

## **KEE01007 TALENT IN THE NEW MILLENNIUM**

### **RESEARCH STUDY, 2001-2002, INTO GIFTED EDUCATION IN THE BAY OF PLENTY, OTAGO AND SOUTHLAND REGIONS OF NEW ZEALAND**

#### **REPORT ON YEAR ONE OF THE PROGRAMME, NOVEMBER 2001**

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##### **Introduction**

*Talent in the New Millennium* is a research study into gifted education, scheduled to run through the years 2001 and 2002 in three regions of New Zealand, namely the Bay of Plenty, Otago and Southland. The study aims to explore current perceptions and practice in relation to gifted education in the designated regions, to promote the sharing of best practice through networking, to monitor the effects of change brought about by such networking, and to establish guidelines for future development, applicable both among the programme's participants and generically.

The project involves sixty-six education providers. Of these, nineteen are early childhood education centres, twenty-seven are primary schools, four are intermediate schools and sixteen are secondary schools. Among the secondary schools, ten are co-educational, five are single-sex girls' schools and one is a single-sex boys' school. A balance of small and large, and urban and rural, schools is represented among those enrolled.

During this year, 2001, the *Talent* project has progressed through three phases, with each phase generating an interim report. Using questionnaires, the study has explored, firstly, perceptions of giftedness both among schools and their wider communities. Secondly, it has pieced together the demographic profile of the children and students who are being identified as gifted. Thirdly, it has assessed the impact of programmes of gifted education from the several perspectives of the participating students and their parents/caregivers. Over five hundred student and parental responses have been analysed during this process.

Subsequent stages of the *Talent in the New Millennium* study, set to run during 2002, will emphasize qualitative rather than quantitative research. The 2002 programme will facilitate networking through a series of regional seminars. The impact of change, derivative from these seminars, will be monitored through a schedule of longitudinal case studies.

### **Synopsis of project findings**

Among the findings of the *Talent* project, the following are especially worthy of note. Each of the listed points is developed more fully in subsequent sections of this report. Similarly, data supporting specific aspects of the summative report may be accessed from the several interim reports generated at each phase of the project's implementation.

1. Giftedness is not a state but a process. Attempts at definition resemble snapshots of a process, and cannot capture fully the dynamic reality of what is observed.
2. Because giftedness is dynamic and idiosyncratic, school and centre programmes for servicing the needs of the gifted should be flexible, multi-tiered and multi-dimensional.
3. Lateral and vertical networking between centres and schools, to facilitate collegial support and the sharing of experience and best practice in relation to gifted education, will be richly productive and should be encouraged.
4. On average, between 9 and 10 per cent of the student population is identified as gifted. However, individual schools vary widely in the degree to which they identify giftedness among their student populations.
5. Parents suggest that, in many instances, giftedness should be recognised and its needs addressed at an earlier stage of the child's education.
6. Schools of different decile rating identify giftedness in similar proportions but in differing socio-economic contexts.
7. On average, boys and girls are identified as gifted in equal proportions. Some specific features of student interest and performance, in relation to gifted education, seem to be gender-related. This applies especially to the areas of mathematics, computing and language.
8. Proportionally, Māori and Pacific Islands students are under-represented among those identified as gifted.
9. Educators working with children and students at different age levels, early childhood, primary, intermediate and secondary, tend to approach the identification and servicing of giftedness in different ways.
10. At least half of the gifted student population feels under-challenged in some or all aspects of their schoolwork. The minority of gifted students who express an overt dislike of school are concentrated among the under-challenged.
11. Significant numbers of gifted students, and their parents, allude to peer pressure on the gifted to under-perform.
12. Teachers themselves, parents and students perceive a need for enhanced pre-service teacher training and in-service professional development in the field of giftedness. Specific areas of deficit include: the identification of giftedness; recognition of giftedness in diverse cultural settings; facility in the design and delivery

- of programmes for the gifted; provider strategies in relation to gifted underachievement.
13. Parents and caregivers of gifted and talented children and students would, in many instances, welcome a closer partnership with centres and schools in relation to the identification of and servicing of giftedness.
  14. Schools and parents both perceive a need for improved resourcing for gifted education. They call for enhanced teacher support, an improved range and quality of material resources, and adequacy and equity of funding. Rural schools feel disadvantaged in their ability to access resources to support enrichment.
  15. Parents on a low income, and who have gifted children, feel disadvantaged in their ability to give their children access to enriching resources and experiences.
  16. The great majority of gifted students prefer to learn in contexts which afford them choice in, and ownership of, their work. They profess a strong preference for hands-on, experiential learning situations.
  17. Gifted children and students have numerous, and diverse, out-of-school interests and hobbies, including sport and outdoor activities. On average, gifted young people are more physically active than their peers.
  18. A high proportion of the gifted express a strong interest and level of involvement in music, suggesting the desirability of some re-appraisal of the role of music in education.
  19. The low profile of social studies in the perceptions of gifted children should be of concern to teachers in the field of social sciences.

### **Definition of giftedness**

Perspectives on the nature of giftedness have been provided both by schools and parents associated with the *Talent in the New Millennium* project. In this connection, schools were approached during March 2001, and parents during September. Much was common to the perceptions of both sets of responders. Also, areas of difference and debate emerged, both within and between the school and parental groups.

