what works for gifted and talented pupils:
a review of recent research

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National Foundation for Educational Research

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INVESTOR IN PEOPLE

Contents

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Executive summary

This systematic literature review aimed to inform the Local Government Association about the findings from the literature that focused on implications for the practice of teaching gifted and talented pupils. The review set out to suggest practical recommendations for the processes that contribute to gifted and talented education. From the literature it was identified that these processes included methods of identification, differentiation, enrichment, acceleration, classroom organisation, monitoring and evaluation as well as the roles and responsibilities taken on by various individuals.

About the study

The review was initiated by defining a number of parameters, which established criteria for the selection of material to contribute to the review. It was decided to include only empirical research and literature written by several prominent authors who have been influential in the gifted and talented field and shaped practice in the UK. The research was confined to literature published between January 1990 and March 2003. In terms of geographical coverage, we included studies carried out in the UK and the USA. Other countries were not included because of different policy contexts and the resources available for the present review. The review entailed a search of databases including the Educational Resources Information Center (ERIC), British Education Index (BEI) and the NFER library's own databases.

Key findings

Scope of the literature
The literature related to policy and practice at national, institutional and classroom levels. At present, there is little internal consistency among these three levels, it is not always possible to track any one theme through all levels and there is a lack of multidisciplinary studies that draw together relevant expertise.

Identification
While there is consensus that identification of gifted and talented pupils must be by multiple sources, there is still lack of clarity and understanding about the relative advantages and disadvantages of different identification procedures. Furthermore, it is not clear how these multiple sources should be brought together or their relative status in different circumstances. There is an absence of consensus or discussion, in the education literature, about the characteristics of 'high ability' in different curriculum areas. Again, the absence of informed multidisciplinary studies is noteworthy – much of the literature is limited and the result of individual, albeit well-motivated, practice.

Differentiation
The literature emphasises the need for curriculum differentiation in order to meet the needs of gifted and talented pupils in mixed-ability contexts. However, there is minimal research on coherent approaches to differentiation for these pupils – as opposed to 'shopping lists' of ideas. There is also little research on the opportunities afforded by different types of differentiation in relation to enrichment and acceleration. While acceleration in a particular subject can be a form of differentiation, there may yet be a need for differentiation within an accelerated group, if all individual needs are to be met.

Enrichment
The literature highlights the importance of enrichment in allowing gifted and talented pupils to respond creatively and with

imagination. Enrichment appears to be one of the optimal means of providing opportunities for potential to be released. While the literature is clear that enrichment activities should be embedded within the curriculum, rather than being 'bolt-on extras', so that skills are transferable to other work, there is little evidence of the long-term benefits of enrichment. There are also few criteria for evaluating the coherence of enrichment activities in relation to the whole curriculum.

Acceleration

The literature gave evidence that perceptions of the success of acceleration of gifted and talented pupils are influenced by the structure of any national curriculum in place and the possibilities afforded by the particular educational system. Therefore, in the UK, where the National Curriculum has in-built flexibility so that it can be appropriate for a range of abilities, acceleration in terms of advancing a pupil a chronological year is rarer than in countries where there are more fixed 'end of year/grade' tests that are necessary for advancement. There is evidence that subject-based acceleration is more common in some subjects than others, notably, mathematics and modern foreign languages. There is little attention to the rationale for this and little discussion of the relative appropriateness of acceleration in such subjects or in subjects where greater maturity of response may be a goal for gifted pupils.

Monitoring and evaluation

The literature is clear that feedback loops are important in enhancing the provision for gifted and talented pupils and that multiple means of assessment are advantageous. But there is minimal research on the success of different means of assessment or the relative status that different means of assessment may have. With regard to the evaluation of programmes and curriculum provision, longitudinal studies are lacking and are mostly related to the effect of 'hothousing', rather than provision embedded in 'ordinary' environments.

Personnel

There is evidence that assigning responsibilities to a discrete post ensures that the needs of the gifted and talented pupils are kept on the agenda and are attended to. The literature describes the functions of relevant coordinators but does not link these to monitoring and evaluating the effects of these functions. The literature stresses the importance of collaborative working for gifted pupils. However, this cohort is both relatively small and also represents a wide range of interests, expertise and experience. The importance of training practitioners for discrete posts is increasingly being recognised.

