NFGCC) - www.nfgcc.org
- New Jersey Association for Gifted Children (NJAGC) - www.njagc.org
- Ohio Association for Gifted Children (OAGC) - www.oagc.org
- Pennsylvania Association for Gifted Education (PAGE) - www.penngifted.org
- Ricks Center for Gifted Children (University of Denver) - www.du.edu/ricks
- Texas Association for Gifted and Talented (TAGT) - www.txgifted.org

Canada

- The Academy for Gifted Children (PACE) - www.pace.on.ca
- Association for Bright Children of Ontario (ABC) - www.abcontario.ca
- Gifted Canada - www3.telus.net/gifted/canada
- Gifted Childrens Association of British Columbia (GCABC) - www.gcabc.ca
- Gifted Resource Center of New England (GRCNE) - www.grcne.coma

Australia

- Gifted and Talented Children's Association of South Australia (GTCASA) – www.gtcasa.asn.au
- New South Wales Association for Gifted & Talented Children Incorporated (NSWAGTC) – www.nswagtc.org.au
- The Queensland Association for Gifted and Talented Children Incorporated (QAGTC) - www.qugtc.org.au
- Gifted Education Research Resource and Information Center (GERRIC) - <http://gerric.arts.unsw.edu.au/>
- Gifted Children Australia – www.gifted-children.com.au
- Papers on giftedness from the Faculty of Education at the University of Melbourne - <http://www.edfac.unimelb.edu.au/eldi/selage/publications/index.shtml>

New Zealand

- New Zealand Gifted and Talented Community News - <http://www.tki.org.nz/e/community/gifted/>
- Hoagies Gifted Education Page – www.hoagiesgifted.org

International research Centres:

Research - UK

- Oxford Brookes University Research Centre for Able Pupils - www.brookes.ac.uk/schools/education/rescon/randc.html
- National Academy for Gifted and Talented Youth - www.nagty.ac.uk/research_centre/index.aspx
- Brunel Able Children's Education Centre (BACE) - <http://www.brunel.ac.uk/about/acad/sse/ssesub/education/bacehome/bacegifh>

Research - International

- Centre for Talented Youth - Johns Hopkins University - www.jhu.edu/gifted
Information for students, parents and educators.
- Information Center on Disabilities and Gifted Education
<http://ericec.org/>
Discussion groups, fact sheets and digests.
- The National Research Center on the Gifted and Talented (NRC/GT)
www.gifted.uconn.edu/nrcgt.html
Latest news about the NRC's research along with downloadable resources

Online Publications and Helpful Advice

- DfES Gifted and Talented Unit - www.standards.dfes.gov.uk/giftedandtalented/
- London Gifted and Talented - www.londongt.org/
- Gifted and Talented Cybersource - www.gt-cybersource.org
Large range of articles and resources dealing with all aspects of giftedness. Highly recommended
- G&T Wise – support for teacher of the gifted and talented
www2.teachernet.gov.uk/gat/

Teacher CPD

- **DfES**
<http://www.standards.dfes.gov.uk/giftedandtalented/goodpractice/cs/>
Gifted and Talented Good Practice Case Studies
- **Oxford Brookes University**
<http://www.brookes.ac.uk/schools/education/rescon/cpdgifted/home.html>
G&T Professional Development
- **Gifted Education Online Professional Development Package.** Developed by Prof. Miraca Gross, a leading expert in the field of gifted & talented education, this is an excellent resource.
http://www.dest.gov.au/sectors/school_education/publications_resources/profiles/Gifted_Education_Professional_Development_Package.htm
- **QCA**
<http://www.nc.uk.net/gt/pe/index.html>
Guidance on Teaching the Gifted and Talented
- **TDA**
<http://www.tda.gov.uk>
The Training and Development Agency for Schools
- **Teachers TV**
www.teachers.tv/
- **European Council for High Ability**
<http://www.echa.ws/modules/content/index.php?page=1>
-

Publishers

- Free Spirit Publishing – a large range of titles suitable for children, teachers and parents of gifted/talented children. www.freespirit.com
- Great Potential Press – this company publishes a wide range of books dealing with various aspects of giftedness, including parenting, diagnosing disabilities and dealing with emotional issues. www.giftedbooks.com

Appendix 2 – List of extra-curricular activities and enrichment ideas available on the World Wide Web for Gifted and Talented Students