A large majority of those responding, over eighty per cent in respect of school responders and over seventy per cent in respect of parents, perceive giftedness normatively. A small number of responders link giftedness specifically to IQ assessment. Implicitly or overtly, the gifted are defined against the performance background of their chronological peers. Comparisons are drawn in relation to performance in aspects of the school curriculum, in relation to analytical and critical performance, and with respect to interpersonal relations. For older students, the focus of comparison may fall on conceptual range or on the student's facility of access to the realm of abstract thought. For younger children, it may fall on facility in numeracy, language or recall, on perception of spatial relations, or on fine motor skills. Interestingly, except in connection with physical performance in events such as masters' games tournaments, or in the context of exceptionally rapid career promotion, giftedness among adults is not defined in terms of age. A depressing implication is that personal development ceases after some undefined age of "maturity". If the implication is false, the question arises as to whether chronological comparison is overemphasised among younger age groups.

Where differences of perception occur among *Talent in the New Millennium* responders, these relate particularly to the discrete definitions of giftedness and talent. About one in ten of the schools participating in programme draws a Gagnéan distinction between giftedness as genetically endowed potential and talent as environmentally nurtured performance. A larger proportion, both of schools and parents, arguing that giftedness is apprehended only

when manifest in performance, reject the Gagnéan distinction as illusory. Some among this group, parents more than schools, distinguish giftedness and talent in terms of performance range. For these responders, giftedness represents broad-spectrum excellence, while talent represents attainment in a specific domain. Another group, unrepresented among the schools but including about a fifth of parental responders, differentiates giftedness and talent in terms of outlay of effort. For this group, giftedness denotes seemingly effortless performance. Talent is the painstaking output of the "average to bright".

About one in six of responding schools, and a rather larger proportion of parents, do not feel confident about framing a definition of giftedness. Some reject definition *per se* on philosophical grounds. Specific comment, received at mid-year from one early childhood centre participating in the *Talent in the New Millennium* study, emphasised the holistic nature of early childhood programmes and, in such a context, the inapplicability of "labelling". An articulate minority of parents, some five per cent of the total, and linked with the primary and secondary rather than the early childhood levels of education, expresses similar reservations. Such debate is healthy. Giftedness is not stasis but process, not a destination but a method of travelling. Debate is the conversation of the wayside.

### Identifying giftedness

Identification of a process is more complex than identification of a condition. It must encompass a variety of approaches, any one of which, in isolation, can yield no more than a snapshot of a multidimensional reality. Thus, there is no "one size fits all" answer to the recognition of giftedness. To expect one is to trivialise the best in the human condition.

Different commentators will approach the recognition of giftedness by varying routes. Parents, according to evidence derived from the *Talent in the New Millennium* project, define giftedness in terms of attainment, but seek evidence of it in terms of potential. They conceptualise giftedness as performance. Asked, however, about evidence of giftedness in their own children, their emphasis falls strongly, not on attainment, but on their children's attitudes. In aggregate, two-thirds of all parental comment relating to the identification of giftedness, submitted to the *Talent* programme, focuses on the attitudinal attributes of the child. Self-motivation, passion, concentration and curiosity stand clear of the field as evidential markers. An early facility in reading emerges as the most widely recognised attainment indicator. Facility in numeracy is rarely mentioned, rating higher with the schools than it does with parents.

Some, but not all, of the attitudinal attributes cited by parents as diagnostically significant are positive. About a seventh of responding parents makes overt reference to the constructive social attitudes and skills displayed by gifted children, categorising the children's qualities of confidence, leadership and social organization, their sense of justice and their sensitivity and empathy. A rather larger section of comment however, from about a fifth of parents, highlights the socially problematic. This body of comment alludes to the boredom and frustration likely to be experienced by the gifted child, and to concomitant behavioural issues whether at home or at school. It cites problems of rapport with age peers, and directs attention to the obsessive perfectionism of the gifted loner.

Lacking the parents' depth of child-specific knowledge, schools are more likely to pick up on attitudinal positives rather than negatives in their identification of giftedness. Comment relating to gifted identification, from about a quarter of the schools contributing to the *Talent* study, notes the gifted students' prodigious capacity for inquiry, their willingness to explore in depth and to take risks in learning. No school in the *Talent* survey overtly factored the socially aberrant into its calculation of giftedness. Early childhood centres alone posited boredom and attendant behavioural problems as diagnostically significant. Both primary and

secondary responders among participants in the *Talent* programme confided their lack of confidence in identifying and addressing gifted underachievement, and their desire for professional development in this area.

### Strategies for identifying giftedness

Working in a complex area, education providers, in identifying giftedness, tend to adhere to customary strategies rather than risk experimental approaches. Typically, early childhood centres and primary schools use two or three strategies per centre, and secondary schools four or five.

**Table 1**, below, ranks fifteen strategies of identification according to mean-rated frequency of use among education providers. The table schedules, also, for each strategy, a modal score for frequency of use, and a mean-rated score for user perceptions of the strategy's reliability. **The scores are calculated from response ratings on a 1 to 4 scale, with a level 1 response in each case denoting high frequency of use or a strong endorsement for reliability.** In other words, the lower the mean or modal levels of response, the more prevalent and favoured is the strategy. Means of less than two indicate a broadly positive perception of the strategy, with negative connotations attaching to means of more than two.

Only three of the listed strategies score means of less than two for frequency of use, and only four of the list receive favourable mean ratings for perceived reliability. Five of the fifteen listed items rate well modally, in respect of frequency of use, and eight rate very badly. The polarisation of modal responses either at level 1 or level 4, in relation to the frequency of use of the several strategies, reflects marked diversity of practice between schools of different type. Early childhood centres, primary and secondary schools each privilege their own preferred approaches to the identification of giftedness.

