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The National Academy for Gifted and Talented Youth:

Evaluation of the First Talent Search and Summer School

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Executive Summary

An evaluation was carried out of the first Talent Search mounted by the National Academy for Gifted and Talented Youth, and the Summer School attended by 100 students. The evaluation included questionnaires to three groups: successful applicants, those not successful, and those who had sought information but had not applied. Interviews were held with all tutors teaching on the Summer School, who were also observed when selecting students for their courses. A sample (n=32) of the students attending the Summer School were interviewed at the start and end of the 3 week period, and all 100 students were invited to complete an Exit questionnaire. Finally, the Interim Director, Vice Chancellor and DfES Project Manager were also interviewed.

The findings are presented around the key issues identified for the evaluation. These are followed by implications for the future.

a)   Findings

The process of determining eligibility to participate in Academy activities
➢ Determination of eligibility for the National Academy was affected by the relatively small percentage of applicants who had taken either the SAT1 reasoning test or the World Class test.
➢ The evidence made available by applicants was varied in nature and relevance, but often substantial enough to allow reasonable judgements
➢ However, the lack of a common metric produced difficulties in comparative judgements, both with respect to eligibility for the Academy and the distinction between the top 1% and 5%.

The effectiveness of the guidance provided for candidates.
➢ Effectiveness of providing guidance was compromised by the very limited time scale available and by lack of easy access to all secondary schools. Consequently coverage was not complete and many of those who might have applied were either put off or unable to meet the deadline of May 3.
➢ Nevertheless, over 2200 contacted the Academy and the information which was made available was generally found to be clear and accessible

The value of the SAT I Reasoning Test and the World Class Tests in identifying ability.
➢ The relative lack of applicants taking either of these tests has prevented an evaluation of their usefulness in the selection process.
➢ An informal testing of the Summer School students by the Academy itself, however, indicates that the SAT1 has potential as one element in a selection process.
➢ Other information on the students e.g. tutors' opinions, raises a different question with respect to validity. In brief, even if these tests are able to identify reliably a top 1% and top 5% in terms of the skills and knowledge measured, the relevance to a subject which calls upon different skills and knowledge (e.g. Creative Writing) will require further examination.

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> ➤ This issue may be particularly problematic when emphasis on the 'talented' increases.

The relative value of the different sources of possible evidence.
> ➤ Tutors for different course varied in the information they most valued
> ➤ The personal statement was one source that was particularly valued by some tutors
> ➤ Other sources are potentially useful but there is a need to train tutors in the interpretation of data sources with which they are unfamiliar, including Key Stage SAT results, psychologists' assessment reports
> ➤ There is a need to improve consistency of decision-making by standardising the data sources made available by each applicant

The overall success of the first Talent Search in identifying the academically gifted.
> ➤ The evidence from the tutors confirms that overall students attending the Summer School could justifiably be considered to be within the top 5% across subjects, and probably in the top 2%, although there was variation between courses and a wide spread of SAT1 scores.
> ➤ The data available do not allow further judgement on the objective criteria

The selection of students for the first Summer School and the overall composition of the student body.

> ➤ Selection of students for the Summer School was made problematic owing to the lack of a common metric to judge each applicant.
> ➤ Comparative judgements with respect to the distinction between the top 1% and 5% were also found to be problematic in a number of the subjects.
> ➤ In addition, tutors lacked training and knowledge of some assessment Information provided by applicants
> ➤ The selection processes were not consistent across the subjects; this was partly, but not entirely, due to tutors attempting to evaluate the information available in the context of their subject.

Overall success

> ➤ The limitations identified may reasonably be considered minor.
> ➤ In addition these may reasonably be considered appropriate in the context of an initial Pilot.
> ➤ As judged by the views and performance of the students, and also by the perspectives of other key commentators, the 1st Talent Search and 1st Summer School may justifiably be regarded as a significant success.

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b)   Implications for the Future Development of the National Academy

Following this evaluation the National Academy will grow and develop into a new phase. A major new element will be the involvement of other universities and the consequent growth in number of sites and numbers of students attending summer schools. A growth in the range of the courses offered will also bring challenges, including the development of courses for the 'talented' as well as 'gifted'.

To end this evaluation report, therefore, we highlight several specific issues for the Academy to consider as it moves into the new phase.

Increasing the number of universities

A major element of the success reported here was the commitment and dedication of staff. This was a University of Warwick initiative, actively supported by Vice-Chancellor, and drawing upon Warwick staff. In the next phase, this sense of ownership and commitment to the university will be diffused. However professional the staff working for the wider group of universities, it may reasonably be predicted that they will not experience the same level of commitment.

> ➢ Particular attention will need to be paid to engendering a sense of ownership. This is unlikely to be enough in itself and particular attention will need to be given to the tangible rewards for staff.

Sustainability

Linked to this point is the question of sustainability over the medium to long term (3-5 years plus). In particular, how long will academic staff be prepared to contribute to summer schools given their other commitments and career aspirations? This will interact with the issue of broadening the provider base.

> ➢ The Academy should consider the likely pattern of recruitment/continuation of staff.
> ➢ Flexibility of approach (e.g. level of academic from 'young and new' to 'senior and experienced') should be encouraged to optimise recruitment of staff who can perform well over several years.

Selection

The proposed system for separating selection for the Talent Search from that for Summer Schools is sound. The use of a portfolio will aid each. Schools will require more guidance, as will the young people with respect to their portfolio contents and personal statements.

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This separation will also facilitate tutors' selection for Summer School courses as they will be able more easily to match their proposed course content to the interests and abilities of applicants.

- ➢ The two selection processes (Talent Search and Summer Schools) should be separated.
- ➢ Tutors should provide information to applicants for Summer Schools to facilitate optimal match between applicants and providers.
- ➢ The Academy should continue to develop its portfolio approach rather than rely on standardized tests.
- ➢ If standardized tests (e.g SAT 1 Reasoning and World Class Test) are to be used, they should be consistent across the applicants and their added value should be assessed.

Duration of Summer School

We have found that a 3 week Summer School is certainly possible in the UK context. However, it should be recognised that there are limitations. The short summer break compared with that for US school students leaves little time, and a 3 week Summer School has a significant impact on family commitments. Also, while the students were positive about their experience, there were a number of concerns reported about the length.

- ➢ Consideration should be given to shorter Summer Schools, in particular a 2 week duration.

The '1%' and '5%'

This is both a conceptual and practical issue. In brief, the effectiveness of any cut off is only as good as the quality of the assessment and the validity of that distinction. Our study questions both.

- ➢ Consideration should be given to whether there is a need to identify '1%' and '5%' groups.
- ➢ If this distinction is to be maintained, its usefulness should be evaluated.
- ➢ Tutors may reasonably form judgments of the relative strengths and consequent differential needs of students at the end of Summer School.

Evaluation

We have identified the need for further evaluation of a range of aspects of the National Academy. We welcome the DfES's intention to support an evaluation.

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1.   BACKGROUND AND INTRODUCTION

1.1   Background

Historically, in Britain, the 60s saw a rise in research on children of high ability. With projects such as The Liverpool Project by Tempest in 1966 and the Brentwood Experiment in Essex in 1969 a shift in the public thinking and policy decision making regarding gifted and/or highly able pupils took place (Marjoram, 1997).

For many years, able students in British schools have been marginalised by the schools, LEAs and the government in terms of identification and provision (House of Commons Education and Employment Committee, 1999, p. v). This has been particularly problematic for students who already experience social disadvantage, further hindering their entitlement to high quality of education and access to opportunity.

Recently, there has been an increasing recognition that the educational needs of able students were not being adequately met resulting in a series of governmental educational initiatives aiming at improving the education of able students especially in inner cities. Specifically, the first government White paper 'Excellence in Schools' (DfEE, 1997) referred specifically to able students' education. That was followed by an Ofsted international survey (Freeman, 1999), the establishment of a national Advisory Group (Gifted and Talented Advisory Group), an enquiry into the education of the highly able by the Select Committee (House of Commons Education and Employment Committee, 1999) and a DfEE commissioned research by NFER on the national provision for able students.

A number of current developments aim at enhancing the educational provision of able students, namely:
 - The establishment of an 'Academy for Gifted and Talented Youth';
 - The white paper (DfES, 2001) with emphasis on meeting the needs of highly able students;
 - Ofsted inspection remit has expanded to consider school's provision for able students (Ofsted, 2001a);
 - The emphasis on 'access' and 'inclusion' in the revised national curriculum referring to the 'provision for all' according to their abilities, making support for able students a statutory responsibility.

1.2   Introduction

The National Academy for Gifted and Talented Youth (NAGTY) was instituted at the University of Warwick, funded by the Department for Education and Skills, and launched on 19th February 2002. The Centre for Educational Development, Appraisal and Research, CEDAR, was commissioned to undertake the evaluation of the Academy's first Talent Search and Summer School, held from 22 July to 9 August 2002. The Talent Search was intended to identify and recognise exceptional young people who are in the top 1% or 5% of pupils in England in terms of their academic ability. The first Summer School was planned to cater for 100 young people aged 11-16 years.

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This Evaluation Report covers the activities of the Academy from May until August. During this period we sought to address the following issues:

- The overall success of the first Talent Search in identifying the academically gifted.
- The relative value of the different sources of possible evidence.
- The effectiveness of the guidance provided for candidates.
- The process of determining eligibility to participate in Academy activities
- The selection of students for the first Summer School and the overall composition of the student body.
- The success of the first Summer School
- The value of the SAT I Reasoning Test and the World Class Tests in identifying ability.

1.2.1 Methodology

The range of questions required a variety of evaluation approaches including interviews, questionnaires and analysis of data collected by the National Academy.

Interviews Interviews were held with all tutors teaching on the Summer School, both at the time of selection of students for the Summer school, and after the Summer School had ended. Five of the six tutors were interviewed before the Summer School in order to establish their perceptions of the selection process; the drama tutor was not available to be interviewed beforehand. All tutors were interviewed following the Summer School.

Thirty two students were interviewed in pairs during their first and the last week of Summer School to talk about their experience, share their thoughts regarding the application process and the benefits and drawbacks from attending the Academy, and reflect on their future plans for maintaining links with NAGTY programmes.

Interviews were also held with the Interim Director, with the Vice-Chancellor of the University of Warwick, and with of the Department for Education and Skills, Project Manager of the initiative, about 6-8 weeks after the end of the Summer School.

Observation Observations were carried out of the selection processes for every subject at the Summer School, i.e. Maths, Creative Writing, Environmental Science, Drama, Philosophy and Chemistry. Two researchers observed selection procedures for Environmental Studies, Creative Writing and Chemistry; Mathematics (two sessions) and Drama were observed by one researcher. It was not possible to organise observation of the Philosophy selection process**.**

Questionnaires Questionnaires were sent to three groups:
- ➢ Those who had applied for information but had not sought to be registered with the Academy
- ➢ Those applicants who had been unsuccessful in their application
- ➢ Those applicants who had been successful received two questionnaires, the first sent prior to the Summer School, the second given out on the last day.

Data Analysis Further analysis was undertaken of the National Academy's database. This allowed examination of the information collected and recorded

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electronically by the Academy including demographic information, test scores (if any), school.

1.2.2 The Report

This report is organised around three main themes: the application process, the selection process, and the Summer School. In each section we present information form all relevant data sources. Further information including technical information is provided in the Appendix. Finally we provide the reflections of the Interim Director, Vice Chancellor and DfES Project Manager on the first Talent Search and Summer School and our own conclusions.

In addition, we were given access to the data from the SAT1 tests (Verbal and Mathematical Reasoning) administered by the Academy to the participants at the end of their Summer School.

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2. APPLICATIONS

2.1 Information and processes

2.1.1 Non-applicants

Although about 2200 are reported to have made enquiries to the Academy, only about 550 actually applied by the deadline. The following data are derived from the responses of 56 non-applicants of the 300 randomly selected who were surveyed.

Table 1:   Non applicants' views on information and selection criteria

	How clear did you find the information sent to you? %	Do you think that the selection criteria were suitable? %
Very	14.8	9.3
Somewhat	72.2	70.4
Not very	13	18.5
Not at all	0	1.9

Most non-applicants felt the information they received was very or somewhat clear, with a substantive minority finding the information not very clear, suggesting that communication could be improved (Table 1). Selection criteria were judged as very or somewhat suitable by 79.7%, with 20.4% judging them unsuitable. When asked what selection criteria respondents would have preferred, the majority did not give a response, but of those that did the main request was for more testing, both general and subject-specific. Other comments were that the criteria seemed to suggest that one had access to a PC, while another respondent would prefer selection criteria for which no cooperation from school would be necessary.

Table 2: How non-applicants first heard about the academy

	How did you first hear about the academy? %
Parents/guardian	41.5
Another relative	9.4
Family friend (adult)	0
Teachers	3.8
Home or college tutor	0
National press	35.8
Internet	3.8
Friends (own age)	0
Other	5.7

Most respondent had heard about the academy from their parents or relatives (50.9%) or through the national press (35.8%) – see table 2. The main reasons stated for not applying were that the information/application pack was received too close to the

deadline or that the student fell outside of the age range (usually too young). Other commitments (holiday/gifted programme at own school) were also occasionally cited. Ninety per cent of respondents said they would be applying for the summer school in future, however. (N.B. There is a likelihood that respondents to the questionnaire have a higher probability of being positive towards the Academy and wishing to apply in future compared to non-respondents, as this may be one of the reasons they were willing to complete the questionnaire).

2.1.2 Unsuccessful Applicants

The following responses are derived from 215 respondents to the questionnaire for 'unsuccessful' applicants of the 439 randomly selected. Owing to the coding system used by the National Academy it was discovered that a number of applicants recorded as 'unsuccessful' had been accepted by the Academy, but had chosen not to apply for the Summer School, most typically because it clashed with previously arranged summer holidays. Although this was unfortunate in terms of the purity of the intended sample, it did provide the opportunity for serendipitous discussion, by phone and email, with a number of parents who contacted us. These parents were almost unanimously highly positive about the setting up of the National Academy and looked forward to their child's future involvement. In addition almost all made positive comments about the Academy's early stages being evaluated and the evaluation itself as they had experienced it (Table 3).

Table 3:   Unsuccessful applicants' views on the application process

	How easy was it to send for an application form? %	How easy was it to complete the application form? %
Very easy	40.7	13.7
Easy	54.1	66.0
Difficult	5.2	17.5
Very difficult	0	2.8

Most respondents found it easy to send for an application form, but less easy to complete the form, over 20% finding this difficult.

Table 4:   Unsuccessful applicants' views on the selection criteria

	Do you think that the selection criteria were suitable? %
Very suitable	8.2
Suitable	80.1
Unsuitable	9.7
Very unsuitable	2.0

The vast majority of unsuccessful applicants saw the selection criteria as suitable, with a smaller number seeing them as very suitable or unsuitable (Table 4). When those who saw the criteria as unsuitable were asked for their reasons, the main issue was lack of clarity as to what the selection criteria were. The second most common remark

was to use NC test results and set additional tests for all, although on the other hand a few respondents felt that there was too strong a focus on test results.

Table 5: How did you first hear about the academy?

	How did you first hear about the academy? %
Parents/guardian	16.4
Another relative	0.9
Family friend (adult)	0.5
Teachers	58.4
Home or college tutor	0%
National press	18.2
Internet	2.3
Friends (own age)	0.5
Other	2.8

In contrast to the non-applicants, the majority of unsuccessful applicants had heard of the summer school from their teachers rather than parents (Table 5). National press was the second most prominent category (although again lower than among non-applicants), while parents made up most of the remaining replies.

Table 6   Unsuccessful applicants' reasons for applying to the Academy

	Why did you apply to the Academy? (number of mentions)
help me with my personal interests or hobbies	105
help me with my school work	114
help me prepare for my chosen career	91
My parents encouraged me to apply	125
My school, teachers or tutor encouraged me to apply	106
It was something to do over the summer holidays	48
Other	38

Help with personal hobbies or interests, schoolwork, career preparation, and encouragement from parents and teachers were all frequently mentioned as reasons to apply to the summer school, with no significant differences between them. Something to do over the holiday and 'other' reasons were mentioned less often (Table 6).

2.1.3 Successful Applicants

Most applicants to the Academy also wished to be considered for the first Summer School. Those who were successful were asked to comment on both. The following data are derived from the 77 respondents to the questionnaire out of the 97 attenders throughout the Summer School.

Table 7: Applicants' views on applying for the summer school

	How easy was it to send for an application form? %	How easy was it to complete the application form? %
Very easy	43.0	18.4
Easy	52.8	72.4
Difficult	4.2	9.2
Very difficult	0	0

Respondents felt that the application form for the Academy was easy or even very easy to send for, and mainly easy to complete; only 9% of successful applicants found it difficult to complete (Table 7).

