

The CTY summer school model: involvement, adaptation and extrapolation at the National Academy for Gifted and Talented Youth (England)

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This article compares the summer schools run by the National Academy for Gifted and Talented Youth (NAGTY) in England with those in the USA, run by the Centre for Talented Youth (CTY). When the NAGTY summer schools started they were based on the CTY model, but the programme has evolved over the last 3 years of operation. The article looks at basic design, the courses, students, summer school sites and issues of pedagogy. There is also an extensive section sharing evaluation data about the NAGTY programme in 2004. The overwhelming view expressed in the article is of two highly successful programmes, highly thought of by students and evaluators. As students who attended both have commented, the summer schools have similarities and differences, but are of high quality. Their experiences at the summer schools are life changing for the students. They emerge from the experience much more self-directed and with greater aspirations and expectations. NAGTY and CTY have some interesting plans to further develop the summer school model. With growing numbers of other countries developing similar programmes, the future is exciting. With continued collaboration all can gain from each other and build on the existing high quality experiences.

Overall the quality of teaching was much better than in 2003. (OfSTED, 2004)

Introduction

The National Academy for Gifted and Talented Youth (NAGTY) is a national government funded initiative, which is based at the University of Warwick. It was formed to develop, implement, promote and support educational opportunities for gifted and talented children and young people aged up to 19, as well as providing

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support for parents and educators. It also aims to provide a nationally and internationally recognized centre of expertise from which to develop and help improve the delivery of gifted and talented education in England. The three areas of the Academy, the Student Academy (providing a range of services for students), the Professional Academy (for training and supporting teachers, schools and LEAs) and the Expertise Centre (drawing from all areas but including extensive research), have been established to fulfil the above. A key goal of the Academy has been to provide equal access to all children, irrespective of class, gender and colour. NAGTY now has over 35,000 members enrolled from all areas of England.

A major project at NAGTY is the summer schools, where students from 11 to 16 years study together for either 2 or 3 weeks, taught by a team including academics and teachers. The Director of NAGTY is Deborah Eyre, who has made a major contribution to gifted and talented education in England. Her books, including *Able children in ordinary schools* (Eyre, 1997) and *Effective teaching of able pupils in the primary classroom* (Eyre *et al.*, 2002), have been very influential across the age range. An English model has emerged for gifted and talented education, which has shaped both the work of government and NAGTY in this country (for further information see <http://www.warwick.ac.uk/gifted>).

The NAGTY summer schools

In 2004 the NAGTY summer schools came of age. This was the year when all the university sites were fully enrolled and a host of lessons from two previous summer schools could be applied. Held at prestigious universities across England, and based on the popular Centre for Talented Youth (CTY) model at Johns Hopkins University, development of the NAGTY model has not always been smooth. Although the previous summer schools were successful, they had also received a mixed reception from the media. In the first year news tended to focus on the experience being elitist and in the second there was harsh criticism because the initial target for recruitment was not met.

On a positive note there was a great deal of media attention in the first two years, but sadly most publicity viewed the glass as ‘half empty’ rather than ‘half full’. It was, therefore, a little disappointing when the highly successful summer schools of 2004 did not merit the same attention. This was despite full recruitment and outstanding evaluations from the English school inspectors (OfSTED), the evaluation group CEDAR (the Centre for Educational Development, Appraisal and Research) and excellent feedback from students. However, it is quite possible that attitudes in the media are changing and acceptance of the great benefits that the experience has for the participants accommodated.

From discussions with students and the various evaluations it is clear that both the NAGTY and CTY summer schools are life changing. Students talk of greatly raised aspirations and expectations and an acquired sense of self-directedness. In addition, often made to feel ‘strange’ at school, there is a sense of belonging and a greater comfort with being ‘who they are’.

This paper will analyse the NAGTY summer school experience and set it in the context of where it all started, the CTY model at Johns Hopkins University. As well as using the CTY and NAGTY websites for reference, a visit to CTY and interviews (including staff and students who had worked on both projects) were used as sources. Various articles in *The New Yorker* and *Aspire* (the NAGTY journal) were also used. The *CTY Annual report* (Centre for Talented Youth, 2002) also has useful information. This article will provide some detail of the NAGTY summer schools and how they operate.

Basic facts about the NAGTY summer schools generally

- Operating for 3 years.
- Set in prestigious universities around England.
- Piloted at Warwick (100 students) in 2002, in five universities (500+ students) in 2003 and seven universities (1050 students) in 2004.
- In 2004 two sites offered a 3 week summer school and five sites a 2 week summer school.
- NAGTY summer schools highly praised by inspectors and evaluators in 2003 and 2004.
- NAGTY subsidizes summer schools by over half and offers scholarships.
- Excellent student and parent feedback.