**Table 1 User perceptions of strategies for identifying gifted and talented students, ranked in mean order of frequency of use.**

#### Frequency of Use Perception of

#### Reliability

#### **Strategy Mean Mode Mean**

Observation of behaviour over time	1.51	1	1.91
Work and attainment profiles	1.58	1	1.71
Teacher recommendation	1.83	1	1.97
Results of standardised tests	2.31	1	1.88
Results of school's	2.46	1	2.41

internal tests			
PAT test scores	2.47	4	2.55
Entry interviews	2.48	4	2.5
Parental recommendation	2.49	3	2.29
Referral from previous school or centre	2.82	4	2.71
Public examination results	2.91	4	2.40
Self-referral	3.31	4	2.58
Professional psychological assessment	3.34	3	2.45
School counsellor recommendation	3.55	4	2.77
Peer nomination	3.58	4	2.75
Community or whanau recommendation	3.64	4	3.11

The listed strategies of identification may be grouped, in descending order of overall frequency of use, into observational, assessment-related and community-related categories. Observational approaches are prevalent in early childhood centres and primary schools. Behavioural profiles are favoured particularly by teachers in early childhood centres, reflecting the personalised bond which these centres seek to cultivate with their children. Cumulative work and attainment profiles constitute the most favoured device among primary school teachers, both for frequency of use and perceived reliability. Intra-school teacher networking also figures prominently in early childhood centres and primary schools. At secondary level, formal testing, whether by agency of one of a range of standardised instruments, or in the context of the school's own internal assessment programme, or through the public examination system, becomes the predominant diagnostic tool. The secondary schools rank their several internal testing regimes highest for frequency of use, while according a preferred choice of standardised instrument the highest rating for reliability. Instruments named by secondary schools in this connection include: MidYis, Yellis, University of Edinburgh Secondary School Screening Profiles and the Australasian English, Mathematics and Science Competitions. PAT testing has a high profile in secondary schools as regards frequency of use, but not for perceived reliability. Test-oriented primary and intermediate schools place high weighting on the results of the National Education Monitoring Project.

Least used among the strategies for identifying giftedness are those which call for community input, for example inter-school networking, parental nomination, whanau recommendation, and peer or self-referral. While schools use these approaches infrequently, they do not totally discount their validity. In relation to every such strategy, mean perceptions of reliability are more favourable than mean scores in respect of the strategy's frequency of use, suggesting that habit, unfamiliarity and issues of logistics lie at the root of under-utilisation. It should be noted, however, that some teachers are ambivalent about the "politics" and bias of parental input into the process of recognising giftedness.

Some devices of identification are used seldom, not from considered choice, but through lack of opportunity. The constraints may be financial or structural. Thus secondary schools, while giving the educational psychology services, generally, a positive rating for reliability, do not use them because they are too expensive. Stretched budgets constrain the schools to choose between psychological support for mainstreamed "special needs" students or for the psychological diagnosis of the gifted underachiever. Usually, the gifted underachiever misses out, while the harassed coordinator of gifted programmes laments his or her own lack of training in diagnostic counselling. Similarly, primary and intermediate schools would integrate teacher-counsellors into the shaping and delivery of their gifted programmes, were they allowed to employ such people.

### **Who are the gifted? A demographic profile of those identified as gifted or talented among the student population.**

Differing in the diagnostic strategies which they use, schools produce a diversity of demographic profiles among the students whom they identify as gifted and talented. Overall, 9.4 per cent of the pupils enrolled at centres and schools taking part in the *Talent in the New Millennium* study are classified as gifted. However, the mean percentage masks a more complex reality. The proportion identified as gifted in any given school or centre ranges from zero to forty-eight per cent of the school or centre's total roll. The spread of responses is widest among early childhood centres, and relatively more homogeneous among secondary school providers where it ranges from 7.8 to 14.6 per cent of student roll.

Typically, schools either identify less than five per cent of their children as gifted, or else a proportion in the ten to fifteen per cent range. Not many schools opt for a figure of between five and ten per cent. This pattern holds true across the decile range of schools taking part in the *Talent* programme. The proportion identified is high or low depending on whether the individual centre or school adopts a strait or inclusive definition of giftedness, and on whether or not gifted underachievers are included in the tally. There is a consistent tendency for primary schools to identify on a more inclusive basis than early childhood centres, and for secondary schools to identify more inclusively than primary. Whether such variations are either desirable or avoidable is a question which merits debate.

Inclusiveness implies that students should be recognised as gifted in roughly equal proportions across the range of gender, ethnicity and socio-economic background. In respect of gender, this is the case among the gifted student populations of schools participating in the *Talent* project. The divergence, in any given setting, between the proportion of boys and the proportion of girls selected as gifted ranges from 2.5 per cent, in favour of girls, among responding schools in the Bay of Plenty region, to 3.8 per cent, in favour of boys, across the spectrum of secondary schools. Averaged across all participating schools and centres, 9.6 per cent of enrolled boys have been identified as gifted, and 9.2 per cent of enrolled girls, a divergence of 0.4 per cent in favour of boys. Input supplied by participating, single-sex girls' schools neatly counterbalances this result. The proportion

identified as gifted in these schools works out at 9.6 per cent of roll, against a mean of 9.2 per cent across all other schools and centres involved in the project.

The implications of data relating to the ethnicity of children and students identified as gifted are more disturbing, as material tabulated in Table 2 illustrates.