Chess

Irish Chess Union

www.icu.ie

Bangor Chess Club

www.bangorchessclub.org.uk

Ulster Chess Union

www.ulsterchess.org

Languages

www.eurolingua.com

The Sandford Language Institute, Dublin

www.sandfordlanguages.ie

Spanish

Instituto Cervantes, Dublin

<http://dublin.cervantes.es/>

French

Alliance Francaise

www.alliance-francaise.ie

NICILT French Debating Competition

<http://www.qub.ac.uk/edu/nicilt/fd/fredebate.htm>

German

Goethe Institute

www.goethe.de/ins/ie/dub/enindex.htm

NICILT German Debating Competition

<http://www.qub.ac.uk/edu/nicilt/gd/gerdebate.htm>

Italian

Italian Cultural Institute

www.italcult.ie/

Scouts, Guides and Brownies

Girl Guides

www.girlguiding.org.uk

www.girlguidingulster.org.uk

www.irishgirlguides.ie

Girl's brigade

<http://gofree.indigo.ie/%7Egbirelnd/>

<http://www.gbni.co.uk>

Catholic Girl guides of Ireland

www.girlguidesireland.ie

Brownies

www.girlguiding.org.uk/members/brownies/

www.irishgirlguides.ie/members/brownies/index.htm

Scouts, Cubs and Beavers

www.scouts.org.uk

www.scouts.ie

<http://www.scoutsni.com>

<http://www.scoutingireland.com>

First Aid and Civil Defence

Red Cross

www.redcross.ie

www.redcross.org.uk

Order of Malta

www.orderofmalta.ie

St. John's Ambulance of Ireland

29 Upper Leeson Street, Dublin 4, Telephone (01) 6688077.

St. John's Ambulance - UK

www.sja.org.uk

Civil Defence Ireland

www.civildefence.ie

Civil Defence is an organisation comprising of approximately 6000 members who voluntarily make themselves available in their spare time. The classes are in many disciplines during this training period. The skills which they require include First Aid, Search and Rescue, Fire Fighting, Boating Techniques, Radiation Monitoring, Radio Communications and Welfare Provision. They operate a large schools programme.

Competitions

Duke of Edinburgh Award

www.theaward.org/

The Duke of Edinburgh award is a voluntary personal development challenge open to young people aged 14 to 25. It is non-competitive – each individual selects their own appropriate level of challenge – flexible and achievement focused.

Gaisce Presidents Award

www.gaisce.ie

The President's Award is Ireland's National Challenge Award, the country's most prestigious and respected individual award programme, and a challenge from the President of Ireland, to young people between 15 and 25 years of age.

Texaco Children's Art competition

www.texacochildrensart.com

Credit Union art competition

www.creditunion.ie

IBM/DCU Irish Science Olympiad

www.dcu.ie/olympiads/

Open to all Irish second-level students on both sides of the border. The Olympiads take place at Dublin City University in Mathematics, Physics, Chemistry, Biology and Computer Programming.

Creative Writing competitions listed at

www.dublinwritersfestival.com/

Round Table Leader's Competition –Northern Ireland and the Republic

www.rotary.ie

www.rotary.org

The Rotary Youth Leadership competition is sponsored by Marks and Spencer and is open to students between fifteen and nineteen years old. It rewards young people who

have shown leadership skills in their school and community. The competition is held at local and regional level and the ultimate prize is a sponsored visit to the European Parliament in Strasbourg, where winners take part in the Euroscola event. This is when 500-600 young people from all over the EU participate in a multi-lingual, parliamentary-type experience.

Information on cultural exchanges are also on the Rotary Club website

BT Young Scientist & Technology Exhibition

www.btyoungscientist.ie

Environment, Science and Nature

Make and Do Nature Projects using recycled materials

www.blackrockec.ie/environment/makedo.htm

Science.ie

Science.ie is a resource for people of all ages who are interested in science. It brings together information on many areas of science, engineering and technology in Ireland for students, parents and teachers amongst others.

www.science.ie

Neuroscience for Kids

Great website exploring the brain and nervous system, as well as the current research in neuroscience

<http://faculty.washington.edu/chudler/neurok.html>

ENFO

Information on the environment

www.enfo.ie

Lots of teaching materials, information on schools programme, exhibitions etc.