Basic facts about the NAGTY summer school 2004

As shown in Figure 1, in all cases there was a relatively low percentage attendance of students from a particular area at their local university site. Most preferred to travel extensively to a university, often to the opposite side of the country. Interestingly, one of the areas least represented in summer schools was the north east, where there

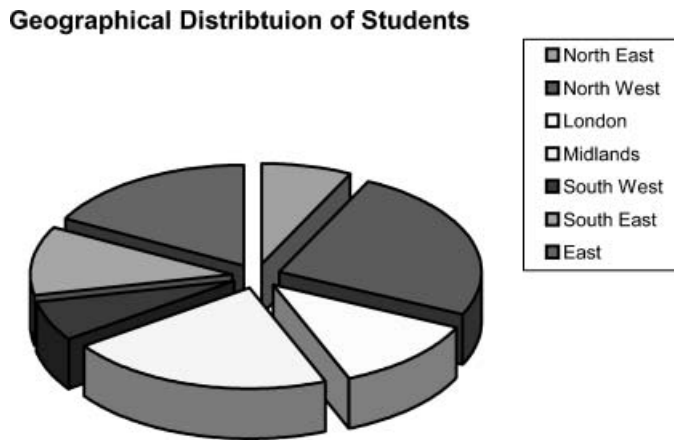


Figure 1. The university sites are spread evenly around England

are large numbers of NAGTY members. Also, there were fewer attendees in the south west. This was interesting, given generous offers of tuition support from LEAs in that area of England. The CTY locations are also national, although more sites are located on the eastern side of the USA.

- Canterbury Christ Church University College (south east).
- University of Durham (north east).
- University of Exeter (south west).
- Imperial College London (London).
- Lancaster University (north west).
- University of Warwick (midlands).
- University of York (north east).

Figure 2 shows that the prime ages for participation are in the 12–15-year-old group. This is predictable in that 11-year-olds are only able to enrol with NAGTY after Year 6 at primary school (5–11 years) has been completed. The synchronization is very tight and requires students to seek ‘advance’ membership of NAGTY, while not officially eligible, for the July/August following their primary education. Many are 12 by the following year, leaving only a small cohort.

NAGTY has a dilemma about the age range mix that is ideal for summer schools. For the courses the range of 11–16 can be a challenge for instructors and students, socially and academically. However, to skew the age phase with older or younger students would radically change the nature of the experience. The NAGTY solution has been two-fold. Firstly, to look for a relatively even mix of ages, with the 16-year-olds (who have not attended before) being the bigger group. In addition, NAGTY is trying to be more flexible in accepting courses that are aimed at an age group (e.g. 11–13/14–16 with some balance in numbers of each). This impacts slightly on the

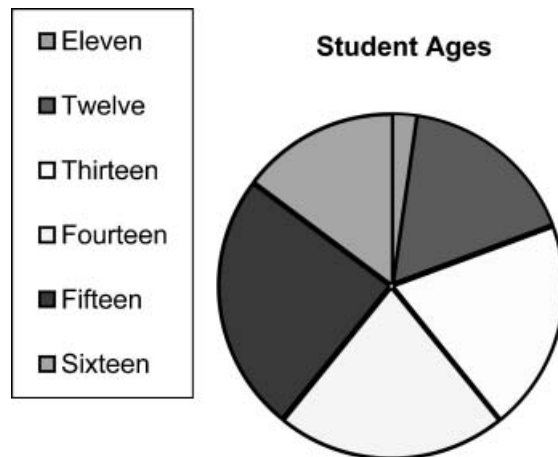


Figure 2. Age distribution of participants at the NAGTY summer schools

Ethnicity	
Unknown/Prefer not to say	10,30%
Asian or British Asian - Bengali	0,10%
Asian or British Asian - Indian	5,30%
Asian or British Asian - Pakistani	1,10%
Black or Black British - African	1,80%
Black or Black British - Caribbean	0,50%
Chinese or Other Ethnic Origin - Chinese	5,10%
Mixed - White and Asian	1,00%
Mixed - White and Black African	0,50%
Mixed - White and Black Caribbean	1,00%
Other Asian	1,50%
Other Black	0,40%
Other Ethnicity	0,40%
Other Mixed	1,30%
Other White	4,10%
White British	66,20%
White Irish	1,20%

Figure 3. Ethnicity profile of the summer schools

principle that ability, not age, should determine enrolment, but is a compromise, given the feedback from past summer school courses.