**Table 2**

**Ethnicity of children and students identified as gifted and talented in schools and centres taking part in the *Talent in the New Millennium* programme**

**Number enrolled in Percentage of responding schools and enrolment identified**

**Ethnic group centres as gifted/talented**

New Zealand European	7534	10.0
Māori	923	5.6
other Polynesian	63	4.8
Asian	301	9.3
other ethnic groups	223	7.6

Pupils of New Zealand European stock head the table of those identified as gifted, while those of other ethnicity fare less well. Māori and other Polynesian children and students comprise some eleven per cent of the aggregate enrolment in centres and schools involved in the *Talent in the New Millennium* study. Seemingly these children and students, relative to roll numbers, are identified as gifted and talented at about half the rate for New Europeans and Asians, and at lower rates, also, relative to other ethnic groups. Although some individual schools and centres both in the Bay of Plenty and Otago identify Māori children in markedly higher proportions, the pattern otherwise is broadly consistent across the range of respondents. Gifted performance is culturally conditioned, and it is possible that incompatibilities exist between Māori performance and conventional school cultures. It is possible, also, that the deficit in recognition relates, not to ethnicity, but to socio-economic background. Children of beneficiaries and unskilled labourers, proportional to the numbers of these occupational groups in the overall population, are under-represented among the identified gifted; a disproportionate number of Māori fall within these occupational categories.

The socio-economic profile of gifted and talented children and students, as projected in data derived from the *Talent in the New Millennium* programme, raises interesting questions. Occupational data for the homes of gifted children cannot be precisely categorised. In many homes, more than one category of occupation will be represented. In some instances, a parent or caregiver will hold down more than one job, of disparate type, or move fluidly

between occupations. Granted these reservations, data generated by the *Talent* study highlights, nevertheless, some pertinent issues of equity.

In some respects, the socio-economic profile of the homes of gifted children, as projected by *Talent in the New Millennium* study respondents, accords well with the occupational profile of New Zealand's population overall, as presented in current government statistics. Thus, among rural schools taking part in the *Talent* study, the proportion of gifted pupils from agricultural backgrounds meshes well with what government statistical data would lead one to expect.

Discrepancies are evident in some other areas, with the decile rating of the reporting schools emerging as a relevant variable. Clerical workers and machine operators are proportionally under-represented, and the professions proportionally over-represented, in the home backgrounds of gifted children. Government statistics classify 12.9 per cent of the national workforce as engaged in professional work, with a further 12.2 per cent categorised as technicians and associate professionals, aggregating to a total of 25.1 per cent. This percentage, albeit substantial, is markedly exceeded by comparative figures deriving from the *Talent in the New Millennium* study. Here, 15.4 per cent of the homes of gifted and talented children are involved actively in education. Professions other than education account for a further 16.7 per cent of homes, with another 2.2 per cent to be added for the technology industry, generating an aggregate of 34.3 per cent. This exceeds, by 9.2 percentage points, and thus by more than one third, the level that government workforce statistics would lead one to expect.

Professional homes, disproportionately represented as a whole among the gifted student populations, figure in differing proportions according to the decile rating of the school making the identification of giftedness. In respect of the homes of educational professionals, the discrepancy is minor, with the percentage figures standing at 16.6 per cent and 14.0 per cent, respectively, for high and low decile schools. The gap, however, is wide when data relating to homes engaged in professions other than education is analysed. These professions feature in 22.2 per cent of the home backgrounds of gifted children enrolled at schools with a decile rating of 8 or more, and in 11.9 per cent of the home backgrounds of gifted children in lower decile schools.

Schools and centres of different decile rating vary, not in the average overall incidence of their identification of giftedness, but in their siting of it. Variations of incidence are more striking within than between the range of decile groups. Less socially advantaged schools find giftedness, not in lesser proportions than others, but in different areas, and especially among the children of skilled tradespeople. The percentage incidence for this category, respectively, among low and high decile schools is 15.3 per cent and 9.3 per cent. These results may be a function of variation in demographic pattern within the catchment areas of the schools concerned, simply reflecting the just proportions of the various occupational categories within the several schools' rolls. Or possibly, and understandably, schools may adapt their search for giftedness to the diverse contexts within which they operate. Some effects, clearly, are region-specific. Thus, Bay of Plenty schools are twice as likely as those in Otago to identify giftedness in children whose families are engaged in the hospitality and tourism industries. The results raise questions about the ways in which, and the degrees to which, we identify giftedness. Further research is needed to establish whether inter-decile and inter-region discrepancies are merely mirrors of demographic patterning, or whether children from specific socio-economic backgrounds stand a better chance of being recognised as gifted in certain types of schools, or even find themselves relatively handicapped in other types of schools. The issue is especially pertinent to situations where inequalities of ethnicity and socio-economic inequalities appear to overlap.

## Strategies for servicing the needs of students identified as gifted

Attempts to identify the gifted are predicated on the assumption that these young people have particular needs which should be serviced. Responses to the *Talent in the New Millennium* study suggest that primary schools use a wider range of servicing strategies than do early childhood centres, and secondary schools use a wider range than primary. Thus, a parallel pattern emerges, whether in respect of the schools' use of identification strategies or their use of servicing strategies.

**Table 3 below shows, in the context of a 1 to 4 scale wherein a level 1 reply indicates high frequency use, the number of modal 1 responses accruing to each of twelve servicing strategies rated by schools and centres taking part in the *Talent* programme.**

**Table 3**

**Strategies for servicing the needs of gifted and talented children and students, ranked according to their frequency of use by schools and centres taking part in the *Talent in the New Millennium* programme.**

### Number of modal responses

#### Strategy indicating high frequency of use

Enrichment	20
Integrated curriculum	12
Competitions	11
Withdrawal groups	11
Acceleration (single subject)	10
Individual study projects	10
Streaming by ability	9
IEP's	7
Acceleration (multiple subjects)	4
Interest-focused cluster groups	4
Extra-curricular clubs	4
Computer-based, virtual instruction	3