Archaeology in the Classroom

www.lec.ie/archeology/05index.htm

An Taisce – Ireland’s Largest Independent Environmental Charity

www.antaisce.org

Lots of resources and activities. Hosts a number of competitions including the European Young Reporters for the Environment Competition

Science and Astronomy

Science experiments at home

www.madsci.org/experiments/

Astronomy website

www.theguardians.com/index.html

Armagh observatory

<http://star.arm.ac.uk/home.html>

Armagh Planetarium

<http://www.armaghplanet.com/>

Astronomy Ireland

<http://www.astronomy.ie/>

Dunsink Observatory

Ireland's oldest scientific institution, based in Castleknock, Dublin 15

<http://www.dunsink.dias.ie>

NASA

www.nasa.gov

NASA kids

<http://kids.msfc.nasa.gov/>

Neuroscience for Kids

<http://faculty.washington.edu/chudler/neurok.html>

Mathematics

Nrich Maths site
www.nrich.maths.org.uk

Animals

Dog training and handling classes
www.dogtrainingireland.ie

Feebeg Kennels and Dog training
www.feebeg.com

The City of Belfast Dog training Club
<http://www.belfastdogtraining.tk>

Glandore Dog Training Club of Ulster (Antrim)
<http://www.glandore.org.uk>

Copperbirch Dog Training Centre (Armagh)
<http://www.copperbirchthedogpeople.co.uk>

Zoos

Dublin Zoo
www.dublinzoo.ie

Belfast Zoo
www.belfastzoo.co.uk

Fota Wildlife Park
www.fotawildlife.ie

Charities and Other organisations

Irish Society for Prevention of Cruelty to Animals

www.ispca.ie

Ulster Society for Prevention of Cruelty to Animals

www.uspca.co.uk

Dog's Trust Charity

www.dogstrust.org.uk

Cat's Protection Charity

www.cats.org.uk

Irish Animals

www.irishanimals.ie

Irish Kennel Club

www.ikc.ie

Dog Club

www.dogclub.co.uk

Music

Orchestras

National Youth Orchestra

www.nyoi.ie

Irish Association of Youth Orchestras

www.iayo.ie

Ulster Youth Orchestra of Northern Ireland

www.uyo.org.uk/

European Association of Youth Orchestras

www.eayo.org/

EAYO assists in the promotion and development of youth orchestras and National Youth Orchestra Associations throughout Europe and is a Forum for Youth Orchestra activities at European level.

Cross-Border Orchestra

www.crossborderorchestra.ie

Choirs

Association of Irish Choirs/Cumann Naisiunta na gCor

www.cnc.ie

Cork International Choral Festival

www.corkchoral.ie/index.htm

Cathedral Youth Choir, Waterford

<http://homepage.eircom.net/~smcdonald/cyc/links.html>

Royal Irish Academy of Music

www.riam.ie

Traditional Music

Comhaltas Ceoltoiri Eireann

<http://www.comhaltas.com>

Music Network of Ireland

<http://www.musicnetwork.ie/>

Sonic DJ Academy

Classes for beginners and those who wish to improve their DJ skills, with well-known DJs and producers.

<http://www.sonic-dj-academy.com/>

The Contemporary Music Centre

www.cmc.ie/index.cfm

The Contemporary Music Centre is Ireland's national archive and resource centre for new music, supporting the work of composers throughout the Republic and Northern Ireland.

Blast

www.blast.ie

Largest Alternative Music Arts Community

The Federation of Music Collectives

www.fmc-ireland.com/

The Federation of Music Collectives (fmc) is a cross border umbrella group for music collectives in Ireland. The fmc aims to promote, encourage and develop the work of music collectives, to facilitate those already in existence and to help in the start up of

new groups. The fmc also plays an important role in providing information and advice to all facets of music and to act as one of the voices for the grass roots sector of popular music in Ireland.

Drama

Betty-Ann Norton Theatre School

www.bettyann-nortontheatreschool.com

Rainbow school of performing arts, Belfast

www.youthaction.org/rain_rain.htm

Youth-Music-Theatre UK – Northern Ireland Branch

www.youth-music-theatre.org.uk/northern_ireland.html

Belfast Community Circus

www.belfastcircus.org/

Lyric Theatre, Belfast

www.lyrictheatre.co.uk/

Abbey, Dublin

www.abbeytheatre.ie

Stagecoach Theatre Schools, Dublin & Belfast

www.stagecoach.co.uk/stagecoach/html/locations.php?cid=2

Gaiety School of Acting

www.gaiety.school.com/

Playhouse Theatre, Derry

www.derryplayhouse.co.uk

Gate Theatre, Dublin

www.gate.ie

Lambert Puppet Theatre

www.lambertpuppettheatre.com

Lambert Puppet Theatre is a venue and puppet company based in Monkstown Co. Dublin. The Lambert Puppet Theatre creates and presents its own productions at the Theatre

Buí Bolg

www.buibolg.com

Bui Bolg Productions, a Wexford based company, has been responsible for much of the countries more spectacular outdoor events in recent years.