Figure 3 categorizes the ethnicity profile of the summer schools, broadly reflecting the English population as a whole. However, the figures for the Afro-Caribbean group are lower than in the general population. The educational attainment of this group has been a recent priority of the English government.

NAGTY has ethnicity targets set by government. The current policy has been to closely monitor the emerging data as applications are processed, rather than prioritize applications from any particular ethnic group. To date this has led to an appropriate ethnic mix. However many of the non-White British students attending the summer schools are from Excellence in Cities areas (EiCs). The EiCs are a government funded programme concentrating extra resources, training and support in underprivileged areas of England. Funding for this programmes ceases soon, which could create issues of funding and ethnicity for NAGTY.

As shown in Figure 4, in 2004 about 35% of students came from EiC areas. This falls within government targets for NAGTY. The percentage is also an indicator of the level of the student family affluence. Of course, that is not to imply that all the 35% are from underprivileged homes. It is likely that in the future the figures will be further broken down to provide more detailed data.

Of future concern will be the consequences of the phasing out of EiC funding and the knock-on effect on ethnicity and underprivileged children. Currently, NAGTY



Figure 4. Excellence in cities distribution

subsidize summer schools by about half, with the other half shared between parents/scholarships and the schools or Local Education Authority (LEA). If any of these areas can no longer pay a contribution to the summer school tuition fee, there may be the risk of a significant fall in enrolment of underprivileged pupils. It is unlikely that NAGTY will be able to make up any fee shortfall, especially with the government core grant coming up for review in 2007/8. Also, with many competing priorities squeezing the government core grant, there may be a point where the summer school experience can no longer be subsidized. However, to counter that, many business institutions and foundations may be willing to sponsor underprivileged pupils.

At CTY there is a broad pattern of the majority of enrolled students either coming from affluent or underprivileged families, with a thinner population in between. This is because tuition is generally fully paid for by parents or scholarships. As the costs of CTY and NAGTY are approximately the same, that makes affordability an issue for middle income families. With no federal support in the present system, there is little CTY can do to engineer a better balance. It may well be that NAGTY will later end up with the same set of dilemmas. However, with expectations high with regard to 'access for all' and having the precedent of parents paying about a quarter of the fees of CTY, it would be far from easy for NAGTY to radically change the fee structure.

Figure 5 shows that the gender participation in NAGTY summer schools is statistically symmetrical. Again, this is a government target and the distribution is closely monitored during the application process. At CTY there are typically more male participants than female (roughly 53 to 47%).

Basic comparative information for CTY and NAGTY

Table 1 shows some comparative basic information about the NAGTY and CTY programmes. The CTY programme is a much larger one, with over ten times the number of students. The age range is also wider, although NAGTY are now developing provision for primary school aged students through a number of

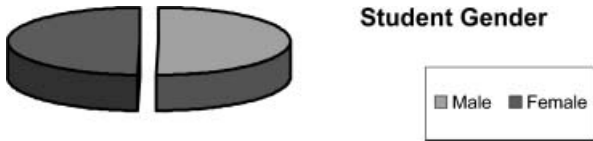


Figure 5. Gender distribution in the summer school 2004

Table 1. Comparison of basic information about the NAGTY and CTY programmes

Basic information	CTY	NAGTY
CTY/NAGTY numbers/age range	Grades 2–4 (NR) Grades 5–6 (NR/R) Grades 7+ (R)	Age 11–16
Number of sites	20+	7
Student numbers	~10,000	~1000
Duration	3 weeks	2 and 3 weeks
Percentage of cohort	Top 2–3%	Top 5%
Class size	~15	~20
Costs	~\$850 a week	Similar to CTY
Identification	By CTY test	A variety of measures
Liaison point	Normally parents	Normally school
Government involvement	Minimal	Provides base funding for NAGTY and are closely involved
Evaluation	Independent evaluation programme	Independent evaluation annually through CEDAR and inspected in last 2 years by OfSTED (highly praised)

‘Regional Gateways’ around England. Currently, the NAGTY summer schools start at 11 years and finish at 16. While the government provide a core grant to NAGTY, some of which is currently used to subsidize the cost of summer school places, CTY has no government or university support. Conversely, they pay a university administration tax annually to Johns Hopkins University. This means that CTY has to run efficiently year on year, as there is not external body to come to the rescue if numbers are down.