Table 8: Applicants' views on the selection criteria

	Do you think that the selection criteria were suitable?
Very suitable	21.3%
Suitable	72%
Unsuitable	6.7%
Very suitable	0%

The vast majority of respondents felt that the selection criteria were suitable (72%), while over 21% felt they were very suitable, as shown in Table 8. Unsurprisingly these percentages are higher than those among not-selected applicants. Obviously, in view of this general satisfaction with the selection criteria, not many comments were given on how to improve selection. The only response mentioned more than once (3 times) being a request for common standardised tests for all respondents.

Table 9: Applicants' views on finding out about the Academy

	How did you first hear about the academy? %
Parents/guardians	28.6
Other relatives	2.6
Family friend (adult)	1.3
Teachers	46.8
Home/college tutor	0
National press	15.6
Internet	0
Friends (own age)	2.6
other	2.6

As can be seen in Table 9, most successful applicants had heard about the Academy from teachers, parents or the national press in that order. In comparison with unsuccessful applicants significantly more non-applicants had heard about the

Academy from parents/guardians; compared to non-applicants far successful applicants had heard about the summer school from teachers.

When interviewed at the Summer School students referred to a wide range of sources for obtaining information. Many said that their parents provided the initial information regarding this programme as well as the encouragement to search and locate specific information via the Internet or other media, e.g., newspapers. Statements such as ' My mother who works in a College got a leaflet', ' my dad is involved in all these sort of societies…and he just came home one day and said -oh the government is running this thing', 'my mother told me, she is doing a PhD at Warwick so she knew about it', and 'My parents were dead excited and they encouraged me to do what I think is best' clearly show a strong parental input.

In most cases it was not clear how parents got hold of the information in the first place; some students talked about their parents belonging to certain clubs, or societies / academic networks where the initial information was given. Others said that parents got the information at their workplace, mostly educational settings, e.g., Colleges.

Teachers were key to informing about half of the successful applicants but parental input was also important in making students aware of the existence of the Academy, and in encouraging them to apply by facilitating the application process. This is consistent with the findings from the Nord Anglia evaluation (DfES, 2001) in which parents became involved, especially when the school's ethos supported gifted education by labelling their gifted and talented students and communicating their criteria clearly.

Most students said that they applied immediately after obtaining the information about the Summer School because they felt 'it is a good opportunity' and because 'parents thought it is a good idea'. A small number felt the need to think about it and reflect on how to complete the application form. They felt they needed more information 'sort of investigating first, looking it up in the Internet'. Some students received the information close to the deadline for the submission so they had to apply immediately. Most students thought it was easy to complete the application form although they felt somewhat unsure about what kind of information or documentation to include.

Most of the students interviewed at the Summer School had not taken a standardised test to support their application. Those who took either the SAT1 Reasoning or the World Class tests described them as being easy. Students expressed a degree of confusion about whether these standardised tests were mandatory or optional and that their school was not clear either. One student stated specifically:

> 'I went to my Head of Gifted and Talented at school. She said she was informed about it but she said because we were late in applying for the SAT1 she was not going to apply, but I told her we did not have to do that, it was just optional, but I think it could have been better if the Academy had made that more clear'.

Reasons for applying   Help with personal interests and parental encouragement were the most frequently mentioned reasons to apply, something to do over the holidays the least frequent (Table 10). Compared to unsuccessful applicants, successful applicants were less likely to have applied to get help with their schoolwork.

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Table 10: Applicants' reasons for applying

	Why did you apply to the Academy? (number of mentions)
help me with my personal interests or hobbies	44
help me with my school work	35
help me prepare for my chosen career	34
My parents encouraged me to apply	46
My school, teachers or tutor encouraged me to apply	35
It was something to do over the summer holidays	22
Other	23

The most common reasons given for choice of subject, apart from the category 'other', were enjoyment of, or interest in, the subject and future plans, either work or study. The 'subject I thought I'd be best at' reached almost 20%. Adult influence was not an important factor.

Table 11:   Applicants' subject choice

	Why did you choose particular subject area? %
Subject I thought I'd do best at	19.4
Recommended by teachers	1.4
Recommended by parents/guardians	1.4
In future I'd like to study this subject	23.6
In future I'd like to do a job that for which I need to know this subject	15.3
other	38.9

Schools were overwhelmingly aware of pupils' applications (98.6%), and helped with the application in almost 80% of cases, either through gathering evidence (46%) or by helping to fill in the form (33%). This was confirmed by a number of those interviewed at the Summer School who reported that schools played an important role in compiling the necessary documentation (e.g., test scores, letters of reference) and paying for the application fee (in some cases). Also, some students stated that their schools were pleased having their pupils enrolled in the Summer School - 'The school put in the newsletter that I was going to the Summer School'.

However, a small number of students said that their schools 'did not really help them' in that they 'went around getting all the teachers for recommendation letters…having to go around and get test results -SATs, CATs- so they just built it up for ourselves'.

Only 25% of respondents took a test as part of their application, most of those taking the SAT reasoning test, with just four respondents reporting taking the World Class Tests. The Wechsler IQ test, the mathematics Olympiad and 'an Australian test' were also mentioned.

Respondents reported supplying personal statements and letters from school or teachers as supporting evidence to their application, with a smaller number supplying examples of school work (Table 12).

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Table 12:   Supporting evidence

	What supporting evidence did you include with your application? (number of mentions)
None	6
Personal letter or statement	52
Letter of support from school or teacher	46
Letter of support from parent or guardian	6
An example of school work related to chosen subject	28
An example of school work not related to chosen subject	24
Other	10

About 50% of students were planning to do some preparation work before the start of the summer school, usually this was to take the form of some extra reading or research on the subject, or doing an assignment sent them by the tutor. Getting help from parents was the next most common category of responses. If they were not going to the summer school, over 50% would be going on holiday with family or friends, with 28% having no plans, and most of the remaining students doing paid work or attending another camp or summer school. No students were planning to do voluntary work.

Table 13:   Applicants' reasons for going to the summer school

	Why did you want to go to the summer school? (number of mentions)
I want to learn more about the subject	66
I think it will help me with my school work	34
I want to make new friends	53
I want to find out what university would be like	44
If I go, my parents will give me a reward	3
Other	24

As can be seen in table 13, the most common reason to attend the summer school was wanting to learn more about the subjects, although making new friends, finding out what university would be like and help with school work were also frequently mentioned. Parental rewards were rarely a factor, however. Other reasons given were mainly enjoyment or idiosyncratic reasons.

Students who were interviewed at the Summer School justified their subject choice in terms of 'being interested in the particular subject' and doing something 'good for their CV' and their future university studies or career. Most of them saw it as an opportunity to 'expand their horizons' and support them with future studies. Other students talked about their parents encouraging them to attend the Summer School in that they saw benefits in attending a NAGTY programme for future job opportunities. A few said that it is good 'for character building, to learn how to cope with things', and to 'share this experience with other people from the school who did not have the privileged of coming here'. Also, some students stated that Philosophy as a subject is not in the school curriculum 'so this is a good opportunity to learn something'. Others said that 'the

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Chemistry you learn at school is not practically based,' or ' Here you get to work with tiny little capillary tubes rather than big test tubes'.

One student in particular said that 'I want to do chemical engineering and find a superconductor at room temperature- so Summer School links to future career ambitions'. They also stated that they wanted to do something different from what is usually done at school, in terms of 'stretching themselves' and work on their chosen subject thoroughly. Thus, they saw Summer School 'as a great opportunity, to see actually what my potential is, to get as much knowledge and experience as possible, and for the enjoyment of doing a subject like that'. A small number applied because of lack of alternative plans, e.g., holidays, jobs or other summer activities. Many students discussed benefits in terms of social interaction, especially with people who have similar interests and abilities.

A small number of students said it was their desire to do Maths or Creative Writing that was their main motive for applying to the Academy. Statements such as 'I always liked writing and I thought here is a chance to have a look at it at a higher level and see what is like' or 'I was feeling at the time that GCSE was stifling creative writing because the emphasis was too much on critical essays, so I thought it is a great opportunity to rekindle my enjoyment for creative writing' reflect a strong interest in the specific subject matter.

Most students reported that they chose their subject fairly quickly because they knew what interests them. Others felt restrained in that the range of subjects was limited. Some said 'I was surprised that only a few subjects were offered to choose from', whereas others were 'willing to do what was on offer'. However, most students felt the need for a wider range of subjects, e.g., languages, music, engineering, psychology. Some students were forced to choose a subject because the one of their interest was not included. It was said 'the thought of doing three weeks maths was daunting…I wanted to do languages, i.e., Ancient Hebrew, instead'.

Students were most worried about possibly missing their parents, followed by lack of a proper holiday or an uninteresting course (Table 10). The most common responses under the 'other' category were worries about not fitting in or making friends, or not being as clever as the other participants.

Table 14: Possible dislikes about summer school

	What might you not like about the summer school (number of mentions)
I won't get a proper summer holiday	26
The course might not be interesting	24
The course might not be relevant to what I want to learn	16
I'll miss being close to home, family and friends	40
Other	23

Some students commented that they would have liked to have received more communication and information from the Academy.

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A few students, although they were not asked directly, stated that they experience difficulties in certain areas. Specifically, one student said 'I can do all the work and preparation [for Chemistry]. I just can't write it up. I am useless at English… the fact that I cannot write it up is still a problem'. Another said that 'English is my weakest subject. I just like doing things really not writing.' A few said that their handwriting is 'not so good', and one student stated that he 'had to change a few bits, putting in full stops, which Dad did because I am not good at that. I can do French and German, but I can't do English'. These comments suggest that these students may experience a degree of specific learning difficulties requiring a needs analysis to ensure that they are supported properly.

2.1.4 National Academy perspective

The Interim Director considers that the initial publicity and process for application were both problematic owing primarily to the very short time available from the University of Warwick being award the National Academy and the timing of the first Summer School. Initially with 'only a leaflet and a website' inviting registration of interest the Academy received about 2200 enquiries within the first four weeks. The application form was now considered inadequate for its purpose. One factor was the difficulty in obtaining guidance from the Qualifications and Curriculum Authority (QCA) on the level of results on the World Class tests, which would have been included on the form to guide applicants.

Lack of access to all secondary schools also limited the efficiency of publicity. Furthermore, the short time span limited the practicality of applicants taking the World Class test or the SAT 1 Reasoning test. (N.B. 'SAT' here refers to the Scholastic Assessment Test, a standardised test developed in the US.). As a result few applicants provided data from either of these tests, so seriously limiting use of one source of information intended to aid selection. Nevertheless, by the deadline there were about 550 applicants almost all of whom wished to be considered for the first Summer School.

3. SELECTION

3.1 Selection for the Academy

It had been hoped to make use of standardised tests, as described in the previous section, but this proved impractical. However, both the Interim Director and the DfES Project Manager stressed that it had always been intended that selection for the Academy would be on a broad basis, not just a test – As the latter commented:

> "we were quite cleat that….. either using the US SATs or an alternative would be too restricted, and particularly for a pilot year when what we wanted to do was to try out a range of different approaches"

When assessing students' ability it is important to raise the issue of what counts as evidence of giftedness and talent. Is it academic performance scores or qualitative indicators on certain personality characteristics (e.g., persistence, perseverance), motivation and interest that provide accurate and valid ways of identifying able pupils? If we are to promote giftedness as being inclusive, dynamic and contextually specific, then we need to take into account social /cultural values on ability and its manifestations (cultural practice regarding the acquisition / construction of knowledge), social advantage and quality of provision. In this context, the identification and selection of able students needs to consider the following issues:

➢ Equal opportunities (balance of gender, ethnicity/race and disability);
➢ Wide participation: Who participates and who doesn't;
➢ The ways opportunity is interpreted and understood (schools, parents and students);
➢ Support and accommodation of special educational needs and language (if English is not the first language);
➢ Age as a critical factor to capture interest and motivation (lack of challenge may lead to disaffection thus the need to include pre-11 year old students is paramount).

According to the earlier evaluation by Nord Anglia, initially schools tended to identify their Gifted and Talented cohort generically. This sometimes led to pupils with particular ability in one subject being excluded. It also resulted in pupils gaining little from some of the enrichment activities set up for them, for example a maths enrichment day might be of little value to a child who was not very able mathematically but was included in the cohort because of ability elsewhere. Almost all the schools that participated in that DfES funded evaluation have moved on from this position. They now identify their Gifted and Talented pupils department by department and set up more focused activities for them. This has generally led to a much larger cohort than 10% in the majority of schools (Nord Anglia report; DfES, 2001).

Movement into the Gifted and Talented cohort is becoming more common as teachers improve at identifying qualitatively. Predictably there is reluctance to move pupils out which leads to cohorts growing in size. This dilutes the funding and other resources available for the 10% and is contrary to DfES guidance. Some schools have a larger group of pupils who provide a "feeder group" to the 10% cohort. This represents a

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sensible compromise, but Gifted and Talented funding should be targeted primarily at the 10% cohort (Nord Anglia; DfES, 2001).

This is the backdrop against which selection for the National Academy and the first Summer School occurred. In the absence of a standardised assessment used consistently across all the applicants, we are unable to evaluate the degree to which the intention to identify the top 5% and 1% was achieved, although we do examine the data from the SAT 1 test given to the Summer School students. Comparisons were made to examine comparability between those who were successful in gaining a place at the Academy, unsuccessful applicants and those who had sought information but did not apply, with respect to demographic data. (NB the following are derived from responses to the *questionnaires* as we were unable to analyse the Academy's database. This issue will be addressed below).

Table 15:   Mean age

	Non Applicants	Unsuccessful applicants	Successful applicants
Mean age	12.8	12.9	14.2

The mean age of successful applicants is significantly older than that of unsuccessful and non-applicants, by over a year. This reflects, at least in part, the decisions made by some tutors to take only older students.

Table 16:   Gender

	Non Applicants %	Unsuccessful applicants %	Successful applicants %
Male	51.8	44.1	55.8
Female	48.2	55.9	44.2

As can be seen in table 16, successful applicants were significantly more likely to be male than unsuccessful applicants, with non-applicants taking up the middle position.

Table 17:   School sector

	Non Applicants %	Unsuccessful applicants %	Successful applicants %
State	70.6	80.7	69.3
Private & Independent	29.4	19.3	30.7

Unsuccessful applicants were more likely to be from state schools than successful applicants and non-applicants. The percentage of students from the independent sector (30.7%) is substantially higher than the size of the sector would predict

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Table 18:   Ethnicity

	Non Applicants %	Unsuccessful applicants %	Successful applicants &
White	71.4	70.0	78.0
Black African	0	0	0
Black Caribbean	0	1	2.6
Chinese	5.4	6.7	2.6
Indian	8.9	7.6	10.5
Pakistani	0	3.3	0
Other	14.3	11.4	6.6

Successful applicants were more likely to be white (or Black Caribbean, although the numbers here are small) than unsuccessful or non-applicants. However, the overall percentage of ethnic minority students at 22% is high and was noted by the Interim Director as 'great, that is significantly above the school population for 11-16'. However, he was concerned about the small number of Afro-Caribbean males 'that's something I'm sure the academy will want to address in the future'.

Table 19:   Special Needs

	Non Applicants	Unsuccessful applicants	Successful applicants
Special Needs	12.0	5.9	6.8
No Special Needs	88.0	94.1	93.2

Non-applicants were more likely to report having special needs than applicants, but there was no difference between successful and unsuccessful applicants

Comment

Overall, these results suggest that there may be a bias in the selection procedure towards older and male applicants, and applicants from the private/independent sector. However, the proportion from ethnic minorities was higher than their numbers would suggest. Also, the data on the full group of 97 attending the Summer School suggest that diversity was even higher than suggested here.

3.2   Selection for the First Summer School

We present evidence gained from observations of the selection processes for each subject, and from interviews with the tutors and the Interim Director.

3.2.1 An Overview of the Selection Process

The selection process for the first Summer School presented a number of difficulties, according to the Interim Director. Firstly, only 6 of the 8 courses originally advertised were available. Secondly, many of the applicants misinterpreted the preference specification, and thirdly the overwhelming number (about 45%) who put Maths as their first choice 'which created a problem I simply hadn't anticipated'. This resulted in some

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'arbitrary decisions reallocating people who put Maths as their second preference immediately into another category'. Also, 'if they'd put Environmental Science anywhere on the list, putting them into that category because there were so few applications for Environmental Science' despite expectations when planning the programme that this would be a popular subject. Nevertheless, 79% are reported to have been given their 1st choice.