Conclusions

Overview

The literature reviewed indicated that there have been relatively few empirical studies of gifted and talented education and, consequently, evidence-based policy and practice are scarce. Instead, much of the literature reflects practitioner experience. While this is important and valuable, it is different from rigorously conducted research studies. There is the danger that practice remains limited by the particular ideas of those who are influential in the field and is self-perpetuating, and that other options are not considered.

There is considerably more literature on 'gifted' pupils (pupils displaying discrete or generalised ability in the 'academic' curriculum) than on 'talented' pupils (pupils displaying ability in practical activities or artistic fields). These terms are as currently defined and used by the DfES.

It may be speculated that there are well-trodden paths for 'talented' pupils, most of which lie outside the regular curriculum on offer and represent 'specialised' or 'segregated' provision. For example, many local authority music services have well-established structures for advanced instrumentalists or clubs fostering

competitive sport, which provide for the needs of those talented in sports. Whether all relevant young people have access to such provision should be considered.

Critical conclusion

The main conclusion from the literature is that the question remains as to the uniqueness of provision for gifted and talented pupils. A potentially useful source of evidence has been ignored (that of selective and specialist schools). Many of the themes identified from the literature merely reiterate factors in effective curriculum management (differentiation, pupil grouping, monitoring and evaluation, allocation of responsibilities). It is not immediately obvious that some of the literature is discrete to gifted and talented pupils. It may be that many of the suggestions of successful strategies for gifted pupils would work effectively for all types of pupil. Perhaps acceleration and enrichment are exceptions but, even here, there are similar discussions about pupils with learning difficulties who make atypical progress and may not necessarily have to go through all the 'small steps' in order to master a task or understand a concept (to whatever degree).

Recommendations

The present report suggests that a critical look be taken at all the activity that goes on within the broad umbrella of 'gifted and talented' education in order to:

- distil what is unique – rather than an application of practice found elsewhere

- identify evidence of effective practice and the rationale for effectiveness

- explore the conditions under which effective practice develops and the transferability of these conditions

- consider the nature of any discrete training that educators may need to develop effective practice, as well as the most effective way for this training to be delivered.

It is suggested that progress will only be made by a multidisciplinary approach that draws on conceptual analysis, psychological theory, practitioner experience, and expert description of 'ability'.

1 Introduction

1.1 Background

A major strand of government policy in the UK, particularly that relating to education in inner-city areas, is provision for gifted and talented pupils. An increasing number of schools are now considering the needs of their most able pupils as seriously as they consider pupils with learning difficulties. A great deal of policy and practice has developed in a short time-scale, yet there is no research-based rationale for this policy and practice.

The purpose of this review, commissioned by the Local Government Association, is to present findings from the literature that focus on implications for the practice of teaching gifted and talented pupils. The aim of this review is to suggest practical recommendations for the processes that contribute to gifted and talented education. From the literature it was identified that these processes include methods of identification, differentiation, enrichment, acceleration, classroom organisation, monitoring and evaluation, as well as the roles and responsibilities various individuals should take on.

1.2 General educational policy in the UK

In the UK, the National Curriculum is intended to suit all pupils across the spectrum and therefore classroom practice should ideally be differentiated according to pupils' needs. It is less common in the UK than in the USA for gifted and talented pupils to be accelerated and separated from their peers for their whole time at school. Instead, it is more common for pupils to be accelerated in specific subjects. Recently, policy and practice has begun to consider gifted and talented pupils' needs and this will be discussed within the review.

1.3 The review process

The review was initiated by defining a number of parameters, which established criteria for the selection of material to contribute to the review. It was decided to only include empirical research and literature written by several prominent authors who have been influential in the gifted and talented field and shaped practice in the UK. The research was confined to literature published between January 1990 and March 2003 as earlier literature would have related to past policy and educational contexts; it was also decided that recent studies would be of most interest. The literature related to pupils between the ages of five and 16. In terms of geographical coverage, studies carried out in the UK and the USA were included. Other countries were not included because of different policy contexts and the resources available for the present review.

In order for the literature review to focus on practical implications for the teaching of gifted and talented pupils, certain areas were excluded from the search as they were felt to address slightly different issues. For example, we did not consider research that focused on underachievement amongst gifted and talented pupils, nor was research on able children from ethnic minority backgrounds included. We also excluded research that was primarily concerned with psychological rather than educational issues related to able pupils. We did not focus on studies that discussed individual subjects at length.