Across all types of providers enrichment, whether classroom or withdrawal-based, is the most favoured response to giftedness. The incidence of other approaches varies according to the type of institution. Acceleration, in single rather than multiple subjects, is widely used in primary schools; where multiple acceleration takes the form of grade skipping, it receives a mixed response from pupils who have experienced it, being perceived as stimulating by some and as both socially and cognitively fragmenting by others. Apparently, early childhood centres and primary schools are alike in making the most of their opportunities with regard to integrated curricula. Pull-out and withdrawal groups are well favoured in the programmes both of primary and secondary schools, although resented as intrusive by some secondary teachers not involved in gifted delivery. Most secondary schools, enjoying larger rolls than their primary counterparts, take attainment grouping further and, in varying configurations, implement whole-class streaming. While this facilitates the homogeneous treatment of the identified gifted, it incurs a risk; the convenience of homogeneity may mask some of the rich diversity of giftedness. Public competitions and extra-curricular activities, on the other hand, afford to secondary school students a range of individual opportunity largely denied to the younger populations of primary schools and early childhood centres. Controversy attaches, however, to IEP's, the most individualised of the approaches to giftedness. These generate a spectrum of favourable and hostile comment among schools participating in the *Talent* survey. Inter-school networking, to encourage the sharing of experience and best practice in gifted programming, is very desirable.

Approaches seldom or never used in servicing the needs of gifted and talented children possess a common feature; they are resource constrained. Some three quarters of schools enrolled in the *Talent* programme voice, in varying ways and to varying degrees, their concern at the perceived under-resourcing of gifted education. Unsolicited comment from at least a fifth of parent responders to the *Talent* study supports the teachers' concerns. Some two-thirds of participating schools cite the need to improve staffing ratios if the needs of gifted children are to be serviced on a sustained basis. Secondary schools, chafing against the structural rigidities of the curriculum and the insistent demands of assessment and measured accountability, ask for teacher release time to allow a measure of programme flexibility. Schools of all types note the high cost of suitable resources, including diagnostic materials. Virtually all rural schools express concern at the unequal costs of resource access which they incur. Computer instruction and networking may assist rural schools to overcome their isolation, but these remedies are not cost-free. Mentorships, little used below secondary level where they function as a back-up facility rather than a strategy of first choice, constitute another area which could be opened up with imaginative resourcing. For concerned parents responding to the *Talent* programme, resourcing is an equity issue. Parents urge that giftedness be accorded its due status within the definition of, and provision for, "special needs", and are willing to lobby up to government level to achieve this. Solo parents of gifted children describe the worrying personal burden of maintaining their children's access to suitable opportunities for extension.

Parents agree, also, with the teachers themselves on the need for staff professional development in connection with gifted education. Over eighty per cent of secondary school teachers responding to the *Talent* study articulate a need for attitudes to giftedness to be changed, both among their students and their professional colleagues. Comments in this category relate to peer pressure, on gifted and talented students, to under-perform; to the difficulty of securing support, across the whole spectrum of a secondary school staff, for programmes of enrichment; to the perception of some staff that the gifted require no special provision; to the reluctance of some staff to allow enrichment to intrude upon the rhythm of their examination-focused classes. Two-thirds of secondary school responders cite a lack of knowledge of the theory and application of gifted education among their colleagues. Over-stretched teachers do not have time to maintain schedules of professional reading. A quarter of all school participants note, over and above the cost of suitable resources for gifted

education, teachers' lack of expertise in identifying such resources, and lack of time to gain the expertise.

Every plea for training, voiced by teachers, is corroborated by the gifted students themselves and their parents and caregivers, with understandable diffidence on the part of the students, and more forcefully by their parents. The great majority of students and parents call for enhanced, and flexible, regimes of gifted education. Their responses, collectively modelling the spread of approaches used in the schools, offer no generic formula of address for giftedness. They constitute a celebration of diversity. Particular strategies, evidently, work well for particular pupils, and less well for others. Parents urge, however, that whatever approaches are adopted, these should be facilitated appropriately by teachers with expertise in the gifted field. The teacher is more important than the programme, and who the teacher is matters more than what the teacher knows.

Some twenty per cent of parents refer overtly and specifically to a perceived need for more pre-service and in-service teacher training in the area of giftedness. Several interesting comments from parents who are themselves trained teachers note the paucity of attention paid to giftedness in college of education pre-service programmes, and urge that this deficit be addressed. Perceptive parental inquiry, responding to the September 2001 phase of the *Talent* survey, wonders how qualified are teachers to recognise giftedness in non-European cultural contexts. From the perspective of the students and parents, it is desirable that the teacher of gifted programmes be well qualified academically. It is crucial, however, that he or she be well qualified attitudinally. The effective teacher of a gifted programme is portrayed as a good listener rather than a lecturer, an enthusiast for what the students themselves are discovering. He or she provides a dynamic role model, not so much projecting stored knowledge as the passion for, and the practice of, inquiry. In roughly equal proportions, parent responders to the *Talent* programme cite instances, drawn from personal experience, where a suitably qualified teacher has made enrichment come alive for their gifted child, and where perceivedly poor classroom practice has killed the process stone dead.

Highlighting the facilitative role of the teacher, parents responding to the *Talent* study call for a better flow of information between the school and home. Over half of all parents and caregivers of the gifted feel under-informed about their local school's enrichment practices. This especially holds true among parents of secondary school students; seemingly, the older the pupil, the less likely is he or she to discuss school-related activities and issues at home. Many parents of secondary pupils would like guidance as to the role they can most effectively play in supporting the school's enrichment outreach. Some feel ignorant, and therefore disempowered, regarding the area of giftedness, and would welcome information evenings or a periodic newsletter. At least a fifth of parent responders question the identification strategies used in the schools with which they have been associated and wish, in the case of their own children, that procedures had been put in train at an earlier stage. Some link this with a call for better vertical networking between schools.