A further issue concerned the plan to run three courses for the top 1% (Environmental Science, Maths and Creative Writing) and three for the top 5%. In addition to the problem of numbers, a further difficulty became apparent – how to identify these separate groups in the absence of a common metric, given only a minority had submitted SAT1 or World Class test results? Furthermore, as shown below, tutors decided in practice to use a range of information each considered appropriate for their subject.

The Interim Director states that the 'I was absolutely convinced that it was very important that as far as is possible we did get a representative group'. Further, 'I didn't want us to see a disproportionate number from independent schools because they happened to be quicker off the mark'. He considered that with respect to the outcome, comparing the 550 or so applicants with the 100 on the Summer School, 'the proportions from ethnic minority backgrounds, male and female split, independent versus state sector were broadly in line'. However, he also noted that within the range of ethnic minority students there was variation:

> 'We got 27% non-white students which was great and that is significantly above the proportion in the school [population…but a very small number of Afro-Caribbean males which is, if you like, the significant under-recruitment in terms of ethnic minorities, and that's something I'm sure the Academy will want to address in the future.'

He did not want to do 'a lot of social engineering' but did 'keep on reminding course selectors that overall within the Academy Summer School, the first Summer School, I was keen that we got appropriate representation'. Our analysis, presented above, indicates that while this was roughly achieved, there were a number of significant variations.

3.2.2. The Selection Panels

It was anticipated that for each subject area there would be a panel of selectors. However of those five areas where the selection process was observed, in three cases there was only one tutor involved in the decision making process. Creative Writing candidates were judged by a team of two and Chemistry by a team of three.

There was no moderation between panel members and the selectors reported that they had not been briefed beforehand on what to expect from the application forms in terms of supporting evidence. This had limited prior consideration of what criteria might be particularly valued. Better preparation in this sense would have probably not only led to more consistent choices being made, but would also have made it easier for panel members to evaluate the applications. Those with a school-based teaching background were better equipped in that they understood terms such as 'Key Stage'. Several

struggled with sorting out which year groups related to which age of child, and several were not familiar with the subtleties of Key Stage SATs test result levels and the differences between Teacher and Test scores. The results of less commonly used tests were not understood and for many selectors it was the first time that they had seen psychologists' reports. Selectors also struggled to understand some terms used to describe applicants' special needs, particularly dyspraxia and Asperger's syndrome. On occasion the researchers observing the selection were asked to advise on these matters, which was found to be very helpful.

In one case, after having placed some emphasis on National Curriculum SATs scores or predicted scores, the selector came to an application which had a Key Stage 3 mock test paper attached. One selector expressed considerable surprise and disappointment on realisation that it was not as challenging as had been anticipated. Following this, greater emphasis was placed upon what was termed "a gut feeling" of what each applicant was like. This was true to a greater or lesser extent of all other panels, and led to those applicants who did not provide extra supporting evidence being disadvantaged.

3.2.2.1 The Mathematics Selection Process

The Mathematics course was taught by the tutor who completed the selection, as well as a postgraduate student and a teacher, among whose responsibilities was expected to be "class control". Mathematics was the most frequently requested subject area (see above). Applications had been pre-sorted so that only first choice applicants who were viewed by the Interim Director to fall into the top one per cent in terms of ability were passed to the selector for consideration.

Initially selection criteria relating to test results were viewed as important by the tutor, but as the process went on, the selector became increasingly comfortable with basing his judgements on the supporting evidence, particularly supporting statements from applicants, their parents and their teachers. The selector was keen not to be put off from taking pupils who may have difficulties, for example those not able to write quickly or those who were dyslexic.

3.2.2.2 The Creative Writing Selection Process

There was a panel of two for the selection of Creative Writing applicants. The course was to be taught by these tutors but supported by visiting authors, poets and dramatists. In this sense, both of those detailed to be responsible for the course were involved in selection. Creative writing was the second most frequently cited first choice by applicants.

Promising student profiles were those that showed a "sense of adventure", "flexibility in mind" and "flair", that is, not just a strong academic background and good essay writing skills. These indicators were qualitative and subjective in nature. Only applicants aged between 14 and 16 who listed Creative Writing as their first choice were considered.

The issue of whether creative writing is or should be seen as an academic course was raised during the selection process. Also, discussions about what constitutes gifted-ness were raised during the selection process in terms of whether academically able students should be classified as being gifted?

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3.2.2.3 The Chemistry Selection Process

The selection panel comprised the three Chemistry tutors. Initially they were selecting students in Years 10 and 11 those on GCSE courses who had put Chemistry as first choice. Applications were such that they finally extended their search, checking the evidence of students who put Chemistry as a second choice as well as moving to look at younger applicants who were registered for or held GCSE. In all cases the academic ability was checked but supporting evidence was also scrutinised. Those without further evidence beyond the application form were rejected immediately.

3.2.2.4 The Drama Selection Process

The Drama selection process differed from the other four which were observed, not least because it took only a little over five minutes to complete. The age of applicants was the first criterion, with only 14 to 16 year olds being eligible. Beyond this, it was unclear on what basis selection was made. Applicants had sent in a variety of evidence, often written but in one case a video, which was not examined in detail. A child from an independent school was accepted in order to give a social balance. The tutor considered that this was a pilot and selection was not carried out, as it will be in following years. In the future funding will be organised to give children the chance to get into drama college who otherwise would not have that opportunity. Consequently selection was seen as a less important process this year.

3.2.2.5 The Environmental Science Selection Process

Environmental Science was initially offered by the tutor involved as a series of 'fun' activities to break up the rest of the three-week programme and to be available to all Summer School students. The tutor had been persuaded to run a full course in its own right, but on going to make the selection did not know whether there would have been sufficient applications for the course to run. There were nineteen first choice applicants. She retained the full spread of ages: 11 to 16, and based her judgements on IQ scores, also placing emphasis on personal statements. It was clear that the tutor, having a school background, was committed to ensuring a balance of background, ethnicity and gender, but in certain cases also favoured pupils from local schools which she knew to be in particularly difficult circumstances. It was her belief that pupils who needed the chance to 'shine', who were in otherwise disadvantaged circumstances should be given priority.

3.2.3 The need for additional information

Tutors felt that there was less evidence than they had expected. One noted before the Summer School, "I thought there was going to be clear evidence of excellence. And if you asked me to bet a hundred pounds that these students were excellent, I'd sadly decline". One commented on how the teaching assistant for the course had received a telephone call from a teacher who asked what the minimum amount of supporting information necessary was and how the teaching assistant, "was forced to say, 'You shouldn't think in terms of the bare minimum, you should be putting in as much positive evidence that these are bright students as you possibly can'".

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Tutors had put great emphasis upon the inclusion of a personal statement with each student's application. Where such a statement had been included, it was possible for the tutor to gain a sense of the student and of their "person engagement" with the subject in question, "students who could put together, hopefully in not too polished a way which would rather imply it was their parents who did it. some sort of statement in their interests and abilities which formed a coherent intellectual structure".

Tutors argued that test results were an impractical basis for selection for two main reasons. Firstly, all students were of a good standard in terms of their National Curriculum Key Stage SATs results and so distinguishing between them on this basis was impossible, with many holding the same grades: "most of the people for whom there were test results had reasonable test results". Furthermore, not all tutors where convinced of the standards pupils had to attain for statutory tests, one claiming surprise at the low level content of the statutory tests.

Secondly, the expertise of tutors did not extend to being able to differentiate between test results or in some cases other types of submitted evidence: not having expertise in the meaning of test scores meant that tutors could not make sense of scores or compare those derived from different tests. One tutor reported not having heard of World Class tests before involvement with the Academy. Another tutor described psychologist's reports as "a load of psychobabble I don't understand". In the case of Philosophy, it was noted, "there's a long term experience in the Philosophy Department that in fact, one of the best selectors for philosophical ability is an old fashioned 'O' Level English comprehension test and indeed, the philosophy department has such a test for non-standard students. One tutor did take a substantial interest in the tests, finding that in particular the American SAT1 Reasoning test seemed a good predictor, more so than the World Class Tests, and he would have liked all applicants to have taken the SAT.

In addition to the personal statement, tutors felt that selection would have been made easier had they had a "supporting statement" from the applicant's teacher. One tutor emphasised the need for the statement to be individual to the student, as there had been cases of a "generic, standard thing which had a name on it that wasn't even the name of the student. That was completely confusing, and I think it was the same for all the candidates from that school".

The third piece of evidence which tutors felt that they would have benefited from being included was an original piece of work from the applicant. Most often they had found that submitted work was school coursework and often irrelevant to the subject which they had applied for. The latter was received in mixed ways by the tutors, some thinking that work should be relevant, others feeling that if a child was particularly able, then any piece of work would demonstrate this. Submitting an original piece of work was seen as highly significant by at least one tutor, who expressed surprise and regret that more applicants hadn't done this. "I would like some original work out of school. Even if it's a load of rubbish, if it shows they have thought about it [the subject]". However, above all, it was the tutor's need to establish what the student was like, largely in terms of their keenness to learn and aptitude for the subject but also in terms of their character.

For the subject of Drama, the tutor had selected in order to establish a group which was, "socially and ethnically diverse" as he felt that the group dynamic was of prime

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importance, seeing, them "as a group and not as individuals": "diversity was more important than any other attribute for the group".

Some tutors also commented upon what they would have preferred to have been omitted from the application form, for example, the question relating to whether parents were Warwick graduates was one such.

> "Even asking parents if they are graduates may be a little threatening to some parents. If we are selecting on the basis of ability then we should be using the same criteria and being inclusive. I suppose the question about being a graduate was meant to be more inclusive of those children who don't come from an academic background, but I think it probably had the opposite effect. Specifically listing about Warwick graduates is disgraceful".

This information, however, did indicate that about 50% of those attending the Summer School did not have parents who were graduates, an indicator of the social diversity of the group.

3.2.4. Demographic Indicators

Given that the summer schools were to take students who were above all gifted and talented, the retention of demographic indicators on the forms given to the selection panels was considered to be open to question. However, the Interim Director's advice was that he wished for the Summer School overall to have a balanced intake (see above). This led to some selection panels trying to ensure that there was a balance of participants, either reflecting the applicants for that subject or to impose a balance, primarily in terms of ethnicity, gender and school status. This is potentially a problematic practice, and mirrors a dilemma found by dance and drama schools involved in the Dance and Drama Award scheme for students undertaking courses of professional training, where the primary selection criterion is talent, but a second criterion concerns the applicant's financial situation, related to social disadvantage (Neelands et al, 2002). Operating this process has been problematic. The challenge is to operate the system such that it is transparent and the relative weighting of criteria are clear and that the selection procedure reflects this faithfully.

Chemistry and Drama selectors did not pay attention to the balance of the final group but the Chemistry panel did acknowledge that it might be an issue. In more than one subject area, selectors were observed to give priority to students from schools known as 'disadvantaged' or 'tough' in the local area. Whilst these students were of a level in line with others selected, it was on the basis that they should be 'given a chance'. Selection was not sufficiently thorough to establish whether their schools were any more disadvantaged than those of applicants from areas not known to the panels. It will be necessary to make clear the relative priority of criteria, particularly those based on assessment of 'gifted and talented' and those primarily social or opportunity related.

3.2.5 Timing of Selection

The selection process timed for the 20th, 21st and 22nd May meant that scores from the SAT I Reasoning or the World Class tests, only available around the beginning of June, could not be included in the initial selection process. Applicants who had taken these

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tests had been sorted out from the main body of applications and selection panels were asked to choose some of their 'reserves' from these and some from the main non-test applicants. However, the absence of these scores did not influence the initial stage of the selection process: by the time that selectors had got onto the 'Test results pending' applications, they were generally basing choices upon their feelings about the rest of the application, particularly the pupil's personal statement.

3.2.6 The influence of number of applicants per subject

A hundred places are available for the summer school as a whole. Students were required to indicate their first and second choice of subject. There was a great disparity in the numbers applying for each subject. Mathematics was the most commonly requested course and, of the subjects that ran, Environmental Studies was the least frequently requested. This led to first choice Mathematics or Creative Writing combined with second choice Environmental Studies applicants to be removed from their 'over-represented' groups and only being considered for their second choice subject. This did not divide evenly across the six subject areas. The first selection to take place was for places on the Environmental Science course, for which the selector was asked to choose between fifteen and eighteen students. She elected to restrict her numbers to fifteen, as this was the maximum number that she could take in a minibus with two tutors. Chemistry similarly had a limit imposed upon the numbers, with eighteen being the most practical maximum number to tutor in a Chemistry laboratory.

The wide variation in numbers of applicants by subject naturally had implications for the tutors involved in the selection process. Some tutors restricted their search to particular age groups, generally the older students. Others had very few students to select from and so could not, had they wanted to, restrict in such a way. However, one course tutor felt that to limit applications in this way was unreasonable, saying,

> "If they are writing in applications from that age group then you've got to consider them. otherwise, you've wasted a lot of people's time and effort and I think that's pretty disgraceful really. Particularly these youngsters, bless them, if they've got to fill a form in themselves. [It] May be a good informative experience, completing an application form, [but] I think it's completely unfair if it has been a complete waste of time for them".

An opposing view, from a course which had 14 set as its lower age limit, was that younger students would not have been sufficiently emotionally mature to withstand the pressures of the course. It was considered that, "the emotional risks are considerable" when stretching students. After the course, the tutor reflected that this had been the right decision, even though the younger ones were seen to be "blossoming wonderfully". Experience of teaching these age groups had led one tutor to focus upon a narrow age range, that is Years 9, 10 and 11 as he felt that,

> "the shift from Key Stage 3 to 4 is a difficult one . . also, they are more mature to benefit from Drama and it is easier to apply the DfES criteria for assessing their performance at this age level".

The Environmental Science tutor acknowledged that, "I virtually took all applicants who'd applied for Environmental Science". Because of this, she was pleased that there

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had been a good "spread" of applicant in terms of ethnicity, gender, demography and school background. However, tutors on the whole would have preferred to have had the personal details of students removed before they examined the application forms and then gone back to the applications had the 'blind' selection of students resulted in an imbalance.

Philosophy too had a relatively small number of applications, and it was, "to some extent an overflow from the Maths course. . we picked a number of people who really wanted to do Maths".

3.2.7. Moderation

The Interim Director was the only person to have seen all of the applications and therefore the only person who could have a moderation role. This was not an easy task given that he was not an expert in the gifted and talented field. 'I was making, if you like, lay person's decisions in a number of cases' although he clarified that 'at the end of the day I wasn't the decision-maker, they (the tutors) were making the decisions and I was seeking to advise them'. This was an interim arrangement and in the future this role would be undertaken by a new director of assessment who would have an appropriate academic background an 'who will be able to offer sound academic advice on selecting candidates'.

3.2.8 The Students

3.2.8.1 Ages of Students

During earlier discussions with the Interim Director, some tutors had decided that they would be imposing an age restriction. For Creative Writing, the course was to run for students aged between 14 and 16 to ensure an 'emotionally cohesive group' on the basis that creative writing requires a degree of maturity to enable students to experiment with unconventional forms of writing. Drama places were also restricted to this age group although it is unclear on what basis this was made.

The Chemistry panel had the clearest idea of the course content and so knew that students would need to understand three key concepts before the work began. On the basis that it would take a day to ensure that all fully understood these, and if they were already known to some then the revision would prove boring for some, Year 10 and 11 students were initially selected. When, from these, too few forms were accepted, the selectors then looked for Year 9 students who were studying for, or who had, GCSE Chemistry.

3.2.8.2   Students with Special Needs

There were certain practical difficulties for panels in some subjects, particularly Chemistry, in choosing students with special needs. One Chemistry application was from a child with Asperger's syndrome. Whilst the evaluators were able to help the panel to understand what this meant, it was finally decided that this student be rejected as there was insufficient information about the severity of the condition and particular needs of the child for it to be a 'safe' choice, given the dangers inherent in a laboratory. No safety issues arose in the decision-making process for Environmental Studies.

However, the tutor did express concerns that she did not have much information about the applicants and this could create difficulties during the summer school, should any prove to have behavioural problems or physical disabilities.

3.2.8.3 Local Applications

The retention of personal details on the forms available to the selectors led to some advantage being given to local applicants by selectors who knew their schools to be particularly 'rough' or disadvantaged. One tutor spoke of finding an application from a student who attended a local school, "and I did think 'Good on him!' You know? 'If he can come to the [summer] school, that's great!" However, there was no means of telling whether these schools were more disadvantaged than others from further afield which were not known to the selectors.