The CTY talent search is an essential part of the organization. It is revenue generating and provides a pool of potential students for summer schools and a clear way to match courses with qualified students. The assessments associated with the testing provide parents with information not only on their child’s abilities but a comparison with other students across the country. The search gives ‘additional value’ to the parents regardless of participation in activities. NAGTY currently have no test, relying mainly on curriculum awards (e.g. Maths Challenge Gold) or results in the National Curriculum SATs (Standard Assessment Tasks), which are taken at 7, 11 and 14. However, not all students who opt to take the CTY test participate in activities, as to have the validation of being in the top percentiles is useful.

Similarly, NAGTY assumes that many of the enrolled students (currently about 37,000) will not participate in any activities. Soon there will be a box to check in the university application form (UCAS) that will place a premium on membership. In fact, for NAGTY the summers schools now represent an important, but not all important, part of the overall programme. With the high number of enrolled students the effective provision of E-learning, the mobilization of potential courses/service providers (e.g. museums) is just as important. Although undoubtedly many

of the students will remain inactive, there will be a large number looking to get 'value' out of their membership and to engage on some level. As CTY do not have a membership as such, they thrive or wither on the quality, success and repute of their educational programmes, publications and related activities.

The NAGTY summer schools are based on the CTY model and hence many features are similar. However, as will be seen in this article, there are now a number of differences too. This should be beneficial to the longevity and health of the model, in that similarities and differences should strengthen the programmes, especially if there is ongoing collaboration.

In 2004 NAGTY decided to retain the 3 week summer schools at two locations and offer a 2 week option at the other five sites. This was as a result of feedback, particularly from course deliverers. However, the students generally favoured the 3 week option. The result was that there was an element of choice, which seemed to work for all concerned. The NAGTY evaluations (see below) indicated that tutors and students were happy with their choices. At an early stage of development NAGTY opted to focus on a wider band of the gifted and talented cohort (the top 5%).

Class sizes are smaller in CTY, although in many cases supervision (i.e. numbers of adults in each room) is greater at NAGTY. This is an important factor, as some of the pedagogical development at NAGTY summer schools in 2004 was viable given the excellent opportunities for individualized instruction (see also below).

The costs of both programmes are remarkably similar. However, the NAGTY government grant enables a subsidy to be paid of about half the cost. The remaining cost is, in theory, met by parents and the school, at about half each. Those parents who cannot afford to pay can access scholarships. In the case of a school refusing to pay their portion, either the parents have to pay that allocation or they need to get support from other sources.

The liaison point at CTY and NAGTY for the summer school programmes is different. This is a critical difference, which impacts on the continuity of experience and the potential level of involvement of the parents. At NAGTY the key point of contact is the school, normally the Gifted and Talented Co-ordinator. This person has an overview of the school and has formulated the school policy. He/she may have developed a register and database and there is the potential to make the personal learning pathway relatively seamless. Parents are involved (especially when the summer school is operating) and in many cases make a substantial contribution to tuition. However, they are mostly one stage removed from the actual programmes. On the other hand, at CTY parents are the main point of contact. In this case they will have the view of how their child is developing and will want to take a personal interest. The parents are encouraged to interact with the schools except in the case of distance education, which actually has some programmes in school. Hence, before, during and after the summer school a large amount of time is taken in liaising and communicating. In many cases this can be positive, but in others quite pressurized.

Government involvement at CTY is not a factor. Some elements of a few programmes have attracted federal funding (e.g. some elements of the Outreach

provision), but there is no government involvement in the running of summer schools or in core costs. NAGTY has a large government core grant and hence has to be accountable to the government in a number of ways. There is an annual contract (and longer term plans) which sets out expectations and targets on both sides. Defaulting on this could cause the grant to be withdrawn. Although this is used sensibly, there is the potential to put pressure on NAGTY to be compliant in a number of philosophical and organizational ways. Where appropriate, following government policy would be an expectation, for instance. The government can be quite influential in persuading schools to contribute to student tuition. The government involvement also legitimizes the Academy, with a defined role, purpose and position in the educational landscape. NAGTY then has the delicate challenge of ‘proving themselves’ to the education world, overriding potential resentment and resistance. CTY, on the other hand, has had to fashion a reputation through the quality of programmes. Any positioning nationally has to be plotted with care and has no guarantee of permanence. While NAGTY has this in the short-term, there may come a time in a few years when the core grant will be substantially reduced or disappear, leaving the organization to thrive or not. Therefore, the coming years are critical in building relationships, a reputation and viability. Trying to judge now what will be sustainable in 2008 is a tough call.