### **Servicing the needs of the gifted: students' preferred learning styles**

The early identification of giftedness creates opportunities for tailoring tuition, on a longitudinal basis, to the student's need and learning style. **Table 4** lists styles and contexts for effective learning, ranked according to the level of positive response which each elicited from gifted students surveyed, during September 2001, as part of the *Talent in the New Millennium* study. **Some 250 children and students, representing the spectrum of early childhood to secondary education, and identified as gifted by their institutions of**

**attendance, appraised a schedule of learning styles and contexts on a four point scale, with a level 1 response denoting a high rating for preference and perceived effectiveness. Table 4 categorises the percentage of levels 1 and 2, and thus basically positive, responses accorded to each item.**

**Table 4**

**Learning styles and contexts, rated for effectiveness by gifted and talented children and students**

**Percentage of gifted students**

**Learning style or context according a positive response**

contexts affording choice to the student	93
problem-solving contexts	87
learning through reading	84
contexts allowing the use of computer technology	78
learning through watching	78
learning with age peers	78
practical contexts, eg model making	75
contexts involving physical activity, eg sport	74
contexts involving argument and debate	69
contexts calling for use of the imagination	69
learning with adults or older people	69
contexts calling for engagement and expression of feeling	67
learning through listening	64

The material in Table 4 affords a further view of the multifaceted nature of giftedness. It provides, also, some generic insights. With one exception, every learning context and style listed in Table 4 attracted the full range of levels 1 to 4 responses from participating students. The exception is the item relating to student choice, the only listed feature which did not evoke a strongly negative rating from any responder. Gifted students, seemingly, will

wring some gain from most learning contexts. Every item scheduled in Table 4 drew a clear majority of positive replies. The vast majority of gifted students, however, enjoy situations which afford them a measure of ownership over the programmes which they undertake. Among the small minority of survey participants disagreeing in this regard are those with unsatisfactory previous experiences of student choice. These students claim to have launched projects and then found their school or centre lacking in facilities to support them. Their disappointment signals a failure, not so much of choice, but of guidance.

Some gifted students go beyond ownership of the immediate and request input into overall programme design and delivery at their respective schools and centres. A corollary of their desire for choice is their strongly expressed preference for hands-on, experiential learning. Problem-solving is strongly endorsed by fifty per cent of gifted students, and is viewed positively by a further thirty-seven per cent. Passive listening is the gifted learner's least preferred option, a conclusion validated both by quantitative and qualitative input from the students and their parents. Perceivedly high levels of teacher-centred delivery underscore the criticism of the classroom, proffered by some students. Fear of being cast in a passive role underlies the reluctance which some express in relation to mentoring or similar contexts which involve working with adults. Some, alluding to the typically uneven profile of giftedness, claim that adults stifle them with unreasonable expectations of a uniformity of performance.

Girls participating in the *Talent* survey, rather than boys, offer qualitative comment reflecting on classroom practice. Girls like creative teaching, and some suggest this tends to come from young rather than older teachers, their comments reflective of a perceived need for enhanced in-service professional development in the schools. Gifted girls, rather than boys, are likely to express an enjoyment of argument, of role play, and of the affective areas of learning and performance. The affective constitutes a polarised learning context which some gifted students relish, regardless of gender, and which others find profoundly uncomfortable. Gifted girls are about fifteen per cent more likely than boys to enjoy the imaginative and affective areas of artistic or poetic performance. Gifted boys, on the other hand, are two-thirds more likely than girls to express a liking for computer use at school, and six times more likely to claim it as a major interest at home. Here too, qualitative and quantitative input is mutually corroborative. It must be noted, however, that none of these gender stereotypes is an absolute, the *Talent* survey data furnishing fertile examples of exceptions to every one. Generalisation may usefully guide but never dictate.

### **Servicing the needs of the gifted: students' perceptions of settings**

Granted the strongly declared preference of gifted children for ownership of their programmes, it is not surprising that many rate out-of-class settings higher than in-class settings as environments for effective learning. Analysing student and parental responses, the *Talent in the New Millennium* study, during 2001, assessed settings for gifted learning from three directions. It compared: (a) in-class and school-based out-of-class settings; (b) school-based and non school-based settings; (c) individual and group-oriented settings.

Among gifted students, seventeen per cent strongly endorse the standard classroom as a learning setting, and a further fifty-four per cent give it, basically, a positive rating, leaving a twenty-nine per cent residue of deficit perceptions. About five per cent of gifted children dislike the classroom intensely. Parents are more inclined than their children to go to the extremes of reply, with over a quarter of their responses strongly favouring the classroom and about a tenth roundly condemning it. A clear majority of gifted pupils accept classroom programmes, not with enthusiasm, but as providing the necessary bread and butter of their

learning. In supplementary comment, some students express a wish for jam on the bread, in the form of a greater flexibility of classroom approach, affording greater opportunities for open-ended challenge. Some overtly voice their frustration at the repetitive nature of learning in a mixed ability classroom.

School-based but out-of-class programmes evidently cater for the individuality of a number of gifted pupils. Thirty-nine per cent of gifted responders firmly endorse these, and another forty-seven per cent accord them basically a positive rating. Seemingly, the gifted will learn in or out of class, but a significant number of them do gain satisfaction from enrichment settings such as pull-out groups, or through involvement in a range of problem-solving activities or competitions. Most parents concur in the judgment of their children, with some two-thirds approving school-based, out-of-class enrichment. The one third expressing reservations do so on cognitive and social grounds. Some parents suspect that enrichment, in practice, offers the gifted "more of the same" rather than activity of a higher cognitive order. A larger minority sees withdrawal settings as destructive of social literacy. In the words of one parent responder, "enrichment should be for everybody".