3.2.9. Supporting Evidence

Applicants were not required to submit a standardised set of supporting evidence. This led to various difficulties for the selectors. Firstly, evidence in the form of examples of the applicants' work varied in terms of whether the content was relevant to the subject which the student had applied to study. For example, some drama applicants had submitted a piece of Science (Chemistry) work whilst some Chemistry applicants had submitted a musical score. A Mathematics applicant had submitted their entire project on the Ancient Greeks, which comprised pictures and maps, which were judged to have been lifted from a computer database, and accompanying text. In future it would seem appropriate for work either to be closely related to the subject the applicant wished to study, or for it to be accompanied by some explanation of why it had been included, for example, to demonstrate that the applicant was 'well-rounded' or had good English language skills, despite being a recent entrant to the country.

Often work which was submitted was coursework or homework. In the case of some Mathematics exercises, neither the questions nor the workings were shown, thus the evidence only demonstrated that the applicant had got the work right or presented it neatly. Original work, in the sense of that done by the applicant in their own, rather than school time, was rare. For some subjects, such as Chemistry, this was perhaps understandable as 'taking the subject further' is difficult outside school, as access to special equipment is often necessary. However, in the case of pieces of creative writing, mathematical and environmental investigations, it would seem plausible that the child with a genuine enthusiasm, interest and 'talent' would produce these in their own time. Those selecting applicants stated how they would have benefited from having such pieces of independently produced work, at least that which related to their own subject area. In the case of one Chemistry applicant, only two places remained to be chosen; on reading a piece of school work, the selector found that it explicitly showed understanding of two of the three key concepts needed before beginning the summer school programme: the applicant was selected immediately on that basis.

As has been noted, those applicants who did not include a personal statement were often disadvantaged. The statements gave the selectors a sense of the applicant: their general nature, willingness to learn and participate and their personality. These qualitative and intuitive selection criteria carried weight with four of the panels that were

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observed. It was clear that tutors had to make some decisions based upon the need to create a group which was in some way coherent.

In one case a Mathematics applicant provided no extra information beyond the basic test score results other than a letter from his mother. This explained the disadvantaged background from which he came and detailed the periods of homelessness and trouble in his life which had coincided with his taking end of Key Stage tests and then, with some humour and charm went on to ask that her son be accepted. This child was accepted, but we have no means of knowing what others with similar stories were rejected. This form of 'extra' evidence is, of course, not hard or quantitative, nor is it easily verifiable, yet it would seem to be useful if the subjective judgements remain important in future years.

Some evidence to support applications was questionable and similarly raises questions about how it can be verified. If non-school work is to be encouraged or expected, then measures need to be put in place to ensure that work is original and completed by the child. One applicant had only lived in England for three years and had not spoken any English on entry to the country. The use of English in the personal statement was, given these circumstances, exceptional. However, it was typed in the same typeface as the teacher's recommendation and, whilst probably entirely genuine, questions were raised by the selector about how secure they could be in believing that the applicant had a sufficient grasp of English to cope with the course. The applicant was rejected.

In a similar way, an applicant gave no evidence in English. There was no personal statement and her work was a piece of French which, whilst it said, "Je parlez anglaise facilement" could not be trusted by the Chemistry panel to be reliable (clearly his French is suspect as well). The student was considered but eventually rejected.

Similarly, some supporting evidence was highly edited, most obviously in the case of a patchwork of comments from a school report. This may just have been for practical reasons, making highlights of a report fit onto one sheet of A4 paper, but it may have been a means of 'hiding' less favourable school comments.

There is also a need for the evidence to be dated. One piece of work, some graphics, from a 13 year old, had comments on it which appeared to be those of a primary school teacher. Not only was the work not linked to the subject applied for (Environmental Science) but also it appeared to be at least two years out of date.

A small number of schools had mechanisms in place which removed any question of whether work was old, completed by the applicant or in its entirety. The use of a school stamp with staff signature and date was seen in a couple of cases and provides a possible means of verification.

There were issues raised about the relevance of evidence in a further way. In some cases all school certificates and awards appeared to have been included, for example, one Mathematics applicant had included a 100m swimming certificate: a distance not exceptional for even an eleven year old and certainly irrelevant. Other applicants had submitted school certificates for attendance, behaviour and effort, which had been awarded over a period of some years and which dated back to primary school.

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4. THE SUMMER SCHOOL

4.1 The student perspective

Information from the students was gathered by interviews in the first and last weeks and by an exit questionnaire (N=77).

4.1.1 Preparing for Summer School

Certain subjects, i.e., Chemistry, Philosophy, Drama, had specific requirements in terms of asking students to produce a piece of written work with their application form. Also, those enrolled in the Drama class had to prepare by reading 'The Tempest'. Thus, students who chose these subjects engaged in these preparatory activities that were already set for them. Most of the students from other subjects did not do any preparation. A few read some books, not necessarily related to their chosen subject, and others reviewed schoolwork they did for their GCSEs (some with parental support).

4.1.2 Benefits

The vast majority of respondents to the questionnaire had decided to come to the Summer School to learn more about their chosen subject. Coming in order to make new friends was mentioned as well.

Table 20: Students' opinions of the Summer School

	How enjoyable did you find the course %	How beneficial did you find the course %	How challenging did you find the course content %	How suitable was the group mix %
Very	72.7	57.1	18.2	49.4
Somewhat	26.0	39	76.6	46.8
Not very	1.3	3.9	5.2	3.9
Not at all	0	0	0	0

4.1.2.1 Academic aspects

Most students interviewed at the beginning of the Summer School stated that they expected anticipating in the Summer School would give them the 'opportunity to approach subjects thoroughly and expand their knowledge'. This was confirmed when they were re-interviewed at the end. As shown in Table 20, the vast majority of the students who completed the questionnaire responded positively to the courses they had experienced at the Summer School: 98.7% found them enjoyable, with 72.7% rating them very enjoyable. The courses were also considered beneficial by 96.1%, although the proportion rating them very beneficial was 57.1%. Overall 96.8% rated the courses as challenging but less than a fifth found them very challenging.

Analysing the differences by subject studied, significant differences were found on how enjoyable they found the course, how beneficial they found the course, how challenging, and how good the group mix was.

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Creative Writing, drama and to a lesser extent Chemistry students rated their courses as more enjoyable than Philosophy and Maths students. Creative Writing and Maths students rated their course as most beneficial (statistically significant difference with Philosophy and Environmental Science), while Philosophy students rated their course as less beneficial than any other group. Philosophy students rated their course as the most challenging, followed by Creative Writing students, while Environmental Sciences was rated the least challenging by students following that course.

At interview, most students stated that they had had the opportunity to approach their chosen subjects in ways that would not have been possible at their schools. They also felt that this is likely to prepare them for their A-level studies. In Chemistry, for example, students referred to the opportunity to be in a lab with all the necessary instruments and get a valuable practical experience, compared with their schools where lab activities are restricted. They felt that engaging in hands-on-experience activities in the lab was very valuable rather than 'just sitting in the classroom and have someone telling you'.

Also, in Creative Writing, many students felt that the 'discussional aspect of the course' had helped them in terms of sharing ideas and stimulating 'fresh ways of looking at Creative writing'. Other students stressed the importance of 'linking Maths with other topics in order for people to understand the scope of mathematics'. Also, it was said that 'we learn an awful lot more and understand the way Maths work a bit more. Definitely a head start and finish.' Finally, in Drama, students said that the 'opportunity to have workshops with the Shakespeare Royal Company is great'.

Intellectually, most students interviewed said that the experience at the Summer School had 'stretched their limits'. Specifically, it was stated that 'at school, Maths is easy, but here it is difficult and that makes you realise that there is more to Maths than what you already know'. In terms of personal development, it was stated that 'here you also learn a lot of about yourself, manage yourself and confidence'.

In terms of the content of the courses, some students during the final interview expressed difficulties with the material and the pace of work, whereas others talked about a 'challenging content'. The degree of challenge was discussed in relation to particular subjects. Specifically, it was said that Maths was likely to be more challenging than Creative Writing. Students also stated that teachers assumed they knew more than they actually did; however, the teaching strategies helped them understand and participate actively. Students from the Creative Writing group in particular said that

> 'It was good that we had group discussions, read in small and large groups, exchanged ideas. We do not have that at school. It was a great atmosphere because everybody contributed to the group discussions.'

The workload was considered suitable with 71.4% of those responding to the questionnaire rating this just right, 18.2% as heavy and 9.1% as light. Only one respondent rated workload as very heavy and none as very light.

Table 21: Students' opinions of teaching quality

	What did you think about the quality of teaching? %
Very good	84.4
Good	15.6
Poor	0
Very poor	0

Teaching quality was regarded as very high – see Table 21. All ratings were positive with 84.4% rating it very good. At interview many students said that teaching and the content of the course inspired them to the extent that they are more likely to choose their subject for A level studies. Students also made positive statements about the teachers at the Summer School. 'They were not like my school teachers because they treated us like people and not like students'. They stated that teachers were approachable for socialisation during lunch and coffee breaks, and that they are knowledgeable about their subject.

4.1.2.2   Social aspects

Table 22: Students' ratings of social events

	What did you think about the social events %
Very good	57.1
Good	41.6
Poor	1.3
Very poor	0

The social events were rated positively with 57% rating these as very good and over 98% overall giving a positive rating (Table 22).

Table 20 indicates that the group mix was judged suitable by over 95% of respondents. The main negative comment concerned the wide age range (14% of respondents). The group mix was rated as most suitable by the Creative Writing and Chemistry students, and least suitable by the Philosophy and Drama students.

Almost all students interviewed stated that meeting new people with whom they can share interests is an important benefit. Some students said that 'at school or home nobody understands us, they think we're strange, where here people know what you mean'. Also, 'it is good not to do things for the grade'. Some students commented positively on 'being with people from different cultures with different language' is a unique experience. One particular student referred to the long-term effects of the Academy in terms of maintaining links and keeping a correspondence in the future, specifically stating 'the Academy stays with you'.

Many students stressed the importance of interacting with peers who understand them. It was stated 'you are with people who understand you, because when I am at school, I talk to other kids about writing but they do not understand me. They think that I am

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strange. Here you talk to people and they know what you mean.' Another commented, 'You meet some really smart people here and you learn from them'. Another student said that 'in school there is always that percentage of people who wouldn't understand and who need it explained before you go ahead and explore. I think it is really good being with people that you can actually sit down and talk about something without worrying what other people will think of it - everybody understands.' Another student said it is good to meet people like herself because 'I had always thought of myself odd…I thought they might be "boffy" or "geeky" but they are all nice'.

Socially, most students saw the experience of meeting new people as a positive outcome of the Summer School. However, it was stated that most of the structured social activities were a 'bit tiring' making some students feel overwhelmed. Most students felt that meeting other people who can talk to you on a 'more equal footing without everybody thinking that you are the clever one' is great.

4.1.2.3   Organisation

Regarding the organisation of the Summer School, students stated that it was well organised and that 'Staff were excellent'. One student said that 'school will be a great success next year if the same staff are kept on'. Almost all students stated that the residential assistants (RAs) have been particularly personable and helpful. Students felt that they can talk to RAs about everything because 'they are not part of things, they are just from the university'.

4.1.2.4   Benefits and the future

A few students spoke about the benefits not only in terms of how much they learned but also in terms of having been influenced, i.e., their views on the specific subject matter have changed. Specifically, one student stated 'my perspective in English has changed so much, because they helped us to cultivate our imagination'. Others expressed concerns about 'being bored going back to school'. One student in particular said that 'everybody should have the opportunity to go to a Summer School. You get opportunities here that you do not get at school. For example, in Creative Writing visiting writers came and talked to us and worked with us'. Another student said 'we never really do Creative Writing in English, we work on text for exams. Also, people here are quite enthusiastic, there is a much more adult and mature attitude, and there is no pacing to get through exams. People are more dedicated.'

The idea of establishing an on-line community at the Academy where students can maintain links with tutors and their peers was welcomed by almost all the students interviewed. They liked the idea of chatrooms because it is easier than e-mails or writing letters. That would keep them in touch. The establishment of a newsletter was also suggested to ensure not just a way of maintaining contact with other students, but also an avenue where reports by members of the Academy on subjects that are of interest' are presented and shared.

A number of students stated that they were likely to experience boredom going back to school that perhaps may be explained by a less-than-challenging curriculum, mismatched learning styles and what Freeman refers to as the 'three time problem' (Freeman, 1991). This problem emerges from the way teachers present information in

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the classroom: first introduce it; secondly, remind the children; and thirdly summarise and reinforce. Able students are likely to absorb, understand and retain information presented during the first time around, perceiving the other stages as mere repetition which is likely to result in losing concentration and interest and, in some cases, displaying disruptive behaviour.

Some students expressed the need for a wider range of subjects in order to make them re-apply. Others said that they would be happy to come back again next year and do the same subject. Students said that they would recommend it to others although they spoke of the detrimental effect that fees are likely to have on student participation, likely to exclude many potential applicants. Another concern expressed was what was perceived as a 'limited choice of subjects'. Some students said that if the range of the subjects were wider they would have considered recommending Summer School to other people.

The structure of the activities was seen as ' kind of regimented' by a large number of students, stating that this needs to change. A recommendation made was to separate students according to age in order to 'give more freedom to older students'. Finally, it was also suggested that Summer school should be publicised more so more people know about it and apply.

4.1.3 Drawbacks

At the beginning many students raised concerns about the length of the Summer School. They felt that 2 weeks would have been more appropriate. Comments such as 'three weeks was a bit daunting…three weeks of your summer holiday'; 'I look at it as two weeks and five days instead of three weeks - it keeps me going' were quite frequent throughout the interviews. Some said that they suffered from homesickness. Also, the intensity of the daily schedule, the lack of free time and the 'restriction of freedom' were seen as major drawbacks. In terms of the intensity, some students felt it was counter-productive in that they needed some free time at the end of the day to do some writing or maths on their own.

Many students referred to 'compulsory fun' stressing that fun activities should be optional. Although the Summer School seemed to be well organised some stated that it was 'really institutionalised' in that 'we are kept under close watch 24 hours a day, seven days a week. It is not reasonable, we cannot relax'. 'It seems a bit regimented at times'. 'Everything seems to be planned for you'. Age segregation was suggested as a way of 'not treating everybody the same' and allowing more freedom to older students. However, these views need to be balanced by the responsibility of the Academy to ensure the students' safety. It is clear that staff took this very seriously and, indeed, the high level of care was successful and justified.

4.1.4 Summary

  ➢ Access to information about the Academy was limited; it was mostly the parents who provided the information in the first place and, in some cases although not consistently, individual schools.
  ➢ Schools played an instrumental role in facilitating the application process, i.e., providing the necessary documentation and submitting the forms on time.

Almost all students applied immediately after finding out about the Summer School.

➤ Students felt that this is a good opportunity in terms of intellectual challenge, knowledge enhancement, preparation for future educational endeavours (e.g., A levels, university) and job opportunities. Some students talked about the long-term effect of the Summer Schools in terms of giving them the chance to maintain links and engage in future correspondence. They saw benefits for intellectual, personal/pastoral and social development.

➤ There was an expectation and a belief among students that the knowledge acquired during the Summer School can be transferred to future education and career development.

➤ It was stated that, overall, the Summer School was organised very well. However, almost all the students interviewed expressed concerns about the rigid structure of the daily activities and the limited free time. Also, it was felt that personal freedom was restricted and some felt that that the duration of Summer School was particularly long.

➤ It seems that there was a limited understanding as to the kind of evidence, e.g., documents, and exam scores, needed to be included in the application pack. Also, the procedures regarding the standardised assessment of students' abilities were not consistent in that very few took the suggested tests (SAT and WORLD CLASS) whereas most of them included scores form school exams.

➤ There was a consensus that the range of subjects was restricted. Specifically, students suggested Languages, Psychology, Engineering, and Music as potential subjects to be considered for the future.

➤ There was lack of consistency across subjects in terms of the suggested activities or readings to prepare students for the Summer School.

➤ Academically, students felt that they have gained in terms of not only expanding their knowledge but also changing their perspectives and views on certain subject matter. They spoke positively about the content that was challenging and interesting, the teaching and tutors' attitudes, and the learning opportunities that they normally do not have at their schools.

➤ Socially, they valued social interaction with like-minded peers.

➤ They all welcomed the possibility of establishing an on-line community, which will allow them to keep in touch with tutors and peers alike. Some also suggested the introduction of a newsletter as a forum for sharing ideas about specific topics of interest and disseminating their writings.

➤ Students felt that the range of subjects was limited and expressed the view that a wider range of subjects is likely to attract a large number of students to the Academy.

➤ They would definitely recommend the Academy to their friends

➤ They thought that the introduction of fees is likely to have a detrimental effect on student participation.