The main method used to identify relevant research literature was to conduct searches of electronic and online databases. Databases were searched using various keywords, such as 'gifted', 'talented' and 'highly able'. (Details of the research strategy are available from the authors on request.) Searches of the various databases yielded approximately 580 citations. The inclusion criteria were applied,

and as a result, approximately 200 articles were requested (35 per cent). Approximately ten articles were unobtainable and time constraints prevented access to them. As the books and articles arrived, the references cited in them were checked and further articles were obtained. Due to limited time, no hand searches were carried out.

1.4 Analysis of the research literature

All retrieved texts were subjected to a preliminary review in order to establish more fully the degree of relevance to the aims of the study or the opinion piece. At this stage, several pieces of work were rejected because they did not fall within the scope of the review. Some were discounted due to their discursive nature while others had weak methodologies, or findings that were questionable. The final sample reviewed was 52 articles and 17 books.

Each article was reviewed using a standard framework that contained the following fields:

- authorship, dates and full-source details

- focus of the article and relevance to the review aims

- type of study and methodological details, including sample size and characteristics, where applicable

- overview of the findings, key conclusions and recommendations

- reviewer's comments.

1.5 Setting the scene: definitions within the gifted and talented literature

This section sets the scene for the conduct of the review and the chapters that follow. Early on in the review period it became evident that there were several key words occurring in the literature and that various authors interpreted them differently. According to George (1992), there were over two hundred definitions of 'giftedness' and associated terms such as 'gifted', 'talented', 'more able', 'exceptional' and 'marked aptitude'. This differing use of terminology has caused specific problems to researching the able, since one has to ask whether the sample group of able children is typical (Freeman, 1998). Consequently, if practitioners are describing different cohorts, how can appropriate provision be matched? There clearly needs to be some coherence in key terms within 'gifted' education.

The terms 'gifted' and 'talented' have only come about with the introduction of the Excellence in Cities (EiC) initiative which aims to revive education in urban areas. Prior to this, teachers referred to pupils as 'able' or 'highly able'. Within EiC, pupils are considered to be 'gifted' if they are in the top five to ten per cent of the cohort in their school in academic subjects. Children are thought to be 'talented' if they have exceptional ability in subjects such as music, art or sport. This initiative is an important step forward as it recognises the importance of identifying talented children in more vocational areas as well as academically gifted children. Throughout this report, the words 'gifted', 'talented' and 'able' have been used interchangeably, mainly to reflect how the authors used them in the writing.

1.6 General overview of the gifted and talented literature

The literature illustrated that there are very few empirical studies from the UK in the early 1990s on educating gifted and talented pupils, and because of this it is unclear what constitutes effective provision. During the middle of the 1990s, a growing volume of literature emerged more from prominent authors who have become very influential in the field of gifted and talented (Eyre, 1997a, b and c, 2000, 2002; Freeman, 1991; Freeman *et al.*, 1995; George, 1992, 1995; Montgomery,

1996). These authors agreed that awareness of gifted and talented issues was growing, yet their work was still based on individual opinions, rather than rigorously conducted empirical studies.

Eyre (1997a) acknowledged that very little has been written about educating able children in Britain, although she remarks that there is a wide body of research outside the UK. Much of this research has been from a psychological perspective. Although the psychological literature was not included in this review, it is important to acknowledge that learning styles and different cognitive responses are important considerations when teaching gifted pupils. In her work, Eyre (1997a) attempted to discuss these issues by drawing on research into the characteristics of able children and effective provision. She also drew on her experiences within the classroom to provide a useful book to help educators of able children in ordinary schools.

During the late 1990s, provision for gifted and talented children was the focus of attention both in the UK and the USA and, thus, more literature was written. Much of the literature draws upon experience, and although this can be recorded systematically and rigorously it is not the same as well-designed empirical research. A piece of research pertinent to this review was Freeman's review for Ofsted, *Educating the Very Able: Current International Research*. Her aim was:

> *...to provide up-to-date research findings about the development and education of very able pupils, and so improve communication between researchers and*

> *those who make and carry out practical educational decisions.*
>
> (Freeman, 1998, p. v)

Freeman (1998) offered a guide for those who make and implement practical educational decisions, and her findings will be discussed throughout the current review. She felt that she was unable to provide the hundreds of references from which the information was drawn, so instead only chose references which she considered to be the most important. This could be thought to be selective.