The individualism which leads many of the gifted to seek stimulus beyond the classroom leads some beyond the school campus altogether. Comparing school and non-school settings as environments for effective learning, pupil and parental responses both favour the school in a ratio of three to two. Apparently, however, a forty per cent minority of gifted young people do their best learning away from school, a situation which probably is healthy. It would be a damning indictment of our society if schooling provided its only stimulus. It is appropriate that the brightest of our young people should be able to access a diversity of creative outlet, whether school, home or community-based, suited to the scope and fecundity of their unfolding talents.

Some gifted young people would appreciate the classroom more if they perceived it to be more supportive. In responses affording quantitative survey data, gifted students show a clear preference for working alone rather than in group settings. Almost fifty per cent of their replies strongly endorse individual learning contexts. The comparable figure for groupwork is thirteen per cent. The students' qualitative comments, however, call for more, not less, group interaction! Comments from about half of the participants in the *Talent* study testify to the students' enjoyment of discussion, wherein like minds meet in a sharing of interests. The contradiction can be readily resolved.

Typically, students responding to the *Talent* programme approve of group settings in principle but are frustrated with current practice. Their ideal group would be numerically compact, and composed of friends similar in interest and level of attainment. Some responders suggest that a vertical spread of age would be beneficial. Offset against the ideal is the reality of the gifted students' prior experience of grouping. The students' complaints in this regard allude to a noisy group environment, rendered unproductive by the apathy of classroom peers, and in which talented participants feel both covert and overt pressure to "dumb down" their performance for fear of being called "nerds".

Parental observation, in this connection, corroborates the judgement of the children. Ten per cent of parents refer specifically to the negative peer pressure experienced by gifted students. Parallel concerns are implicit in a wide range of parental comment supplementary to the *Talent* inquiry. Some parents feel that teachers, confusing excellence and elitism, pursue equity through a policy of downward rather than upward social levelling. These parents voice a felt need to change the culture of New Zealand's schools, with a view to fostering an environment in which a broad spectrum of excellence becomes acceptable. Some sixty-five per cent of parents, drawing on their range of family experiences, argue for the enhanced use of various forms and blends of streaming, attainment grouping,

acceleration, lateral or vertical cross-enrolment, and inter-school pooling or networking. They perceive these contexts as furthering cognitive and imaginative extension, and as providing gifted students with opportunities for collegial support. Realistically, parents appreciate that schools, in their practice, simply mirror society, and that educational development does not take place in a socio-cultural void. There can be no seeding of talent for a society that systematically cuts down its tall poppies.

**The extramural interests of gifted children and students**

The diversity of interest and talent shown by gifted children and students highlights the potential of these young people to enrich society. **Table 5** ranks the nine out-of-school interests most frequently cited by student participants in the *Talent in the New Millennium* study, showing the percentage of students citing each listed item as an area of personal interest. The data is derived from student answers to an unstructured question. In other words, the responders were not provided with a set schedule of interests from which to choose. They were asked, open-endedly, to explain what their personal interests and hobbies were. Many responders claimed involvement in at least six disparate out-of-school activities, with an aggregate of thirty-one different fields of interest being cited. In the range of their replies, the survey’s participants illustrated their hunger for experience, their zest for life and their initiative.

**Table 5**

**Schedule of the nine out-of-school activities most frequently cited by gifted students**

**Percentage of children/students citing**

**Interest or hobby the listed item as an area of interest**

sport	57
music and dance	43
outdoor activities	32
reading	27
art and craft	22
computing	20
speech and drama	11
socialising	11
youth groups	8

Each category scheduled in Table 5 is woven from an array of strands. The sports and outdoor activities in which gifted young people are involved cover everything from flying to underwater hockey, as well as the staples of rugby, cricket and netball. The students' levels of commitment belie the stereotype of the physically inept intellectual. The *Talent* survey's data suggests that the gifted are more, not less, physically active than the general population.

Strong in their powers of self-organization, the gifted and talented find time and room for creativity. Their craft output spans the range from crochet to clock-making. Their involvement in music and dance, as fields of personal interest, transcends by far the profile of these disciplines in the conventional school programme and, compared with sport, the interest is gender-neutral. Gifted boys are fifty per cent more likely than girls to participate actively in sport. In music, the sexes take part in more or less equal proportions. They drum, strum, blow and sing in every style from classical to rock, and they write their own tunes. The apparent linkage between music and giftedness suggests the usefulness of a rethink of the position of the arts in our national curricula.

### **The role of the home environment in nurturing giftedness**

Students' patterns of interest and attainment will be partly genetically endowed and partly environmentally nurtured. The respective contributions of nature and nurture to talented performance are not fixed, and cannot be quantified. **Table 6** summarises parents' perceptions of twelve home-based or home-encouraged factors which have been instrumental in nourishing giftedness in their children.

**Table 6**

#### **Out-of-school circumstances, activities and experiences perceived by parents as powerful in nourishing giftedness in their children**

##### **Circumstance or activity Percentage of parents citing the listed item**

sport	28
home-sponsored extension activities	25
role modelling and support by parents	25
music and dance	24
reading	16
cultural exchanges and foreign language facility	15
drama, speech and debating	10
art and craft	9

outdoor activities	8
socialising with peers	8
youth groups	7
computer access	6

Parent perceptions of the home environment correlate closely with the gifted students' expressed patterns of out-of-school interest. The correlation is so close as to sharpen debate about causation. Do parents shape or follow their gifted children's tastes and preferences? A large majority of parents responding to the *Talent* survey spoke of their children's self-motivation, passion and absorption in inquiry. No student responders implied that their out-of-school interests were anything more than autonomous choices. Clearly, however, parental influence and role modelling is synthesised into the developmental process.