Both CTY and NAGTY are systematically evaluated (see below on NAGTY evaluation in more detail). This builds in an element of quality assurance. NAGTY has been evaluated for two years running by OfSTED and has a long-term contract with the independent evaluators at CEDAR. Both were very complimentary about the NAGTY summer schools in both 2003 and 2004. The OfSTED inspections are particularly important for NAGTY in that there is a close connection with government. Hence, a bad or weak inspection report could be a major problem. At a time when other areas are expanding to respond to high student enrolment, the summer schools must continue to improve year by year, but with summer school enrolment numbers staying at a similar level.

Summer schools: the on-site experience

Table 2 displays some on-site comparisons of CTY and NAGTY. The academic day is longer at CTY, with slightly more restricted scope for social activity. CTY has limited involvement with the university sites. These are just venues that are staffed annually through national advertising, coordinated through the central person responsible at CTY. This necessitates that training of staff is carried out year by year prior to the summer school and restricts continuity of staff over time. As the central person is responsible for more than one site, there is a reliance on the effectiveness of training and quality of the team selected at each venue. At NAGTY there is some stability of staff year on year (at least in the first few years of operation) that allows for annual improvement. In addition, as the staff is drawn partly from the university site, there is a ‘reputation’ factor in that there is local ownership of and pride in quality.

Table 2. Some CTY/NAGTY on-site comparisons

Structure	CTY	NAGTY
Schedule of academic day	3 sessions (including evening)	2 sessions (not evening)
Social time	Structured daily and weekly projects	Some structured and some free choice
Role of university	Limited liaison but minimal operational (apart from infrastructure like security)	Integral and normally operational
Role of parents	Very close communication and liaison	Less directly involved than at CTY
Personal development	Structured in experience	Informal and by individual need
Accommodation arrangements	By age group, gender and course	By gender

As mentioned earlier, parents at the CTY sites are much more involved than at NAGTY. The staff at CTY sites typically build in time each day to respond to parent requests for information on progress and the quality of experience. This is partly due to the fact that parents often pay all of the summer school fee. At NAGTY the arrangements for summer school are mainly coordinated through the school, while at CTY the link is with parents. The NAGTY summer school fee is mostly paid by a combination of parents, school and NAGTY subsidy/scholarship. However, in the event of problems during the 2 or 3 week experience, it is invariably the parents at both CTY and NAGTY who are the contact point.

At CTY there is a more systematic view of student personal development, with expertise on site to coordinate this, while at NAGTY this is more as individual needs arise.

Staffing and summer schools

As noted in Table 3, a critical comparison on staffing is the continuity of coordination offered by the permanent CTY staff though staff running the actual sites can change year by year. This contrasts with NAGTY, where there is a greater likelihood of staff continuity at the various sites year by year (due to many staff being drawn from each university). Consequently, teams of staff can be trained and convened throughout the year at NAGTY, with greater opportunities to build quality of pedagogy and teaching skills.

Courses and summer schools

Table 4 shows that the courses at CTY are normally written by experienced CTY instructors or, on occasion, by education experts from other organizations (often either commissioned or submitted to the central office). There is the flexibility to develop fine detail for the courses provided locally by the site team. This has led to a diverse portfolio of courses that can be offered. At NAGTY there is a central view of

Table 3. Staffing comparisons between CTY and NAGTY

Staffing	CTY	NAGTY
Instructors	Hired in for the summer school	Normally drawn from the host university
Full-time staff	Based at CTY, set up summer schools then visit occasionally	National Project Officer then local appointments
Staff:student ratio	Fewer staff per teaching group	Very staff intensive
Inter-staff communication	Working to improve Residential Assistants/teacher links	Priority for improvement at all sites in 2004
Recruitment of quality staff	Some difficulties in recruiting male RAs	Recruitment easy, mainly from universities
Training	Full 'on the spot' training prior to summer school plus handbooks and other guidance	Ongoing training through year plus handbooks and other guidance

Table 4. Course comparison between CTY and NAGTY

Courses	CTY	NAGTY
Length of courses	1 course for 3 weeks	1 course for 2 or 3 weeks
Course type	Symmetry. More diverse mix	Symmetry plus use of site specialisms
Course writing	Pre-written, with considerable flexibility on delivery. New courses submitted or commissioned	Written by course tutors locally, with some cross-site networking and training
Student choice of courses	Tightly controlled by test performance	Mainly free choice, subject to space
Pedagogy	Built in to courses and training each year. Many tutors return each year	Built up over time through guidance and training. Good continuity of tutors

a preferred range of courses, but considerable local autonomy to use the specialisms of the on-site academics. This has led to some excellent courses, but with less central control of type by NAGTY