4.2 The Tutor Perspective

4.2.1 The rewards of teaching on the course

For Creative Writing, whilst being made very tired, the tutor felt that the course had been enjoyable as it

"stretched me as a writer and as a workshop leader and has tested me both as to language, ways of writing, socially, one-to-one, in ways I have welcomed and will learn from".

Other tutors had found teaching on their courses to be both rewarding and enjoyable. In one case, the tutor felt able in future to use some of the teaching techniques which he had tried on the course with undergraduates. It was planned that both the tutor and teaching assistants would make seminars more structured, invoking more responses from undergraduates and giving more feedback. The tutor had tried things which, "in the past were just kind of educational babble, during the academy they worked really well".

Another tutor felt that the teaching was "incredibly valuable as a piece of staff development" as having a background in teacher training meant that the process of working with both young pupils and gifted and talented was useful to her work with undergraduates. The financial rewards were also mentioned as a reason for undertaking the tutor role in the first place.

4.2.2 Workload

Undoubtedly, all tutors to whom we spoke to had put in a great deal of work to ensure that the courses were a success. The nature of courses, whether they were highly structured in content or more free flowing, impacted upon tutor workloads. There were several elements identified. Firstly, the amount of work required in preparation prior to the course; secondly, the length of the working day during the three weeks; and finally, the additional work required of tutors of which they had not been aware.

Three tutors spoke at length about preparation time. After commenting on how the course had interfered with his "personal life to a great extent, having to work weekends and during my birthday", one added "I have not done so much work during my nine years of teaching here at the Department". The Chemistry tutor noted,

> "The amount of work was appalling. The preparation for this course was enormous. I think it differs from subject to subject. For Chemistry, I had to do two hundred pages of typed instructions plus preparation for practical sessions in the lab. It took me four weeks just to do the preparation, a total of seven weeks work and I got paid for three weeks of work."

Chemistry probably generated such high workloads as students were not used to using any of the lab equipment, there were integral safety issues and the days were heavily structured in terms of content. Other tutors also felt that their workload was relatively heavy, although in terms of planning, it seemed that, because of the nature of their subjects, they were able to concentrate more of this into the three weeks, yet this naturally extended the length of their working day,

> "I did one week's preparation. They [Chemistry] did three. I prepared all my classes the week before. So I'd get in here at, say, eight and stay until five, go to the pub, go home and do three hours work at home. So it was a longish day for those three weeks, but it wasn't. . impossible. I wouldn't be a teacher if I had to do that all of the time, but for three weeks it didn't seem that problematic, except, as I say, everything else fell apart."

For tutors with young families, the giving up of time during school holidays was viewed to have been " a high personal cost . . .particularly because it wasn't just during the day. It took my evenings as well."

> "The workload is what I devised. It has been workable: O.K., but not easy going. Nine to five daily can be quite a stretch, both as to one's responsibility and the actual workshop - leading or working with others to do that, with the constant expectation of interesting work from students, the responding to their work, etc., etc.."

Report-writing was an issue with tutors as they had not understood that this would be a requirement when they agreed to teach the course, "I was asked to write reports for every individual child, three pages per student, just one day before the school started!" One tutor noted,

> "It is of vital significance here to say how crucial it has been to have excellent, committed deputy course leaders and an outstanding assistant for the three weeks. The added workload of report making might have broken me, or I just wouldn't have got it done, without their very hard work on it."

A suggestion was made that the workload issue could be resolved by introducing a form of Sabbatical for tutors to prepare to teach such courses in future, as "the system of reimbursing tutors needs to be looked at again". One tutor noted, "Certainly the money was a great advantage. If it hadn't have been for the money I probably wouldn't have. I know that sounds awful, but I've got so many other things to do!" Teaching on the courses put tutors behind in their research. They spoke of having to catch up and the difficulties of being away from their ordinary work for a sustained period.

One tutor, with experience of school teaching, was able to comment upon the amount of work required, compared with that needed for a mainstream class. It would seem that the ability of the students meant that they needed, "less scaffolding, less planning compared to a mainstream class". However, students were found sometimes to lack motivation to work, perhaps because, by the very nature of the Summer School, they were working in holiday time or possibly because of the intensity of the course.

4.2.3 Course budgets

One other concern of tutors was the budget allocation to courses. One noted, "It wasn't clear what budget there was for support". Some had a sense that gaining sufficient financial resources to run their course had been difficult and required much more justification than was necessary. Some of these feelings may have been quelled had there been greater transparency and more meetings across disciplines. One tutor talked of it being his "understanding" that another subject area had spent many times what he had applied for in order to set up their course which had led to "an abiding resentment". The tutor had, "put in an application.. and was initially turned down. At this point I said, 'hang on!'" Whilst it was acknowledged that some subjects naturally generated high costs, it was seen as unreasonable that relatively small expenditure in other subjects was questioned. One tutor noted, "All things considered the budget will come in under two thousand pounds. I just don't see, with twenty people, I just don't

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see how you could do it for less". One tutor questioned why the bigger budgets could not be fully supported without sponsorship, and in turn, resented the fact that he had been the one having to find sponsors for the course, thus adding to his workload in an unexpected way.

4.2.4 Course facilities

Throughout, Chemistry generated different issues to other subject areas. Facilities on the Westwood campus were not adequate for the course to run on the site and so the laboratories on main campus were used. The transportation of students between the two sites had implications in terms of organising time and meetings. The R.A.s were praised for their help with this. However, this further impacted upon the workload of the tutor, who had to stay with students during their lunch period and therefore expanding his workload. He added that when he raised concerns about this, he "felt that I was treated as a second class citizen". It was interesting that the Environmental Studies tutor, normally based on the Westwood site, felt that she was really helped by being so close to her office and therefore able to use her own computer and usual photocopier. She questioned how those normally based on main campus could function without a telephone and office and saw this to be an important aid in making the three weeks run smoothly.

4.2.5 Organisation of the Summer School.

Tutors raised some concerns about the day to day running of the summer school, being informed either through what they had heard from students or from what they had experienced. Consequently, each had comments on different aspects of the organisation. From direct experience, two tutors commented on the length of the afternoon session, as they would have preferred to have had a longer morning or even shorter teaching hours, with the teaching day ending earlier. Added to this, it was commented that the lunchtime meal given to the students was unsuitable, being based upon snack type foods and fizzy drinks which two tutors speculated had affected the performance of their groups in the afternoon. The close supervision which all students had at all times was also considered problematic. Although the tutors appreciated the rationale for this with respect to child protection. More freedom to move between buildings unsupervised and in the evenings, at least for older students, was considered as more appropriate.

4.2.6 Tutors' reflections on the students

Motivation

Overall, student motivation was high and behaviour was good. Ther5e were a small number of problems. In Environmental Science, one student had not wanted to come to the summer school, "he was being paid by his parents to attend". He was difficult and uncooperative in class and did not complete any work. The tutor felt that the student should have been removed at a very early point in the course. Not only did she feel that he spoilt the atmosphere in the class but that he should not have been awarded a certificate because it devalued the work of all the other students. She advised a Certificate of Attendance in preference to one of achievement, but had been

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disappointed that no procedures were in place for such students as the R.A.s informed her that some students on other courses had behaved similarly.

In a sense, this point returns to the start of this section and the selection process, as the child had a very strong application on paper, but on reflection, the tutor remembered that a great deal of evidence had been submitted by his parents and none from his school, thus perhaps indicating that very keen parents had driven the application. This reinforces the need for evidence from different sources, including schools.

Ability and achievements

One tutor commented that the "the whole language of gifted and talented [was] disturbing". It was felt that rather than labelling children in such a way and, by inference, making them appear to be exceptional in all areas, it would be more appropriate to say that they were "gifted at . . ". There was also concern expressed relating to how schools would cope with such pupils, "who go back to school and, at least in theory, their performance has been accelerated".

Inexperience of tutors with the age groups meant that some felt it hard to judge whether students were gifted, yet they were still able to comment that they found the students to be very quick at picking up new things and that they were "much more clever or academically able than [had been] expected". The Chemistry tutor found that students moved quickly through classroom work but were slower in their laboratory work as it entailed the use of new skills and equipment, which would not have been available to them in the course of their normal schooling. However, the Philosophy tutor was surprised at the slowness with which some students were able to read,

> "Some people read what seemed to me a reasonable amount, i.e. about a third of what I'd read but some people would in half an hour read two pages, and that struck me as astonishingly slow. I don't understand how you could be in some terms classed as a gifted child if you were so slow at taking on information".

He added that some of them were "certainly gifted . . [but] it's got to be borne in mind that I have no experience whatsoever of children". He qualified his definition of gifted by saying that they were "enthusiastic", "self-disciplining", "good at talking to each other" and consequently "really quite mature" and added that their written work was probably no better than that of "ordinary" children. It seemed that by his definition, "giftedness" was more linked to motivation and maturity than a special aptitude for the subject. This was in line with the views of the Environmental Science tutor who had more experience of teaching children. She considered "two or three" of the group gifted but the others were

> "Bright kids, probably at the top of their class, very hard-working but just lack that, I don't know what it is, it's just that something that's indefinable . . .but, in terms of the Government's current definition of gifted, they were gifted".

In the case of Creative Writing, the tutor felt that the students were,

> "Certainly gifted and talented, while no doubt varying in the types and degree of it: some exceptional students and all very capable and interesting . . . Knowing what I

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know of the students now, I might have made one or two different decisions as to whether to accept them or not, but the people we chose have, I think, almost all measured up to the Academy's purpose".

In Drama, there was also seen to be an element of 'giftedness' amongst the students. However, there was again a reservation on the part of the tutor,

> "I believe that they were but in a narrow way. I would say that they were intellectually able in that they were able to handle intellectual discussions nicely. However, when it came to actually getting involved in practical things and showing creativity, they struggled. So it seems that there is a creativity gap".

Students were seen as having made much progress and one tutor made comments which reflected the views of some of the students who were interviewed in that there was a sense of common purpose amongst all of the Summer School participants,

> "The students have been a pleasure to work with. The growing and intense involvement of most of them, and even those who have found it harder to develop their writing or to work as a group, have said they are having an important time for them".

One tutor felt that an induction whereby students were encouraged to develop social skills and boost confidence should have been integrated into the Summer School as it would have been of benefit to those in his group. However, tutors generally noted that the social side of the course was also valuable. One stated that whilst they were mixed in terms of personality and achievement, as he had expected, he could not have foreseen the, "warmth, friendships, to and from, common bonds, etc. that have developed and not least the quality of their work".

4.3   Analysis of SAT1 Results

The students attending the summer school were given the SAT1 test at the end of the summer school. These results were compared with those of College bound and grade 7-8 (12-14) year old students, these being the only data available.

The summer school students aged 12-14 scored well above the US mean for students of the same age. Also, the overall mean for the Summer School students is higher than for college bound seniors (2001) in the US (556 v 506 for Verbal Reasoning; 559 v 514 for Mathematical Reasoning). This is despite two factors. Firstly, the Summer School students included younger children and scores tend to increase with age This was found among the Summer School students whose mean scores increased from 447 to 648 for Verbal Reasoning and 512 to 623 for Mathematical Reasoning when comparing students 11-12 years against 16 year olds. Secondly, the Summer School students had not received preparation in the way that is common in the US.

The Summer School data also indicate differences in mean scores between the courses, with Chemistry students having high scores on both tests; Creative Writing students having high Verbal Reasoning; and Maths and Philosophy students having high Mathematical Reasoning scores.

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Overall these results suggest that the Talent Search has led to a group of students attending the first Summer School who, overall are of high ability, although there are some variations which will be worthy of consideration in future searches and selections.

4.4 Reflections of the Interim Director, Vice Chancellor and DfES Project Manager

The Interim Director was interviewed about 6 weeks after the Summer School, and about 5 months from the launch of the Academy on 19th February. A permanent Director would take up post on 1st October. This was a good time to reflect on the first Talent Search and Summer School. This interview was cross-validated with interviews with the Vice Chancellor of the University of Warwick and the DfES Project Manager.

4.4.1 The Successes

The Interim Director was clear of the success to date: We've come a hell of a long way in a very short period of time'. He put this down to two factors. First, the support from the University 'from the Vice Chancellor downward'. He identified this as part of a general characteristic of the university's approach:

> 'It's a feature of this institution that when we win something like this contract and we say we're going to do something, there is a huge element of pride associated with delivering and delivering well, and being seen to deliver.'

This permeated the whole organisation. The Vice-Chancellor confirmed this commitment although he stressed this was not only his, seeing his role as a facilitator and to show institutional commitment. He had had experience of a similar organisation as a young professor and was committed to supporting the development of the Academy.

He considered there is a lack of celebration of the talents and achievements of young people, especially some groups, including those from more disadvantaged backgrounds. The Academy was 'a vehicle to identify these young people'. Warwick, he considered, had much to offer including the presence of the Institute of Education and its geographical location.

Secondly, three groups of staff were identified as having made particularly important contributions. The permanent members of the Academy staff

> 'were pitched in from the middle of May onwards, into a completely new arena for all of them and required to pick things up that weren't written down by and large and do them, or invent things that had to be done in a very short period of time and did so with commendable commitment and intelligence';

the academic staff 'who we got on board much later in the day than you would like', and the residential staff, most of whom were Warwick students who 'with only one exception out of 13 staff altogether were absolutely excellent'.

Thirdly, the support from Johns Hopkins University who had run their programme over 20 years, particularly the reassurance from the consultant who visited several times, was 'absolutely invaluable'.

Finally, he believed that

> 'It's a bit of a cliché but I think it was an idea whose time had come and that there was a sense in which this was new and exciting and lots of people found it very easy to buy into in a way perhaps that would not have happened five years ago.'

Finally, the Interim Director considered the Academy, and its 1st Summer School had been a success, a view confirmed by the Vice Chancellor and Project Manager. The Vice Chancellor considered that progress had gone 'well and slowly with no major problems'. He was pleased that there was a 'reasonably good balance of young people with 50% whose parents were not graduates'. Contrary to the concerns expressed by outside commentators before the launch, the Academy was not simply providing more resources to pupils at independent schools.

The DfES Project Director also considered the initiative so far had been successful: "Given the time constraints I think it went as well as expected, by and large". He saw this very much as a pilot, which indeed would stretch through to the 2003 summer school. The work so far had demonstrated that 3 weeks summer schools were feasible, an important finding as 'the jury was very much out on that one when we started'.

4.4.2 Identification of the top 1% and 5%

The Interim's director's views on substantive elements of the first Talent Search and Summer School are included with the appropriate sections above. In addition he had views on the implications for the future work of the Academy. One concerns the question of identifying the top 1% and top 5% of students. As indicated above, in practice this turned out to be highly problematic in several of the subjects. For example, in Creative Writing the focus in selection was on samples of work rather than exceptional performance. This had been intended as a course for the top 1% - did this occur? The Interim Director's opinion was that

> 'Although I feel with a degree of confidence that most of these students on that course at the end of the day were either in the 1% group or in, you know, certainly the top 2% on the basis of academic ability, it wasn't strictly speaking a 1% course.'

The Maths course was considered to be less problematic in that sense, and he had pre-selected students thought to be within the top 1% for the tutors to consider, but rather threw up a different issue – three applicants whose ability was considered so far ahead of the others' that their inclusion would distort the course. Special arrangements were made for these, but in the future 'I believe we will be able to make provision for that calibre of student because there will be more of them and we will be able to grade the Maths courses…. top of 1%, and 1% group'.

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There is a consensus among educationists that the term 'gifted' should be applied to pupils functioning above the 98th – 99th percentile nationally. Freeman (1997) suggested however that when relying on standardised tests to identify able students, a 20 per cent, rather than 1 or 2 per cent, in any area of learning, should be accepted to avoid unrecognised potential. The guidance provided to schools has not only used the term more broadly than that (5% – 10% rather than 1%) but has also referenced against each school's norms. In some of the schools evaluated by the Nord Anglia project (DfES, 2001) therefore, pupils in the "gifted" cohort may be regarded as having only average ability elsewhere. Hence the problematic issue of selection is general and not specific to the National Academy.

4.4.3 The Problems

The speed of getting the initiative operational led to its implementation while staff were being appointed. Indeed, at the time of this report not all senior positions have been filled. Both the Vice Chancellor and Project Manager noted this as a significant problem, leading to a 'lost 2-3 months' (Vice Chancellor). The knock on was that the next stage was also put back, not just the initial summer school.

The Talent Search and particularly the Summer School were high profile events. The media ran a number of stories and the Summer School received a Ministerial visit with attendant media interest. This was a potentially problematic combination. In addition there were a number of operational difficulties with respect to ensuring resources were available and time for staff briefings. On the other hand, the financial planning of the Summer School was sound and the Interim Director felt supported if he went a little beyond the budget, 'I knew I'd get back-up'.