National Youth Arts Programme

www.youtharts.ie

The Mermaid Arts Centre

www.mermaidartscentre.ie/

The Mermaid Arts Centre in Wicklow presents an ambitious programme of performance including innovative dance, spellbinding theatre, cutting edge music and art-house cinema.

Wheelworks

WheelWorks exists to provide artistic and creative opportunities to young people in Northern Ireland. We seek to increase the artistic, social and cultural inclusion of young people who live in urban and rural communities who experience barriers to participating in the arts.

www.wheelworks.org.uk/

National Performing Arts School

www.npas.ie/

Smashing Times Theatre Company Ltd

www.smashingtimes.ie

Smashing Times Theatre Company is a professional theatre company that is committed to: presenting high quality and innovative theatre productions and projects

that have genuine relevance to audiences, using professional drama and theatre practise to explore social and political issues relevant to people's lives with a particular interest in portraying the wide and varied spectrum of women's experiences.

CentreStage Theatre School

www.centrestageireland.com

CentreStage Theatre School, was established in Limerick, Ireland in 1996 and it's pupils have become very prominent contributors to the theatrical landscape of time.

The CentreStage Mission Statement:

To encourage creativity, individuality and a love for Theatre and the performing Arts. Introduce and enhance acting skills through participation and self expression. Help build self-confidence and allow personal development in a safe, friendly and creative environment

YouthArtsOnline

youthartsonline is a dedicated directory or "portal" aimed both at young people who want information about opportunities in the arts wherever they live in the UK and youth arts practitioners and organisations who want to provide young people with information about workshops, training, courses and events.

www.youthartsonline.org/

Baboro International Children's Arts Festival

Baboró International Arts Festival for Children in Galway is recognised as the leading Irish arts festival devoted exclusively to children. For the last seven years, one week in October has been devoted to presenting high quality national and international arts performances and workshops for children in and out of schools and families. Venues in and around Galway are used for the presentation of this festival with selected artists travelling out to county schools, youth centres and community centres.

www.baboro.ie/

CREATE

CREATE is a resource and enabling organisation that provides support services for arts development and practice in Ireland. Services - focused on standards of practice and sustainable development - are aimed at arts practitioners, arts organisations and arts projects irrespective of their area of practice or programme.

www.communityartsireland.com/home.htm

Blast UK

Blast aims to inspire 13-19 year-olds to bring creative ideas to life by offering new and stimulating experiences and building their confidence and know-how through professional support. Through local and national media (TV, radio, online) and face to face activities Blast aims to inspire, nurture and showcase young people's creative ideas across the UK, focussing on music, dance, art, film, writing and digital creativity.

www.bbc.co.uk/blast/

Blast Northern Ireland

www.bbc.co.uk/northernireland/schools/11_16/blastni/

Dance

Dance Northern Ireland

www.dancenireland.com

Dance Theatre of Ireland

www.dancetheatreireland.com

Daghdha Dance Company

www.daghdha.ie

Daghdha Dance Company is a group of active, highly skilled artists based in Limerick, dedicated to a rigorous discourse in dance, choreography, arts and culture. Daghdha's fresh thinking is embodied in all fields of activity, from performance to education, research to outreach.

Dance Theatre of Ireland

www.dancetheatreireland.com/

In the decade since its inception, Dance Theatre of Ireland has exemplified excellence and innovation in choreography, music & design. Featuring the work of its Artistic Directors Robert Connor and Loretta Yurick and distinguished international guest choreographers, it has developed a reputation for producing dance theatre which is passionate, evocative, sophisticated yet arrestingly pure - exciting dance which is at times both fierce and uplifting.

Streets Ahead Dance

www.streetsaheaddance.com

Streets Ahead Dance & Performing Arts has just opened a state of the art full time dance facility in Santry, North Dublin. The school features 5 mirrored studios with sprung floors, a cafe, changing facilities & parking. There are classes for children & adults of all ages in hip-hop, drama, break-dance, belly-dancing with other styles such as ballet, tap, salsa & singing on the way.