Student views

99% of the students who responded to the post-summer-school questionnaire reported that the summer school had been a worthwhile experience. (CEDAR, 2005)

Table 5 relates to students attending CTY and NAGTY summer schools. For many attending CTY and NAGTY the summer school is the first chance to mix with larger numbers of others with similar gifts and talents. Many encounter bullying or cruelty at school and find a haven at summer school. However, that does not make the experience straightforward. The first week of summer school can be

Table 5. The student view in CTY and NAGTY

Students	CTY	NAGTY
General views	Highly enthusiastic and satisfied; life changing	Highly enthusiastic and satisfied- life changing
Motivation to attend	High, with good balance between social and academic	Most attend for symmetry between social and academic experience
Returners	Happens frequently	Has happened frequently but with high general enrolment to NAGTY, will be unlikely in future

disorientating, especially given years of some of the students feeling 'different'. In some cases students may well also have experienced acceleration of their academic work at the expense of emotional literacy. Some have been over-protected by their parents. Therefore, while for most the 2 or 3 weeks is an epiphany, there are many difficult hurdles to surmount. It is a great credit to the original CTY model and the variations at NAGTY that the experience is invariably highly successful. The mix of academic, social and pastoral support certainly seems to work. Hence, students typically emerge from the 2 or 3 weeks much more self-directed and with greater confidence.

Prior to the NAGTY summer schools 2005 and at CTY many students have seen the annual summer school place as a highlight of their calendar in the years between 11 and 16. This has meant that for both programmes there have been a large number of student 'returners'. This has added an interesting blend of students who, as past attendees, can support those participating for the first time. This category of student has become a form of 'pressure group' at NAGTY. Individuals meeting at summer school have also tended to participate in other NAGTY events 'en masse' throughout the year. It is probable that these friendships will be life-long. However, in 2005 it is unlikely that there will be any students returning, due to the large number of enrolled students at NAGTY and the importance of maximizing the numbers who can benefit from this life changing experience. This has caused some frustration for those students unlikely to attend. However, these students will have access to a raft of shorter residential courses around the UK in the summer of 2005.

From discussions with students it is the balanced blend of the social, emotional and academic that is so attractive about the summer school experience. In addition, the taste of university life can be highly aspirational. There are indications that some students complete summer school determined to go to university, when they would not otherwise have done so.

A relatively small number of students have attended both the CTY and NAGTY summer schools. From the responses received they seem to value both programmes highly, though there are social, emotional and academic differences. One student commented that both were unique and that he was fortunate to have attended schools in the USA and England. Each year there is a reciprocal exchange programme between CTY and NAGTY, which has universally proved very popular.

The pedagogy of the summer school experience

Continual improvements in summer school pedagogy can only be of benefit to gifted and talented students attending either NAGTY or CTY programmes. The basic structures of the two impact strongly on what is possible and invite an interesting comparison. As CTY has officers based in Baltimore in charge of summer schools around the country it is extremely important that they can take a strong lead in the teaching and learning. Each site employs a new set of staff each year, with varying levels of turnover each year and minimal or no involvement of faculty staff at the host site.

However, CTY does have more continuity on some sites (such as Skidmore) and some teachers have been with CTY for over 10 years. It is also quite common for teaching assistants to move up to instructor level. Approximately 50% of the staff return each year or are re-hired. This can help to ease the considerable pressure on the responsible permanent CTY officers to effectively train staff for the experience. At NAGTY there is a central team based in the main office with the site staff drawn mainly from the host university. Many staff teach at summer school each year. This provides an opportunity for the pedagogy to arise as an exciting interplay between staff at NAGTY and the faculty and teachers based at the universities. In 2004 the NAGTY summer school team developed a collaborative process with each university to identify key aspects of the pedagogy as applied to gifted and talented students.

To further inform this the works of Renzulli (1986), Sternberg (1977) and Gardner (1993) were researched. Written guidance was then developed and integrated into the training manuals and the face-to-face training that was piloted last year. The effect of this in 2004 has been positive, in that OfSTED were highly complimentary about the improvements. In 2005, as well as consolidating the progress from 2004, NAGTY plans more improvements through collaboration on the pedagogy. These will include greater networking between tutors at different sites to improve the definition and quality of similar courses, collaboration during the summer school experience and greater attention to course criteria and level.