In addition the Academy suffered from the problem which was later to hit the headlines as the new school year approached: the difficulties experienced in checking applications for staff with the Criminal Records Bureau. In the event the Academy took a number of actions, in consultation with the Department for Education and Skills to take account of their responsibilities with respect to child protection. As the Interim Director noted 'It was very, very messy, very confused'. Nevertheless, the actions taken were carefully thought out and responsible.

The DfES Project Director considered that 'it's only with hindsight that I can identify ways in which we could have been more effective'. He did have concerns about the way that the tutors were allowed to develop their own courses; he would have preferred a more structured and systematic approach across subjects.

> "I thought that Warwick adopted quite a '1000 flowers blooming' approach whereas I would have tried to have been quite a bit more specific at the outset, in terms of setting a common framework for courses and some kind of quality standard".

He also noted that reports in press cuttings suggested "that a fair bit of the provision was what you might class on fairly traditional chalk and talk type activity'. However, he noted that these were anecdotal comments and appeared not to relate to all the subjects (e.g. drama and creative writing).

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5.   CONCLUSIONS

The 1ST Talent Search and Summer School have been undertaken within the time allocated, and with a high level of success. The Talent Search was successful in attracting interest of over 2200 people and received over 500 applications. The Summer School met its target of 100 students, and was considered a success by the participants and the tutors, both academically and socially.

Despite the very short time span in which the Academy was set up and operational, there were few difficulties that had any substantial negative impact. Indeed the most significant was outside its control, namely the problems with the process of vetting staff under the child protection requirements, where the problems of the Criminal Records Bureau led to a huge backlog of applications. The Academy was caught up in this and had to take contingency action in consultation with the Department for Education and Skills.

The application process did not operate as planned as few applicants took the SAT 1 Reasoning or the World Class tests. This resulted in a lack of consistent data to allow applicants to be judged on the same measure. The alternative information provided, including the results of the Key Stage SATs and personal statements were useful, but there was a lack of consistency across applicants. This proved particularly problematic for some tutors selecting for the Summer School courses.

With respect to the future of the Academy, there are several lessons to be learned, and there is clear evidence that Academy staff have already started to take these into account for the next phase. There is now time for implementation of the 2nd Talent Search and to plan for the 2nd Summer School, to ensure wider publicity and to improve the data capture and recording. The use of a standardised test for all applicants will need to be organised and the timing of testing sessions which fit in with the Academy's timetable will need to be publicised. In addition we identify one central issue for consideration which goes beyond these essentially practical concerns, selection.

The assumption underlying the Academy is that it is possible to identify the top 1% and top 5% of 11-16 year olds. There are several issues here. First, if this were to occur with comparability across applicants then a standard metric would be helpful. This may be provided by the use of, say, the SAT 1 Reasoning test. As so few took this initially it did not make a major contribution to this pilot. However, the analysis of the tests given by the Academy itself to the Summer School participants provides some support for their use. However, these results suggest that Summer School took some students who were not in the top 1% or 5% on this test's norms, although the mean scores were high. This does not necessarily mean the students were not all appropriate. Rather, it points to the need for caution with a US standardised test, whose use in the US is frequently supplemented by practice of the approach. Research is needed to evaluate the SAT1, and indeed UK measures such as the World Class tests.

Secondly, however, is a conceptual issue regarding the nature of the 'top 1 or 5%'. Use of a particular test will provide a standard metric, but there is a separate question regarding the applicability of a single measure to the concepts of gifted and talented. For example, is it reasonable to choose the top 1 or 5% on this basis and then offer or allocated them to subjects as diverse as, say, Maths, Drama and Creative Writing? This

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can be justified but an alternative approach would be to seek out the top 1 or 5% in each of these domains. This will become a more significant issue if other aspects of talent are brought to the fore. The latter is also more in keeping with current thinking with respect to intellectual ability. Interest has increasingly developed in variation in abilities rather than a single global ability, perhaps made most familiar by Gardner's concept of Multiple Intelligences.

This issue has implications throughout the Academy's operations from selection of students as appropriate for the Academy itself, to the selection processes for summer school courses. There are also important practical issues. The use of one measure such as the SAT 1 Reasoning test will increase the consistency on which decisions can be made, but reduce the variability of evidence which may be found useful in different subjects. This can be offset, of course, by maintaining the opportunity to provide other information including key stage SAT scores and a personal statement. It would also help if more guidance were provided for submitted work, and all applications were accompanied by a standardised school report.

However, if future talent searches are to seek young people who are gifted or talented in, say, dance or music, then alternative measures are likely to be necessary. As stated above, this issue is central as it is a key conceptual concern as well as having important practical considerations.

Finally, it is important to consider the next stage of development of the Academy. As the Vice Chancellor observed, it cannot simply be a National Academy for offering Summer Schools. Given the many and varied initiatives in this field, the Academy must develop a clear role. His opinion was that it must 'embed itself in the gifted and talented development and be a core component, but not the whole'.

Our evaluation has shown that the initial phase of the Talent Search and 1st Summer School has had some difficulties, but these may justifiably be described as teething problems. None was major. The National Academy is now operational and has the experience of a successful summer school on which to build. Future summer schools will differ as partner institutions are involved, and this will have implications for the selection process. Also, the provision for those considered talented rather than gifted is still to be developed.

There are issues identified by our evaluation which will need to be addressed, and the National Academy will need to identify and develop a clear role within the national provision for gifted and talented young people.

Nevertheless, on the basis of our evaluation, we consider the progress made so far, and the initial plans for the future, suggest that the initial phase may be considered a success.

Appendix 1 Summary of Student Views

Positive Aspects	Negative Aspects	Benefits	Drawbacks
Strong parental input / involvement	Underlying learning difficulties: were they met properly?	Intellectual gains: expanding their knowledge and change their perspectives / views. Stretching their limits	Length of Summer School
Schools' role to facilitate the application process	Schools had limited access to information re Academy	Social gains: interacting with like-minded peers, meeting people with similar interests from different cultures	Intensity and rigidity of daily schedule, lack of free time
Immediate submission of application	Confusion on taking standardised tests; optional or mandatory?	Personal development: Test your limits and explore self-confidence	'Compulsory fun'
Application form was easy to complete	Unclear what documents to include in the application	Good opportunity to be exposed to subjects not included in the National Curriculum	The application of a fee in the future
Summer School was well organised. Residential Staff were 'excellent'	Limited range of subjects	Good opportunity to approach subjects thoroughly and in depth	Limited publicity of the Academy
The possibility of establishing an on-line community was welcomed	Inconsistency regarding preparation for Summer School	Benefits regarding future education and career	
		Content was interesting and challenging. Teaching was good and tutors' attitudes were positive	

Appendix 2 Some key points about the Talent Search

- The Talent Search is designed to identify and recognise exceptional young people who are in the top 1% or 5% of pupils in England in terms of their academic ability.
- The Talent Search is open to 11-16 year olds who are resident in England and being educated in England.
- To take part in the Talent Search they will need to complete the Talent Search registration form and provide evidence of their academic ability.
- The Academy will consider evidence of ability (rather than just evidence of attainment) from a wide range of sources including National Curriculum tests, other tests and assessments pupils may have undertaken and recommendations from teachers.
- The detailed guidance sets out the range of admissible evidence of ability. The Academy will use the first Talent Search to inform decisions about the best approach for future talent searches.
- There is no predefined weighting for different types of evidence, but judgements will take into account the range of evidence available and any extenuating factors or circumstances recorded on the application form
- Those who wish to be considered for the first Academy Summer School, taking place from 22 July to 9 August 2002, must take part in the Talent Search and submit their applications by 3 May.
- Applicants can submit their Talent Search registration forms directly to the Academy or through their schools.
- Participants will be asked to co-operate with the monitoring and evaluation of the Talent Search
- We expect that about half of the places on the 2002 Summer School will be allocated to those taking the SAT I Reasoning Test or World Class tests as part of the Talent Search.
- All successful students who are taking part in the 2002 Summer School will be asked to undertake a short assessment designed to establish their prior knowledge and understanding of the subject, and this will be used by those designing the courses to refine them to meet the needs of the participants.
- The Academy is encouraging Talent Search participants to apply to take either the SAT I Reasoning Test or World Class tests in maths and/or problem solving for pupils up to age 13, so that the suitability of these tests for this purpose can be assessed. This is particularly encouraged for those who do not otherwise have strong evidence of their ability.

For more detailed information, please see the Academy website at www.warwick.ac.uk/gifted

Appendix 3

Giftedness: Shifting discourses, terms and definitions. Consideration of the wider picture and the role of the National Academy

During the last decade the great debate on understanding and defining high ability has challenged stereotypical views on what giftedness entails. A major shift from considering IQ scores alone to acknowledging environmental influences on ability and performance in identifying gifted students has occurred. Initially giftedness was typically defined in terms of IQ with thresholds ranging between 120 (10 per cent) to 140 (.8 per cent). This definition has been expanding to include notions of artistic / sporting talents, social giftedness, and diverse cognitive talents, all encapsulated in theories of 'multiple intelligence' and 'multiple creativities'.

Increasing recent research points to the multifaceted nature of intelligence and the consequent need for assessment to rely less on standardised assessments of a restricted range of skills and abilities. Sternberg's Triarchic Theory of Human Intelligence (Sternberg, 1985; 1997) has provided a holistic view on intelligence by discussing its analytic, creative and practical components. Furthermore, Gardner's (1985) theory of multiple intelligences moves away from a unitary construct of intelligence to view human ability in terms of nine constructs, namely linguistic, musical, spatial, mathematical, bodily-kinaesthetic, interpersonal, naturalistic and spiritual. Although there is interfacing and potential overlapping, it is argued that these constructs are independent and a person can be gifted in any one of these areas.

Farnham-Diggory (1994) formed a typology to describe various types of knowledge, namely declarative (verbal learning), procedural (skill learning), conceptual (concept attainment), analogical (one-trial learning) and logical (problem solving). More specifically:

> *Declarative knowledge:* is usually acquired through verbal learning, e.g., verbal exchanges, writing, mathematical notations.
> *Procedural knowledge*: is evident in action sequences. Acquisition of this knowledge underlies skills learning including three phases of skill development, i.e., analysis, practice to the point of automaticity, and attention management.
> *Conceptual Knowledge*: is knowledge of *categories* and *schemata.* Concepts come into existence through repeated exposure to examples that are similar in some respects and not in others.
> *Analogical knowledge*: is also called imagery or sensory imprint. It involves sensory stimulation and the memory of a sensory pattern.
> *Logical Knowledge*: is a system of causal implications, a mental model of cause and effect, ability for problem solving.

Able and highly able students are expected to have the faculty to acquire, demonstrate and transfer most or all of these types of knowledge successfully. In practice however this is not always the case. It has been argued that a bizarre notion of equality has permeated the British education system in terms of putting pressure on able students to under-perform to achieve 'sameness' (Eyre, 1997). This notion of equality needs to be challenged to ensure that need, opportunity and entitlement and not sameness determine the quality of educational provision for able students. Gifted education should

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not adopt a 'colour-blinded' approach to difference but provide educational experiences that serve students with diverse needs and abilities.

In the gifted literature there is no one specific term accepted to define this group of children. Definitions vary to include terms such as able, more able, highly able, gifted, talented and bright to mention a few. These terms denote various degrees of exceptionality and thus may be contentious as we enter the 21st century, where inclusion, opportunity, access and entitlement seem to dominate the discourse on able students' provision further contributing to the 'equity vs. excellence' debate. In recent research studies, there is an increasing tendency to use the term able (more able, highly able) although programmes designed and implemented to meet the needs of this group are called 'Gifted and Talented'. For the purpose of this review the terms gifted and able / highly able are used interchangeably.

The Social and ideological base of 'giftedness'

The concept of giftedness itself can be best articulated by understanding the ideological, philosophical and political climate of education in this country over the last decades. There have always been tensions between notions of equity and excellence, of ability and opportunity, and of social/educational inclusion and identification/provision for highly able students. By underestimating the important role that opportunity, access and entitlement play we may perpetuate the notion that excellence can be found in areas of social / cultural privilege only. The need to link excellence with access, inclusion and opportunity has become increasingly important as we move away from the notion that academic achievement results from ability only, including other factors, e.g., opportunity, support, motivation and encouragement, that have been shown to affect educational attainment (Lowe, 2002).

A continuum of interests, talents, ability, opportunity and achievement rather than clear-cut terms determine the provision for both the able and less able students. Freeman (1997) suggested that instead of continuing searching for the most appropriate definition of giftedness and talent, it would be more beneficial to look at the interaction between the child's potential and the opportunities for life-long learning. This may enable us to understand how external factors (e.g., learning opportunities, resources, expertise) in children's learning environment and early experiences shape their cognitive and academic development.

Bourdieu has examined the significant role that the dominant culture plays in the access and provision of high quality education in a study of the French education system (Bourdieu, 1973). He coined the term 'cultural capital' to define the subtle ways in which social/cultural influences, language, system of beliefs and values on education and the construction of knowledge influence children's social interaction, educational attainment and career aspirations. He argued that cultural capital is the product of education with the child's early social environment being quite influential. According to this analysis, a child from an educated and a socio-economically privileged background acquires cultural capital and thus he/she is more likely to achieve academically, whereas a child who experiences social/cultural and economic deprivation is more likely to find the school environment, activities and expectations irrelevant and even hostile.

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In a DfES-funded evaluation (Nord Anglia, 2001), a number of schools admit that the biggest imbalance in their cohorts of able students is in terms of social class (suggesting perhaps that the lack of cultural capital is a significant issue in underachievement). A small number of schools miss the point over under-representation suggesting that gender, racial or social groupings are irrelevant, they simply look at ability. This reveals a failure to understand underachievement and its contributing factors.

Ways of identifying and selecting the able

Test scores / results:

Most schools that participated in the Nord Anglia study started by using just exam or test results such as National Curriculum Assessments (SATs)and some still rely too heavily on those indicators thereby failing to identify able underachievers. In fact, some able students for diverse reasons perform badly in tests, perhaps because of their tendency to look for complex answers instead of applying simple rules (Eyre, 1997a). This has important implications for teachers who are reluctant to recognise potential in pupils who are difficult or not already producing good work or achieve high scores in standardised tests.

Measures of general cognitive ability (IQ) are widely used despite reservations about the validity of the results and their liability to cultural and societal bias. To some extent, they are considered to be useful in terms of predicting academic performance (Freeman, 1998). There are many different kinds of assessments at schools that measure cognitive ability, including baseline assessments used for very young pupils at school entry and national curriculum tests.

Teacher nominations:

Experienced teachers are well placed to identify and nominate able students. Teachers are in the position to comment upon the specific aspects of students' performance and provide a holistic picture of their strengths and weakness. This ability needs to be further encouraged in that it has implications for professional training and development. Montgomery (1996) suggested that checklists are helpful in guiding teachers' identification of able pupils. The development of these lists relies on traits and characteristics that able or gifted student are thought to display. However, they may be restrictive in terms of asking the teacher to categorise students' performance rather than developing a narrative to describe their overall profile.

Self-identification:

This refers to identification by provision in terms of allowing children who wish to join special enrichment programmes for the gifted to work on a specific subject area. If they are able to go through with these programmes then certain areas of ability are identified. Cropley (1995) pointed out that students identified via this approach succeed almost as often as those identified via other ways, e.g., IQ scores.

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<u>Parental input:</u>

In the Nord Anglia evaluation (DfES, 2001) the involvement of parents in identifying was found to be variable, ranging from complete involvement (a willingness to consider parental nomination, detailed information to parents on the criteria and involvement in provision) to no involvement at all. This was often indicative of the school's approach. Some schools gave the impression of very clearly labelling their gifted and talented cohort and holding them up as some kind of beacon whilst others were almost embarrassed about recognising them. The majority of schools appear to have taken what they see as a pragmatic view. They tell parents if they ask but do not broadcast their criteria and they use information from parents as a piece in the identification jigsaw. They try to give out the message that good quality provision for their more able pupils is part of their overall provision aimed at enabling all children to achieve their potential.

The needs of gifted children

<u>Educational / Academic Needs</u>

Gifted children, by definition, are "unusual" when compared with same-age children, at least in cognitive abilities, requiring different educational experiences (Kleine & Webb, 1992). Taking into consideration gifted children's ability to integrate most or all the types of knowledge stated by Farnham-Diggory (1994), (e.g., analogical, mathematical, conceptual, analytical), the classroom should provide opportunities to foster clear, critical and creative thinking with a focus on higher order thinking. The pedagogical importance of critical thinking has been increasingly recognised, especially since the Dearing report (1997) places an emphasis for students to develop the need to 'learn how to learn'. Being in an educational setting that does not cater for gifted children is likely to make the child either conform to the expectations for the average child or be seen as nonconformist, both likely to result in under-achievement.