Writing

The Irish Writers' Centre

www.writerscentre.ie/

The Irish Writers' Centre was founded in 1991. The aim of the centre is to foster writing and an audience for literature in Ireland, and this it does by a year-round programme of readings, workshops, lectures and seminars as well as a range of support and information services.

The Children's Book Festival

Run by Children's Books Ireland, the book festival takes place every year in October

www.childrensbooksireland.com

Poetry Ireland

www.poetryireland.ie/

Poetry Ireland is the national organisation dedicated to developing, supporting and promoting poetry throughout Ireland. They are a resource and information point for any member of the public with an interest in poetry and work towards creating opportunities for poets working or living in Ireland.

Festival of World Cultures

www.festivalofworldcultures.com

Dun Laoghaire International Poetry Competition / Comortas Feile Filiochta

Categories for under-12 and under-17 in both Irish and English

www.dlrcoco.ie/library/Feile04/Home.htm

IrishWriters Centre

www.writerscentre.ie

News of creative writing course and a large list of poetry, fiction and drama competitions open to young people

Children's Express is a charity which provides a unique news agency across the UK.

Young people aged 8-18 produce articles on issues which matter to them. The programme helps and encourages young people to research and write stories for publication in local and national newspapers, magazines, television and radio.

http://www.childrens-express.org/young_people/kbbelfast.htm

Museums

The Ark – A Cultural Centre for Children

www.ark.ie

W5

www.W5online.co.uk

National museum of Ireland

www.museum.ie

Museum of Natural History

www.museum.ie/naturalhistory/

National Gallery

www.nationalgallery.ie

Hugh Lane Gallery Kids Club

www.hughlane.ie/education/kidsclub/about.html

Cookery

Cookery classes for kids:

Ballyknockan House, Wicklow

www.ballyknocken.com/

Who's Cooking, School of Cookery, Belfast

www.whoscooking.co.uk

Junior Chef Cookery School

www.juniorchef.ie

Uncle Ben's Schools Cookery Competition

<http://www.unclebens-schoolscookery.com/>

Art, Photography and Film

Irish Museum of Modern Art

www.modernart.ie/

The Education and Community Programme at the Irish Museum of Modern Art is an integrated part of the Museum's overall structure. All programmes and projects are designed to place participants on an equal footing with artists, creating a forum where artists can meet people and people can meet artists, where meaningful exchange can take place, so that both parties acquire new understandings of issues explored.

Sculptors Society of Ireland

www.sculptors-society.ie

The Sculptors' Society of Ireland (SSI) is an all Ireland membership body for professional visual artists. Many of the artists who are members of the Society work with young people as part of their practice, covering a range of media from traditional sculpture, to photography, video, installation, performance, ceramics, crafts etc.

Please contact the Society for information on artists in your area.

Fresh Film Festival

This is a unique event in the Irish Cinematic Calendar. Now in its sixth year, the Fresh Film Festival caters solely for a youth audience and has at its core the distinctive Irish Schools Video Competition which holds creativity as its maxim. The festival is non-profit making, aimed specifically at the 12 to 18 age-group and takes place in Limerick each Spring.

www.freshfilmfestival.net/

The Irish Film Institute

www.irishfilm.ie/

The Irish Film Institute preserves, presents and promotes film culture in Ireland. This year the schools section reached an annual audience of more than 8,000 students, providing in excess of fifty screenings of films in an educational context, workshops, educational materials, school visits and teacher training programmes. The department caters for both primary and secondary levels of the Irish education system.

Deaf

Deaf - Dublin Electronic Art Festival - now has a section for younger people called Deaf Junior. More details at their website.

www.deafireland.com

The Digital Hub

www.digitalhub.com

The Schools Programme of the Diageo Liberties Learning Initiative seeks to develop a range of programmes in the local primary and second level schools aimed at addressing the digital divide. These include providing Information and Communication Technology (ICT) equipment and technical support to local schools; providing professional training to teachers so they are fully informed about the education benefits of ICT, and advising and informing the schools of employment opportunities in the digital sector. The Schools Programme aims to equip local

children with the skills needed to live in a digital age, and to work in the digital media industry, which will be located on their doorstep.

The AmmA Centre

AmmA is a Southern Education and Library Board multi media creative learning centre. Digital technology and traditional media can be used by organisations and individuals from schools, the youth sector and the community. Skills and creative ideas can be developed and produced in film and animation, music and sound, web and graphic design, traditional art media and digital photography.

www.ammacentre.org

Studio ON

Studio ON is a new creative learning centre. It is run by The Nerve Centre and the South Eastern Education and Library Board. Located on the site of the former O'Neill Primary School at Crossnacreevy, Studio ON provides young people with an accessible and interactive space for training and experimentation in creative learning, new media and the arts.