Making the pedagogy work with gifted and talented students

A considerable amount has been written about how best to apply pedagogy to gifted and talented students. There is a certain amount of truth in the view that a good teacher will be effective with gifted and talented students. However, teachers can be 'good' in certain ways. For instance, an academic teaching at summer school can have an excellent knowledge of the subject and be superb at teaching using a didactic teaching style. However, while these attributes may be effective on a certain level for gifted and talented children, they may not embrace some of the key teaching skills or learning strategies that are central to such students. The mapping out of some examples of these observed in the NAGTY 2004 summer schools below can provide some insights.

Each attribute can be mapped (as shown in Table 6) for some of the useful supporting approaches that stimulate success.

Table 6. Teacher attributes in the NAGTY 2004 summer schools

Attribute	Justification of value	Implied development mapping examples
1. Teacher–pupil interaction	Key to supporting development of collaborative projects, thinking, decision-making, investigations, key reflective questioning, learning bridges and personal learning pathways.	Teacher skills in reflective questioning teacher skills in extended, follow-on questions teacher facilitation small groups flexible independent learning time classroom space set out for small groups and whole class resources/ICT at hand
2. Rich starting points	Gifted and talented students work particularly effectively when engaged in an activity. Typically students become passionately involved in extension work.	Planning for active learning teacher skill in creating and then following up SP blocks of time to develop projects whole class and small group provision differentiated projects flexible use of space access to varied resources and expertise
3. Effective personalized learning pathways	Growing priorities to make the system bend to student needs provides great opportunities for gifted and talented students. Past provision has lacked the priority, expertise and resources.	Effective use of teacher–pupil interaction mobilization of expertise in community self-assessment, targeting, ownership and decision-making effective management of time, space and grouping effective record keeping link with other education providers
4. Involvement in self-, assessment decisions and targets	Self-determination is an important attribute for gifted and talented students. The ownership of these areas is enabling. The teacher challenge is to influence, not to dominate.	Effective use of teacher–pupil interaction effective differentiation facilitating and resource skills of teacher ownership of students the effective working of personal learning pathways effective management of time, space and grouping
5. Brain and intelligence research, application	Diversity of approach, teaching others about learning, researching information and reforming it; collecting, constructing and communicating. Multi-stage decision-making.	Planning for active learning teacher planning and structure for research differentiated projects balance and design of extended projects effective use of teacher–pupil interaction effective management of time, space and grouping

Examples of pedagogy in NAGTY summer schools in 2004: observed patterns

Generalizations are dangerous. However, during multiple visits to summer school sites in July and August 2004 there were recurring patterns of lessons that are worthy of articulation. Of course, there were many examples of practices that were superior or inferior to those identified in the chart below. However, looking at the generalized patterns assists in clarifying what makes the summer school experience so potent for the students. The effectiveness may well be in the mix of excellent subject knowledge and the opportunity for personalized individual interaction with students. Good

active learning strategies and the creative design of projects, plus attention to the attributes identified in Table 7, can add significant value to this.

Evaluation

Both CTY and NAGTY have forms of evaluation. The functions and purposes of these show differences. For CTY their 5 year cycle of accreditation provides indicators of quality and the ongoing self-review provides some evidence that there is an emphasis on continual improvement. For NAGTY, as well as requiring an independent view of the progress of the summer schools (provided by CEDAR), the funding from government also ensures that the national government school inspectors (OfSTED) are involved. Thus there is an essential check to ensure that government money is well spent and that there is a quality of experience that dovetails with students' work in schools. This has provided a pleasing range of supporting data and opinion on the quality of the summer schools.

While CEDAR has a long-term contract to carry out annual evaluations, it is uncertain whether OfSTED will visit every year, although they have for the last two years. In the case of CTY there is an accreditation process, based on self-review, which is carried out every 5 years for Grades 5–12 by the Commission on Secondary

Table 7. Pedagogical attributes in the summer schools teaching

Phase of activity	Sample responses
1. Whole class instruction introduction by academic with key learning messages; task setting	The students are typically responsive but sometimes mildly bemused. There is respect for the knowledge of the academic but sometimes the learning context is unclear. Engagement based on anticipation, rather than frequent use of rich starting points.
2. Follow-up activity with all staff (5-6, including academic, teacher and or assistants)	Clarifying and extending task, directing to lesson aims and objectives, which often involved complex decision-making, investigations and problem-solving. The approach is very individual, with single and often follow-up questions. These are frequently reflective in nature and involve teaching staff having some resolution that there is sufficient understanding.
3. New extension input, frequently from tutor	The students are much more tuned in and responsive. They have now clarified the task and there is a personal investment in the subsequent activities.
4. Longer follow-on task involving all staff spending quality time with individuals or groups	The students have time to independently pursue extended tasks, with more complex decision-making involved and staff acting as resource or facilitator. Decisions about research collection, construction of information and communication.
5. Closure of activity and presentation of learning	The teacher or academic will typically clarify and reinforce learning and provide examples of student responses. In many cases, the students will have an opportunity to present their learning to others.