Intellectual challenge is the most important curricular need for gifted children. This need is acknowledged in the House of Commons Education and Employment Committee Report (1999) which stated that gifted children 'need the right blend of challenge and support to fulfil their potential' (p. xi). If the challenge from the curriculum or classroom discourse is not sufficient then gifted children tend to become bored resorting in daydreaming with their academic achievement suffering greatly (Freeman, 1998). Such a situation can be demotivating and demoralising resulting in teachers having low expectations for their able under-achieving students. The main trait of gifted students is high task commitment and perseverance and thus being in a learning / academic context that does not allow them to externalise and use these talents can be very frustrating. A good fit between interests, abilities and curriculum provision is thus essential.

Children who are gifted routinely maintain consistent efforts and high grades in classes when they like the teacher and are intellectually challenged, although they may resist some aspects of the work, particularly repetition of tasks perceived as dull. Some gifted children may become intensely focused and determined (an aspect of their intensity) to produce a product that meets their self-imposed standards (Berkley, 1990).

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Gifted children can work independently and this has important implications for developing effective work habits and encouraging resourcefulness. Autonomous learning or the ability to regulate learning by making decisions as to what steps need to be taken to initiate learning, organise incoming information, maintain concentration and motivation can be facilitated by adults in what Vygotsky calls 'the zone of proximal development'. For gifted children however, teachers' involvement may interfere with the self-regulated learning in an unproductive way, especially if it is the wrong type of teaching (Freeman, 1997).

Nisbet (1990) referred to certain teaching methods that are likely to support autonomous learning. These include:

Talking aloud: The teacher talks about the process of solving a problem or tackling a task. This can be helpful in developing metacognitive skills, or what Gardner refers to as 'intrapersonal intelligence', in terms of reflecting on one's own thinking processes.

Cognitive Apprenticeship: This refers to ways of demonstrating the processes when handing a complex task. Conceptual knowledge is exemplified and situated in the context of learning.

Discussion: This gives the opportunity to reflect and communicate thoughts and processes needed for tackling / completing a task.

Co-operative learning: This allows pupils to learn from each other, take each other's perspective when explaining complex ideas, engage in reasoned arguments and deal with conflict if and when arises.

Socratic questioning: This encourages students to elaborate and justify their thinking and arguments.

In addition to being autonomous learners, gifted children tend to work faster than their peers and feel the need to be allowed to work at their own pace where they can work fast or slowly depending on the activity (Freeman, 1995b). Fast pace can be attributed to their ability to grasp concepts quickly and to their good memories to retain huge amount of information. Thus, they need the kind of curriculum that will allow them to work at their own pace and go to a depth that satisfies them.

Creativity seems to be incompatible with traditional classroom and curricular structures where passing exams and adhering to the syllabus are of paramount importance. Failure to develop their creativity obviously results in able students' underachievement. They need to be encouraged to take a playful approach to learning and to explore many possibilities rather than following the syllabus strictly. Also, gifted children should be given the opportunity to develop new interests in order to uncover any unrecognised abilities (Freeman, 1997).

An overall profile of the gifted, based on the characteristics as presented in the Giftedness Scale (Linda Kreger Silverman and Elizabeth Maxwell), include characteristics /attributes such as:

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- ➢ Being an independent and autonomous learner (intellectual independence);
- ➢ Being resilient in terms of copying with failure;
- ➢ Being adaptable to changes;
- ➢ Being flexible;
- ➢ Don't feel threatened when facing challenge;
- ➢ Study something in your own time (above and beyond homework constraints);
- ➢ Use learning in an imaginative way in different contexts and flexibly; and
- ➢ Apply knowledge in new ways.

In summary, the educational needs of able students can be met by providing an appropriate curriculum with the right amount of challenge and support; mentoring; encouragement to learn from failure and apply their own learning styles with respect to creative thinking and fast pace of work; independence and resourcefulness; and advanced problem-solving skills.

Developmental and Social/Emotional Needs

To a large degree, the needs of gifted children are the same as those of other children in that the same developmental stages occur, though often at a younger age (Webb & Kleine, 1993). Gifted children may face the same potentially limiting problems, such as family poverty, social/cultural disadvantage, substance abuse and violence. Some needs and problems, however, appear more often among gifted children.

Socially, giftedness is not always acceptable; peer negative attitudes are pervasive, even in selective schools, with able children being marginalised and, in some instances, bullied (Kerry, 1992; Painter, 1996). Negative attitudes are not confined in the peer culture but extended in the adult communities and throughout life. Gifted children usually respond to that by 'playing down' their abilities to minimise peer pressure, resorting in under-achieving. Gifted children need several peer groups because their interests are so varied. Their advanced levels of ability may steer them toward older children. They may choose peers by reading books (Halsted, 1994). Such children are often thought of as "loners." The conflict between fitting in and being an individual may be quite stressful.

Gross (1993) refers to the dilemma that many gifted children face choosing either social acceptance at the expense of academic achievement or aiming for high achievement and become isolated. These children need to become aware of their intellectual strengths and develop social problem-solving skills to cope with peer pressure, especially pre-schoolers and primary-school able children who are likely to be resented by their peers because of their tendency to take initiatives in suggesting and organising activities, inventing complex games and setting the rules.

Learning good interpersonal skills is crucial for friendship formation and maintenance. Children tend to choose friends that are of similar ability and interests. Thus, gifted children are more likely to seek the company of older children or adults and form friendships with other gifted children (Gross, 1993). However, what presents as a major concern in gifted children is forming friendships with age mates.

Other developmental and social needs that able students may present include:

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Uneven Development. Motor skills, especially fine-motor, often lag behind cognitive conceptual abilities, particularly in preschool gifted children (Webb & Kleine, 1993). These children know what they want to do, construct, or draw; however, motor skills do not allow them to achieve the goal, most likely to result in intense frustration and emotional outbursts.

Excessive Self-Criticism. The ability to see possibilities and alternatives may imply that youngsters see idealistic images of what they might be, and simultaneously berate themselves because they see how they are falling short of an ideal (Adderholt-Elliott, 1989).

Perfectionism. The ability to see how one might ideally perform, combined with emotional intensity, leads many gifted children to unrealistically high expectations of themselves. In high ability children, perhaps 15-20% may be hindered significantly by perfectionism at some point in their academic careers, and even later in life.

Avoidance of Risk-Taking. In the same way the gifted youngsters see the possibilities, they also see potential problems in undertaking those activities. Avoidance of potential problems can mean avoidance of risk-taking, and may result in underachievement (Whitmore, 1980).

Multipotentiality. Gifted children often have several advanced capabilities and may be involved in diverse activities to an almost frantic degree. Though seldom a problem for the child, this may create problems for the family, as well as quandaries when decisions must be made about career selection (Kerr,1991).

Whybra (2000) suggested that it is important for gifted children to be given reassurance and have a mentor to talk to and receive advice especially when they need to choose among their diverse capabilities and decide what academic/career routes to pursue. Lowenstein (2000) and Stedtnitz (1995) suggested that engaging gifted children in enrichment programmes where being gifted in the norm and not the exception can support them socially and emotionally. In these programmes, gifted children are likely to display a good emotional intelligence in terms of being able to take others' perspective and infer about their thoughts and emotional states, and also displaying good leadership qualities.

Career Guidance and Counselling

The need for counselling for the gifted is raised in recent studies (Stedtnitz, 1995; Whybra, 2000). George (1992) makes a distinction between personal / social counselling and vocational guidance. The latter is particularly important for individuals who have high all-round ability in that it can be difficult to choose the best route in terms of deciding on a career (Freeman, 1995b). A mentor and/or a counsellor can direct them and help them to actualise their potential.

Teachers' views on gifted students

Providing gifted education especially in a society that does not necessarily value and/or reward intellectual challenge will require teachers to examine their views on giftedness and their teaching principles. This examination includes a close look at the values and

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the assumptions that teachers make about pupils' motivation, learning, behaviour and the pedagogues that are thought to be more appropriate for learning. Shulman's (1987) work mentioned the importance of both pupils' learning and the characteristics of the educational context, e.g., teachers' expectations and attitudes, suggesting a new theoretical framework to address teachers' world-view and role in teaching able students. There is increasing empirical evidence to suggest that a challenging classroom climate, one that a teacher's in-depth inquiry and conceptualisation are modelled by pupils, underlies the development of knowledge and problem solving.

Gifted pupils' learning processes and outcomes should not be approached in isolation from teachers' notions of and attitudes towards giftedness, pedagogy, knowledge construction, and the curriculum. The importance of the inter-play between teachers' views and pupils' social-cognitive development is stressed in a model proposed by Bruner (1987) which described learning as a complex interchange of 'language, teacher-pupil interaction and cognition'. According to this model, learning involves sharing and testing meanings and assumptions through social interaction and the ability to take others' perspectives and infer their mental and emotional states. An important mechanism within this transactional model of learning is 'calibration' (Bruner, 1987) which refers to adjusting understandings and interpretations that teachers and pupils hold.

Hart (1999) also refereed to different modes to describe the teacher-pupil interaction as being the base for effective teaching and learning.
More specifically, these are the

- ➢ Interconnective mode to explore possible links between the child and the learning context, e.g., teachers' world views, in order to understand the mechanisms that underlie children's responses to tasks and learning outcomes.
- ➢ Oppositional mode to challenge interpretations made by teachers and pupils by offering alternative perspectives on controversial issues. It seeks to uncover norms and assumptions that may be implicit in a particular judgement or point of view so these can be reviewed and evaluated.
- ➢ Decentered mode to challenge interpretations that are made from the teachers' f frame of reference or world-views so pupils have the opportunity to voice their views. This can provide important information about the meaning and purpose of children's thoughts and responses.
- ➢ Affective mode to examine the role of feelings in constructing knowledge and arriving in particular interpretations. Issues of pupils' self-esteem and self-confidence may be involved affecting the way pupils approach learning in terms of feeling confident with classroom discourse and maintaining interest and motivation.
- ➢ Hypothetical mode to formulate hypothesis by collecting information and facts before delivering a judgement. It encourages flexibility, flow of ideas and the ability to take different perspectives particularly on issues of moral and social development.

Teaching and Learning for gifted students

Effective teaching of able students depends on the extent to which teachers integrate their pupils' knowledge with other types of knowledge, e.g., curriculum content and

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background knowledge on specific issues, into their teaching plans. The way that this integration is achieved can be best described as a continuum of *interactive* and *reactive* teaching (Cooper & McIntyre, 1999). Interactive teaching places emphasis on pre-set learning goals and the demands of the curriculum, whereas reactive teaching takes into consideration the learners' needs and tries to adjust learning objectives in a way that accommodates these needs. In the interactive teaching model teachers' main consideration is to follow the plan with the learning objectives as stated in the national curriculum guidelines. In the reactive teaching the teacher is more likely to be flexible and modify the plan in accordance with the pupils' needs, interests and capabilities.

Furthermore, teaching approaches to accommodate the needs of able students can be grouped into 'structural approaches' and 'integral approaches' (Montgomery, 1995). Structural approaches refer to the structures and organisation of teaching and learning in the classroom. These include, mixed-ability grouping, acceleration, special schools, withdrawal. Integral approaches refer to the pedagogy, curriculum content and teacher's views and expertise to meet the needs of able students. Enrichment and teacher professional development are seen as integral approaches to teaching gifted children (Freeman, 1997).

Structural Approaches

Acceleration is a commonly used 'structural' provision for able pupils. It involves moving a child one or two years above his/her age group. This may cause difficulties in that cognitively able children may have not developed physical and/or emotional maturity resulting in under-achievement. Acceleration does not necessarily guarantee that the child will be mastering a content-accelerated curriculum, especially in primary school where teachers' knowledge of a specific subject may be limited (Freeman, 1999).

Recently, there is an international move towards the establishment of special schools, especially for certain talents such as music, sports and arts. The government vision of future gifted education in this country includes diversity of provision within the state sector (Lowe, 2002). The debate however on whether the existence of these specialist schools sits comfortably with current trends towards inclusive education continues.

Withdrawal is another structural provision for able students in terms of taking the child out of the classroom and assigning an activity that matches their learning style in terms of pace, self-directed learning and conceptual understanding. This can be achieved by structuring the school timetable in such a way to allow independent learning (e.g., projects, read more than the recommended handbook).

Integral Approaches

Enrichment involves enhancement of the curriculum, i.e.*,* extending core activities to challenge pupils who already have some knowledge and understanding of the concept presented and/or the activity, enabling pupils to place knowledge into a wider context where diverse methods of inquiry can be applied. Enrichment activities take place within the classroom although not exclusively with certain criteria applied to ensure effectiveness, i.e, approaching curriculum in depth, problem solving and creative thinking. This is seen as a good practice in that gifted children are not excluded from their peers. Also, the development of materials can be part of a curriculum enrichment

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to encourage students to develop their own learning route, fostering self-direction in learning.

Enrichment is also linked with the development of meta-cognitive skills, critical thinking and autonomous learning styles. Pupils may be encouraged to engage in:
- ➢ Independent thinking;
- ➢ Self-reflection;
- ➢ Understanding of the wider context of learning by drawing connections and transferring knowledge;
- ➢ Explore, justify and explain ideas;
- ➢ Apply problem solving skills; and
- ➢ Engage in debates and produce reasoned arguments.

Enrichment activities are also expected to support social-emotional development. For example, developing effective communication skills and leadership (Whybra, 2000) perhaps through involvement in extra-curricular activities, clubs or societies supports social interaction and increase popularity. Eyre (1997a) pointed to the crucial role of the teacher to be the cornerstone of a well-planned structure of pastoral support in that it is an important component of gifted education.

Issues regarding curriculum development, knowledge construction, social-emotional development and pedagogy should be an integral part of enrichment. In the evaluation carried out by Nord Anglia there was little evidence to suggest that many schools are finding time to discuss pedagogy. Where departments were meeting to discuss provision and amend their schemes of work, the product of those meetings was often a sentence in the schemes of work such as 'the provision of differentiated worksheets'. In most schools there was a very long way to go before discussion centres on the quality of learning experiences. It was also evident that the concepts of acceleration and enrichment are treated interchangeably.

Gifted education is expected to involve flexible curriculum structures in terms of integrating several curricula (Nelson, 1992):, namely:
- ➢ The official curriculum which normally exists including the textbook choices made by the school elaborated to include ways of enhancing problem solving.
- ➢ The social/cultural curriculum is the knowledge that pupils are expected to acquire if they are to become literate and educated members of their communities.
- ➢ The classroom curriculum consists of sets of explicit or implicit rules and social skills that pupils need to acquire in order to function properly. This is particularly important for able students who may feel the peer pressure against intellectual challenge.
- ➢ Finally, the hidden curriculum, which consists of teacher expectations and beliefs regarding giftedness and talent, and unspoken rules for social interaction likely to determine peer attitudes and acceptance.

Pastoral Support

Paradoxically, many gifted or able pupils suffer from quite low self-esteem. They appear to think far more about their perceived shortcomings than about their strengths. Unhappiness and subsequent under performance may also be caused by issues such as:

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- ➢ fear of failure;
- ➢ pressure to do well, sometimes from home, sometimes from within themselves;
- ➢ a desire to keep ability covert so as not to stand out;
- ➢ poor social skills with peers and a preference for adult relationships;
- ➢ disaffection arising from boredom;
- ➢ tension within themselves arising from high achievement in one area but not in others;
- ➢ preferred learning styles which are ignored by teachers;
- ➢ teasing from peers over perceived eccentricity;
- ➢ reluctance to write because written skills are greatly inferior to oral; and
- ➢ ability in areas not necessarily valued by the school.

In schools with effective gifted and talented programmes, good quality pastoral support was an essential ingredient within the school's drive to ensure all their pupils achieve their potential. They set out to raise low self-esteem, identify the causes of underachievement and inform teachers of preferred learning styles so that their teachers can teach the way pupils learn rather than pupils failing to learn the way teachers customarily teach.

Overall, within schools and G & T programmes, strategies that can be implemented to support both the academic and social self-esteem of able students include:

- ➢ Expand the basis of the selection criteria to go beyond standardised tests and measures of academic ability to include certain personality characteristics. Student characteristics such as being an independent and autonomous learner are likely to sustain both academic and social self-esteem in that they gain satisfaction from individual improvement, acquisition of knowledge and mastery of new skills.
- ➢ Avoid highly competitive environments that encourage social and academic comparisons among students.
- ➢ Develop tasks that encourage students to pursue projects which are of particular interest to them. Pursuing their own unique projects and feeling positive about the outcome should maintain a high academic self-esteem.
- ➢ Provide students with feedback in relation to criterion reference standards and personal improvement over time rather than engaging in comparisons based on the performance of other students (Marsh, Chessor, Craven, & Roche, 1995).