<http://www.studio-on.org.uk/index.html>

Cinemagic Festival

www.cinemagic.org.uk

Belfast Film Festival

www.belfastfilmfestival.org

Foyle Film Festival

www.foylefilmfestival.org

Irish Museum of Modern Art

www.modernart.ie

Linenhall Library

www.linenhall.com

I am an artist website

www.iamanartist.ie

Produced in conjunction with primary school teachers and aimed at primary school students

HP Digital Imagination Challenge – Digital Photography competition

<http://h40132.www4.hp.com/digitalimagination/index.html>

RTE Weather Photo competition

www.rte.ie/weather/enter.html

ESB Environmental Photography Awards

(http://www.esb.ie/main/news_events/env_photo_index.jsp)

Sustainable Energy Ireland Photo competition

www.sei.ie

Belfast Exposed

www.belfastexposed.com

Photography classes and projects in the Belfast area.

Arts Council of Northern Ireland

www.artscouncil-ni.org

Architecture

The Royal Institute of Architects in Ireland

www.riai.ie/

The Irish Georgian Society

www.irisharchitecture.com/igs

Youth Organisations

International Youth Foundation

www.iyfnet.org/

Youth Action Northern Ireland

www.youthaction.org

Northern Ireland Youth Awards

www.ni-youthawards.org/

The Northern Ireland Youth Awards are being launched in 2005 as a way of recognising and celebrating the achievements, talents and energy of young people and those who work with them.

School Council

Union of Secondary Students of Ireland

www.ussonline.net

Student Councils of Ireland Online

www.studentcouncil.ie

Dail na n-Og - Youth Parliament

www.dailnanog.ie

Evening Classes

Nightcourses.com –comprehensive listings of night courses in Ireland

www.nightcourses.com

Queen’s University Belfast Institute for Lifelong Learning

<http://www.qub.ac.uk/schools/InstituteofLifelongLearning/>

Trinity College Dublin Evening Classes Prospectus available from

www.tcd.ie

Sport

Soccer Schools

www.sambasoccer.com

FAI Pepsi Summer Soccer Schools

<http://www.parcom-media.com/faipepsi/faipepsihome.htm>

Northern Ireland Soccer Camps

<http://www.nisccamps.com/>

European Football Camps

<http://www.footballcamps.co.uk/>

Gaelic Football

www.gaa.ie

Tennis

www.tennisireland.ie

www.ulstertennis.co.uk

Handball

www.handball.ie

Hockey

www.hockey.ie

www.hockeyulster.org

Ice Hockey

www.iiha.org

Rugby

www.irishrugby.ie

www.ulsterrugby.com

Basketball

www.basketballireland.ie

<http://www.ulsterbasketball.com>

Rounders

www.rounders.ie

Martial Arts

www.irishkarateunion.com

www.irishkarate.com

www.aikidoinireland.com

Community Games

www.communitygames.ie

National competition, not just for sport! Includes categories for choirs, drama groups and dance.

Public Speaking

Soroptimist Girls Public Speaking Competition

<http://kildare.ie/soroptimists/nnd/competition.asp>

UCD Literary and Historical Debating Competitions for Schools

www.ucd.ie/lnh/index.html

Gael Linn Debating Competition

<http://www.gael->

[linn.ie/useIrish/secondary.aspx?ProductID=SCEDIOS2&lang=En&areaCat=ACT002](http://www.gael-linn.ie/useIrish/secondary.aspx?ProductID=SCEDIOS2&lang=En&areaCat=ACT002)

Aoife Begley Memorial Debating Competition, National University of Ireland,
Maynooth
<http://www.minds.nuim.ie/~maynoothlnd/secschools/index.php>

Quizzes

Credit union quiz for Northern Ireland and Rep. of Ireland.
www.creditunion.ie

Irish Science Teachers Association Senior Science quiz
www.ista.ie

Volunteering

Volunteering Ireland and Volunteering Northern Ireland
Two large databases with a huge range of volunteering opportunities
www.volunteeringireland.ie
www.volunteering-ni.org

Conservation Volunteers Northern Ireland
www.cvni.org

Conservation Volunteers Ireland
www.cvi.ie

Cultural Exchanges

Experiment in International Living
Ireland: www.eilireland.org

Rotary International
www.rotary.ie