Table 8. Findings by OfSTED for the CEDAR about the NAGTY summer schools

Progress	Comments
Effective	<p>Students attending thought the summer schools were very successful</p> <p>The quality of the summer schools was at least good and mostly excellent</p> <p>The training NAGTY provided led to quality of pastoral care and teaching</p> <p>The pastoral care of pupils was excellent</p> <p>Planning was good or better at all summer schools</p> <p>The quality of learning was generally very good due to excellent teaching, illustrating the effectiveness of the Academy's advice and guidance to sites</p> <p>NAGTY responded promptly and effectively to the 2003/4 Ofsted report and worked with sites to improve pedagogy, recruitment, staffing and resources</p> <p>The Academy has refined the administration and organization of the summer schools so that the quality of teaching and learning is as high as it can be</p> <p>Sites were generally positive about the quality of monitoring and communication NAGTY provided</p> <p>Sites appreciated the monitoring visits made by Academy personnel and were encouraged by the findings and suggestions</p> <p>83–93% of students rated the teaching on their strand 'very good/very appropriate' or 'good/appropriate' across several dimensions</p> <p>90% of students rated the social and leisure aspects of the summer school 'very good' or 'good'</p> <p>Successful teaching used a flexible approach adapted to suit the student group, including varied teaching methods and interactive approaches</p> <p>Academics and qualified teachers responded well to developing course content and teaching methods, free from a standardized curriculum</p> <p>Qualified teachers valued the complementary division of skills and knowledge among the members of teaching teams</p> <p>Those who experienced varied teaching methods were more satisfied and quicker to contrast their school experience unfavourably with summer school</p> <p>Students appreciated interactive teaching and learning, choice, being allowed to follow-up areas of interest, imaginative teaching, debates and discussion</p>
Improving	<p>The quality of assessment and reporting has improved since 2003 and is satisfactory</p> <p>The Academy has improved its monitoring of summer schools</p> <p>The Academy continues to improve its quality assurance and tightening of the application process so that the eligibility of pupils are better assessed</p> <p>Young people attending thought the summer schools were very successful and many previous attendees felt there had been important improvements</p> <p>Pupils attended from 143 of the 153 LEAs in England; much improved from last year</p>
Targets for the future	<p>The Academy needs to further develop its liaison with schools so that the progress pupils make at the summer schools is built on effectively afterwards</p> <p>NAGTY needs to show how summer schools represent value for money</p> <p>Sites should provide more opportunities for pupils to be taught with others of their own age and expertise level to improve the effectiveness of teaching</p> <p>NAGTY should review the match of pupils to summer school courses and ensure there are no adverse affects of accepting late applications</p> <p>NAGTY should ensure that student data is always available in good time, so that sites can further improve their planning and the quality of teaching</p> <p>NAGTY should improve the consistency of end-of-course reporting build more effective learning bridges with student schools</p>

Schools of the Middle States Association of Colleges and Schools. As part of the evaluation process CTY conduct a self-study and are granted accreditation after a validation team review this and visit both the administrative headquarters and summer programme sites. This provides evidence to the participants and schools that the experience is objectively valid. NAGTY too is building a self-review process, although they are externally evaluated each year by CEDAR. The key points of the current findings by OfSTED and CEDAR about the NAGTY summer schools are included in Table 8.

Conclusion

Clearly, both the CTY and NAGTY summer school programmes are successful and highly beneficial to the students. Students typically emerge from the experience more confident, self-directed and with a newly found set of friends. While the CTY programme is well established and has a long track record, the NAGTY programme is relatively new. Having used the CTY model as a starting point for their summer schools, the NAGTY version has evolved to have similarities and differences. Assuming that the leaders of the different variations on the CTY model around the world continue to collaborate and share their experiences, there will be an exciting few years of further development and progress. This will only further benefit the participating students, who often find their 2 or 3 weeks at a reputable university life changing.

Parents overwhelmingly reported positive outcomes for their children, particularly in improved confidence, academic benefits, increased independence and improved social skills and friendships. (CEDAR, 2005)

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Websites

- <http://www.warwick.ac.uk/gifted> (NAGTY).
- <http://www.jhi.edu/gifted> (CTY).

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