Obstacles towards the provision of gifted education

Over-reliance on standardised assessments

One-instance fixed assessments may be problematic pointing to the need for flexible evaluation. Most assessments focus on what a pupil can and cannot do, perhaps not including the possibility of performing at a higher level. This is true for both formative and diagnostic assessments that usually assess students' understanding of the national curriculum.

Perceptions of elitism

A disproportionally large number of able or gifted students come from middle-class backgrounds (Marjoram, 1997). They are more likely to be identified as able than are children from disadvantaged backgrounds. This is explained by understanding that high academic achievement goes beyond innate ability requiring motivation, interest, support, opportunity and good quality of schooling. Educational provision for able students have attracted quite a criticism in that it is perceived to have strong social class implications, i.e., a middle-class issue. Middle-class parents are likely to be more assertive placing demands on an already burdened educational system. Schools on the other hand fear that if they respond to the needs of middle class families they will be seen as being elitist perpetuating a class division. In fact the criticism is that if the school is ineffective in terms of providing for and supporting able students the group that is more likely to suffer is able students from disadvantaged backgrounds in that middle-class families usually are able to compensate for lack of provision and opportunities at school.

Climate of anti-intellectualism

There is an increasing climate of anti-intellectualism in western societies. Among students being bright is seen as 'not cool', reinforcing the 'boffin syndrome'. Academic success is accepted only if it results from chance or minimum effort possible (Eyre, 1997). As a society we value success in sports and music, whereas intellectual challenge and academic success are treated with ambivalence.

Teachers' attitudes towards gifted and able under-achievers

Certain misconceptions that are held by individual teachers or collectively by educationists and other child professionals regarding able students' academic performance and social/emotional development contribute towards unproductive attitudes. The most common misconceptions are that able pupils will always succeed in the education system and thus there is no need for special treatment; that able students may over-estimate their abilities resulting in not showing modesty or being arrogant; and that their needs require expertise and resources not readily available in schools (Eyre, 1997).

In the evaluation carried out by Nord Anglia (DfES, 2001), a number of teachers believed that gifted and talented students do not require social-emotional or pastoral support. They felt that these pupils already have lots of advantages. Moreover, a slight feeling of resentment was detectable in teachers sometimes as they described an individual as arrogant. Eyre found that teachers appeared to be less sympathetic towards able pupils in terms of focusing on these children's weaknesses rather than their strengths. Many teachers expect academically able students to be socially and emotionally mature and competent. Perhaps these attitudes may be attributed to lack of professional control and fear that their status is challenged. It can be a threatening experience for those teachers who are not prepared to teach highly able students. Interestingly, teachers experience guilt if they allocate resources or time to support able students.

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The principles that should guide the development of a flexible educational provision for able students are notions of knowledge as being shared, constructed and viewed critically, and that teachers must 'scaffold' or be open to different views, pace and aptitude to facilitate learning. Scaffolding is the process whereby the teacher provides structures that support the student to apply existing knowledge and transfer it to new situations (Cooper & McIntyre, 1999). Scaffolding is related to the Vygotskyan concept of 'zone of proximal development' referring to the range of cognitive functions that can be achieved when a pupil is guided by an adult to enable him or her to solve novel problems. This may be particularly challenging for a teacher who deals with a highly able student whose starting point may be much higher than that of their peers.

Some school co-ordinators have met with resistance from a number of teachers (DfES, 2001). Typically the kinds of things described include: -
➢ discomfort around the term "gifted";
➢ concerns about "elitism". Co-ordinators described conversations with teachers who resented the fact that only some "special" children could be taken out on school trips. One co-ordinator reported cutting back on activities outside school because they often led to accusations of elitism.
➢ a belief that able pupils already have more than their fair share of advantages; and
➢ failure to appreciate underachievement in able pupils.

Special Educational Needs

Able students who experience learning difficulties and any other special educational needs present a challenge to educators in that it is difficult to reconcile the dual nature of high ability and learning and emotional/behavioural difficulties. Also, physical disabilities and sensory impairment can prompt social and emotional difficulties. Intellect may be high, but motor difficulties such as cerebral palsy may prevent expression of potential. Visual or hearing impairment or a learning disability may cause frustration. Gifted children with disabilities tend to evaluate themselves more on what they are unable to do than on their substantial abilities (Whitmore & Maker, 1985).

Certain characteristics that normally raise the alarm for possible special educational needs in able pupils are:

➢ Have potential without necessarily being motivated;
➢ Present a discrepancy between oral and written language;
➢ Have low self-esteem, being self-critical;
➢ Present a short attention span; and
➢ Attempt to disguise their ability to alleviate peer pressure.

Research suggests that gifted children may also present difficulties such as ADHD (Barkley, 1990). Determining whether a child has ADHD can be particularly difficult when that child is also gifted. Neither category is clear-cut, hence distinguishing overlap is doubly difficult. The use of many instruments, including intelligence tests administered by qualified professionals, achievement and personality tests, as well as parent and teacher rating scales, can help the professional determine the subtle differences between ADHD and giftedness. Evaluation should be followed by

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appropriate curricular and instructional modifications that account for advanced knowledge, diverse learning styles, and various types of intelligence.

Seeing the difference between behaviours that are sometimes associated with giftedness but also characteristic of ADHD is not easy, as the following parallel lists show.

Behaviours associated with ADHD (Barkley, 1990)
1. Poorly sustained attention in almost all situations;
2. Diminished persistence on tasks not having immediate consequences;
3. Impulsivity, poor delay of gratification;
4. Impaired adherence to commands to regulate or inhibit behaviour in social contexts;
5. More active, restless than normal children; and
6. Difficulty adhering to rules and regulations.

Behaviours associated with giftedness (Webb, 1993)
1. Poor attention, boredom, daydreaming in specific situations;
2. Low tolerance for persistence on tasks that seem irrelevant;
3. Judgement lags behind development of intellect;
4. Intensity may lead to power struggles with authorities;
5. High activity level; may need less sleep; and
6. Questions rules, customs and traditions;

It is important to examine the situations in which a child's behaviours are problematic. Gifted children typically do not exhibit problems in all situations. For example, they may be seen as ADHD-like by one classroom teacher, but not by another; or they may be seen as ADHD at school, but not by the scout leader or the music teacher. Close examination of the troublesome situation generally reveals other factors likely to prompt the problem behaviours.

By contrast, children with ADHD typically exhibit the problem behaviours in virtually all settings "including at home and at school" though the extent of their problem behaviours may fluctuate significantly from setting to setting (Barkley, 1990), depending largely on the structure of that situation. That is, the behaviours exist in all settings, but are more of a problem in some settings than in others.

Hyperactive is a word often used to describe gifted children as well as children with ADHD. As with attention span, children with ADHD have a high activity level, but this activity level is often found across situations (Barkley, 1990). A large proportion of gifted children are highly active too. As many as one-fourth may require less sleep; however, their activity is generally focused and directed (Clark, 1992; Webb, Meckstroth, & Tolan, 1982), in contrast to the behaviour of children with ADHD. The intensity of gifted children's concentration often permits them to spend long periods of time and much energy focusing on whatever truly interests them. Their specific interests may not coincide, however, with the desires and expectations of
teachers or parents.

While the child who is hyperactive has a very brief attention span in virtually every situation (usually except for television or computer games),children who are gifted can

concentrate comfortably for long periods on tasks that interest them, and do not require immediate completion of those tasks or immediate consequences. The activities of children with ADHD tend to be both continual and random; the gifted child's activity usually is episodic and directed to specific goals.

One characteristic of ADHD that does not have a counterpart in children who are gifted is variability of task performance. In almost every setting, children with ADHD tend to be highly inconsistent in the quality of their performance (i.e., grades, chores) and the amount of time used to accomplish tasks (Barkley, 1990).

Classroom activities and discourses resulting in boredom

Regarding classroom activities and discourses, Freeman (1991) referred to the 'three times problem' as a detriment to able students' academic performance. This problem emerges from the way teachers present information in the classroom, first, introduce it; secondly to remind the children; and thirdly to summarise and reinforce. Able students are likely to absorb, understand and retain the information presented during the first time around, perceiving the other stages as mere repetition resulting in losing concentration and interest.

In the classroom, a gifted child's perceived inability to stay on task is likely to be related to boredom, curriculum, mismatched learning style, or other environmental factors. Gifted children may spend from one-fourth to one-half of their regular classroom time waiting for others to catch up, even more if they are in a heterogeneously grouped class. Such children often respond to non-challenging or slow-moving classroom situations by "off-task" behaviour, disruptions, or other attempts at self-amusement. This use of extra time is often the cause of the referral for an ADHD evaluation.

Recommendations for Provision

Gifted education is expected to provide high quality of learning, opportunity towards learning and access to good schooling regardless of race, gender, economic levels and geographical location. This can be achieved by encouraging and supporting students to have access to ambitious and challenging curriculum content, emphasising deep conceptual understanding, fostering the ability to integrate knowledge and to reason to engage in problem solving, and to communicate effectively (Porter, 1995). This is likely to support student motivation and changes in their perceptions of their ability and attitudes towards learning (developing creative thinking and problem solving skills as opposed to just passing exams).

In theory, meeting the academic needs of gifted children is not different from what is understood by good educational practice. The success of gifted educational programmes can be realised by taking a whole-school approach and initiating an attitudinal change in the understanding of giftedness in teachers, parents and the public at large. Also, teachers' world views on issues of quality of education, equity and access and, finally, students' esteem and ownership of their education need to be re-examined.

Some schools have concentrated more on their provision for academically gifted pupils than they have on their talented pupils. In a survey conducted by Nord Anglia (DfES,

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2001) a large number of responses suggested schools were just beginning to address the identification of and provision for their talented cohort. Reasons given for the delays were:
- Uncertainty about the criteria used to identify talent;
- Issues around funding because, for example, musical instruments are very expensive;
- Often, highly talented pupils are beyond the point where the school can extend them any further. Provision for talented pupils is therefore often about making links with experts outside the school.

Overall, good educational practice for able students can be achieved by:

- ➢ Adopting a cross-disciplinary approach towards identification and provision by involving cognitive psychology, curriculum development, special needs, counselling, family therapy;
- ➢ Raising awareness amongst staff of their role in identification of able students based on subject-specific criteria;
- ➢ Taking a flexible and an evidence-based approach towards understanding the needs and the characteristics of highly able students;
- ➢ Providing social-emotional support for able pupils;
- ➢ Promoting a culture among able students that supports and rewards success and intellectual challenge;
- ➢ Encouraging a shift in school's culture and ethos with respect to the provision of gifted education;
- ➢ Engaging in selection, training and professional development of teachers for gifted children;
- ➢ Developing programmes of in-service training for teachers that address the implications of teaching able students for curriculum development and teaching / learning styles, taking into account differentiation, enrichment and extension;
- ➢ Encouraging students to enter national competitions;
- ➢ Taking an inter-agency approach and especially developing home-school links;
- ➢ Being guided by research-based evidence of what works best in gifted education (including international comparative research); and
- ➢ Placing an emphasis on early childhood in terms of recognising abilities as early as possible to avoid potential disaffection and under-achievement.

A Framework for Action

Gifted education needs to expand traditional views of the nature of knowledge and its construction and adopt the notion of pedagogical content knowledge. Pedagogical content knowledge is conceptualised in terms of an amagalm between content and pedagogy or, in other words, the blending of issues and topics (curriculum, instructional methods) presented in the classroom, pupils' abilities and teachers' views (Shulman, 1987). Several scholars have reconstructed the concept of pedagogical content knowledge referring to three central components, i.e., knowledge of pupils' learning profiles, curriculum or subject matter and teachers' views and teaching methods (e.g., Grossman, 1988; Wolfe & Murray, 1990). The conception of pedagogical knowledge as comprising these inter-related elements is particularly useful for designing the content and structure of courses for able students. It can also provide a framework for

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assessing pupils' knowledge and skills. Both content and pedagogy should be considered when constructing a framework of action.

The design and implementation of educational programmes for the gifted, whether within schools or in external educational settings (e.g., Academy or Centres for Gifted and Talented), need to take into consideration issues of inclusion and wide participation, inter-agency collaboration (schools, LEA, higher education sector), provision for socially disadvantaged students and support and professional development for teachers.

Regarding the Warwick Academy for Gifted and Talented, a framework for services needs to develop starting with providing clarification of the role and function of the Academy.

It can be said that the Academy has an internal and external function; internal in terms of assessing, identifying and selecting students, as well as designing activities to support students' needs and ensure stimulating educational/social experiences; and external in terms of providing consultation and services to schools, e.g., assisting schools to identify signs of giftedness and develop ways to stimulate and challenge talented and gifted. Also, an important contribution is to assist schools develop assessment tools, evaluate existing programmes or strategies and implement follow-up procedures to ensure transference and continuation of services.

It is crucial that there is openness and transparency about the function of the Academy by raising awareness in a non-threatening way and providing information that is relevant and culture specific. Its function needs to be understood in the social/cultural context in which the pupils and the schools / communities from which they come from are situated. Also, there is a need to clearly articulate the goals of G & T provision: is it expected to be extra or challenging work or a whole school approach where the school ethos supports high quality of teaching and learning for all pupils regardless of their ability.

More specifically, the function of the Academy for the Gifted and Talented may be delineated in terms of:

1. Developing on-line resources to enable teachers and parents to obtain information and access resources;
2. Encouraging teachers to have an active contribution towards identifying able students, and place their work in the context of continuing professional development;
3. Making links with other governmental and non-governmental initiatives so it does not operate in isolation;
4. Reflecting on definition of gifted and talented;
5. Expanding participation; from academically able to include gifted and talented. (Also expand the age range to include pre 11 and post 16);
6. Developing criteria for identifying gifted and talented (diversifying criteria for each subject);
7. Providing a wider range of subjects and engage in curriculum development;
8. Developing direct ways of communicating with parents;

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9.   Putting systems in place for continuing monitoring and evaluation and dissemination of examples of good practice;

10.   Developing an out-reach programme (for both schools and students and their families) to make the Academy a truly inclusive environment; and last but not least

11.   Fund raising to generate income to ensure support for socially disadvantaged students.

Ensuring a long-term impact

An innovative feature of G & T programmes is to make links with schools for the purpose of maintaining a continuation of services to ensure a long-term impact on capturing interest, maintaining motivation and enhancing the academic performance of able students. The challenge for schools is to draw a consistency between the out-of-school experiences with work in the classroom so that there is more lasting impact. One way is to develop an on-line presence, create a virtual community of students who can access information, advice and guidance.

Another important way of ensuring long-term impact is by supporting teachers in exploring their world-views (e.g., ideological, philosophical, political) and constructions of giftedness through investment in teacher training and professional development. Children's motivation and performance are expected to be influenced by the examples that are set by the teachers in their relationships, attitudes and teaching styles (Halstead & Taylor, 2000). An important function of the Academy is to put in place mechanisms to support teachers and parents, but also introduce attitudinal changes in their perception of what gifted education entails. Also, a fundamental change in teaching and understanding of pedagogy is required.

It would also be helpful to develop an Evaluative Framework to assess the activities / experiences in summer schools at the Academy of Gifted and Talented. A set of criteria may include:

1.   Levels of intellectual challenge and knowledge enhancement;
2.   Applicability and transference of knowledge and experience acquired during the programme;
3.   Relevance to students' needs and aspirations for a future career and/or participation in future activities;
4.   Consistency of assessment / selection services and experiences provided across subjects;
5.   Long-term impact evaluated by building follow-up mechanisms: ways of providing a continuity of services;
6.   Collaboration with other programme organisers, providers, schools and community centres;
7.   Is it a wide range of experience or just restricted to academic subjects only (for example chess or theatre);
8.   Ways of pooling resources and expertise;
9.   Develop national networks: publish a newsletter or a magazine similar to IMAGINE (JHU magazine) or a list with available university programmes;

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10. Provide services in terms of Career Guidance (especially for post 16) to talk about long-term educational goals and ways of locating resources and appropriate programmes of study;

11. Develop a diagnostic and counselling centre, perhaps located within the Academy.

An important direction for future research is to apply selection criteria to identify students that can best benefit from G & T programmes. Achieving the 'perfect fit' between students' academic and social /personality characteristics and the provision available should be the main goal of optimally effective G & T programmes.

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