Many parents of gifted children strongly encourage them to take part in sport and outdoor activity, in order to foster both motor and social skills, nurture both individual poise and team-building, and to promote holistic development. Music and dance, also, figure prominently in the gifted home. Parents favour musical involvement for their children as a key to self-expression. Literacy is empowering, and musical facility is a form of literacy. On the other hand, the incidence of reading as an interest among gifted students is rather lower than one would have expected and liked, although many parents allude to the efforts they have made to build up a reading culture within the home.

Parents are keenly aware of the family itself as an environment facilitative of giftedness. They also note the cost involved, both in time and money, and the onus on the concerned family to prioritise both its material and spiritual investments. The ideal family, it is held, provides parental role models of inquiry and commitment to life-long learning. It may include supportive grandparents. It may be enriched by sibling interaction. It is proactive in investing quality time in its children, developing discussion and dialogue with them, and affording them opportunities for enriching, out-of-school experiences. To a degree unusual in monolingual New Zealand, it encourages multiethnic and multilingual exposure, realising the cognitive and imaginative benefits of multiculturalism. For some parents, finance constitutes an obstacle to aspiration and opportunity for their children. It is difficult for single-income families to afford the vehicles of enrichment. Allegedly, however, the best things in life are free. The ideal family, parents maintain, provides its children with unconditional love. Fortified by that love, the children, it is argued, will develop the confidence to take those risks without which no ripening of talent can take place.

### **Appraisal. How effectively do schools meet the needs of their gifted and talented children and students?**

Identifying gifted children and students, in all their diversity, and then meeting the varied needs of these young people, is a challenge for education providers. It redounds to the credit of the schools that a large majority of gifted pupils enjoy their schooling. **Table 7** analyses the pattern of this enjoyment, summarising input data from the pupils themselves and their parents. A level 1 response denotes expression of a high level of enjoyment.

**Table 7**

**Gifted students' levels of enjoyment of schooling**

**Percentage of pupils Percentage of parents indicating enjoyment indicating that their at the designated level children enjoy school at**

**Level of enjoyment at the designated level**

level 1 = high enjoyment	25	23
level 2	57	51
level 3	17	24
level 4	1	2

Parents and children agree that at least three-quarters of gifted pupils gain positive enjoyment from their schooling. Parents tend to be rather more critical of the schools than do the pupils, a tendency which is corroborated when the focus of the question is changed from pupil enjoyment to pupil need. A quarter of parents feel that schools fail to provide pleasure for their gifted children. A third feel that the schools are failing to meet their children's needs.

In this connection, **Table 8** summarises the levels of challenge which schooling provides. The data is collated, as for Table 7, from the input of gifted pupils and their parents, with a level 1 response denoting perception of a high level of challenge.

**Table 8**

**Percentage of pupils finding Percentage of parents challenge in schoolwork at believing schoolwork to**

**Level of challenge the indicated level challenge their children at the indicated level**

level 1 = high level of challenge	6	3
level 2	44	27
level 3	40	49
level 4	10	21

Very few gifted pupils find their schoolwork difficult. Between a tenth and a fifth find it to be extremely easy, especially at primary school level. Subject-specific areas of perceived ease or difficulty tend to vary with gender. Mathematics, overall, emerges as the most consistently challenging subject, cited in this regard by a twenty-three per cent of gifted boys and forty

per cent of girls. However, sixty-two per cent of gifted boys name mathematics as their easiest subject, compared with twenty-five per cent of girls. Boys are twice as likely as girls to find challenge in aspects of language.

Challenge *per se* is valuably neutral. It depends on the nature and the context of the challenge, perhaps on the extent to which the locus of control is internal or external. Quite commonly, gifted pupils cite their "easiest" subject as being the one which affords them the most pleasure and satisfaction. One interesting parental comment, proffered in the September phase of the *Talent* survey, noted that gifted students, typically internally driven, do not need the stress of externally imposed targets. Parallel student comment, in the same response batch, alluded to the socially corrosive effects of competition. More commonly, however, gifted pupils welcome the stimulus of competition, and some overtly ask for more.

In considering the dynamics of challenge, it is interesting and instructive to make a specific analysis of the perceptions of the eighteen per cent minority of gifted students who claim not to enjoy school. Two-thirds of these rate their schoolwork as being easy or very easy. The parallel figure for the gifted who like school is forty-five per cent. The unhappy or frustrated gifted pupil, it seems, is a bored pupil. The unhappy gifted tend, also, to express a rather greater preference than their peers for individual learning contexts, a rather greater tendency to find groupwork frustrating, and a slightly greater preference for adult mentoring. Servicing giftedness, in its variety, calls for flexible solutions from the schools. For some students, the IEP and the mentor clearly have their place. All gifts, even gifts in unprepossessing packaging, are worthy of nurture.

New Zealand is a land with a long, and honourable, egalitarian tradition. The nation's pioneers, of every ethnic origin, came to New Zealand's shores in quest of a better lifestyle. In many cases, their cultural baggage was freighted with a resentment against unearned privilege. Our pioneer forebears worked hard to open up educational access for their children. Inevitably, the unpacking of the cultural baggage has affected the way in which that access has been mediated. It is time to move beyond the perception that gifted children are lucky or privileged. The gifted hold their gifts in trust for wider society. If the gifts are not nurtured, the whole of society is impoverished.

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