A recent article questioned whether teaching and learning practices are unique to able children or whether the same principles could be applied to the education of children with special educational needs (Fletcher-Campbell, 2003). The author believed that:

> *...a more fruitful way forward is to consider how the specialness can be embedded in all activities, using the widest repertoire at our disposal, developed through constant sharing of practice and reflection and whether the enhancement, whatever it looks like, ought not to apply to all pupils.*
>
> (Fletcher-Campbell, 2003, p. 5)

In the USA, empirical research on able children's education is also limited. As more and more states develop their gifted and talented programmes, it is likely that more research will appear. Perhaps what is needed is a national evaluation of gifted provision that would indicate the most appropriate methods. At the time of writing, we are a long way from an agreed framework of criteria for effectiveness.

2 Official policy

2.1 Policy concerning gifted and talented children

The existence of official statements of policy about a particular aspect of education suggests that, at the least, this aspect is on the public agenda even if the policy itself indicates neither the way in which it has been implemented nor practice itself. Policy may drive practice (usually a 'top-down' model) or result from practice (usually a 'bottom-up' model) and its link with practice may be circuitous. As regards to official policy relating to pupils who are 'highly able', 'gifted' or 'talented' (see Section 1.5 on definitions), there is evidence that it has developed incrementally. The policy is influenced by Ofsted reports, interest groups such as the National Association for Able Children in Education (NACE) and the National Association for Gifted Children (NAGC), and individual studies (Bonshek and Walters, 1998; George, 1992, 1995), together with pressure from the wider educational policy context - in particular, the Government's drive to raise standards of achievement (GB. Parliament. HoC, 1997) and from economic necessity (the need for competitiveness in international business).

At the beginning of the 1990s, there was very limited research exploring policy at a national, local and school level, suggesting that policy for this group of pupils was not high on the agenda for educators. Archer (1992) reflected on the position of the gifted in 1992 and came to the conclusion that, following the omission of able and talented children from the Warnock Report and the Education Act 1981, their needs were finally being recognised.

2.2 Local Education Authority (LEA) policy

In 1992, the Education Management Information Exchange produced a brief 'snapshot' of what was being done at the time by LEAs to meet the needs of gifted, talented and exceptionally able children (Cooke, 1992). A survey was returned by 72 LEAs and the general conclusion was that:

> *...despite harsh financial constraints, Local Management of Schools (LMS), opting-out and many other heavy pre-occupations, a substantial number of LEAs (predominantly but by no means exclusively, county LEAs) have somehow maintained, and in a few cases even enhanced, their special arrangements to help gifted children.*
>
> (Cooke, 1992, p. 1)

The original 'snapshot' report was updated two years later by Cooke (1994) since there had been several government initiatives with regard to supporting able children. From the 1994 survey, it was found that the LEAs differed tremendously in their provision for gifted children but, overall, LEAs had either maintained or increased their provision since 1992. No LEA had discontinued provision and the survey illustrated that, on the whole, LEAs were positive about gifted provision.

More recently the literature covering gifted and talented provision at LEA level has focused on EiC areas (Ofsted, 2001b; Goodhew, 2002; Warwick, 2003) and thus, gifted and talented pupils in non-EiC LEAs have been neglected in the reporting. Thus, more empirical research is needed in non-EiC areas.

2.3 Policy in one LEA: a case study

Only one research article illustrated that a particular LEA had a long-standing interest in able and talented pupils (Clark, 1997). Cleveland LEA in its 1993 publication, restated its commitment to 'respect and nurture individual differences, needs, rights and responsibilities' and highlighted the point

made in the report *The Education of Very Able Children in Maintained Schools* (DES. HMI, 1992):

> when specific attention was given to the needs of very able children there was often a general increase in the level of expectation for all pupils and this was sometimes reflected in improved public examinations.
>
> (DES. HMI, 1992, p.78)

Cleveland supported teachers to undertake action research projects in their own classrooms and schools. The author reported that action research had proved to be successful in Cleveland, since it allowed teachers to observe and reflect upon teaching that led to implementation in the classroom in several cases.

2.4 Insufficient policy – why was that?

Having reported that LEA provision at the local level was fairly positive, some of the prominent authors upheld that by the middle of the 1990s, provision at school level was insufficient, largely because very few LEAs had an able pupil adviser and most of the schools did not have a whole school policy (Eyre, 1997b; George, 1992). The literature suggests several reasons why able children were ignored. Eyre (1997b) listed three assumptions that explain why provision had not been provided in the past.

1. Able children always succeed and therefore do not need extra help.

2. Able pupils are arrogant.

3. Able pupils are so different that it is impossible to meet their needs.

Moreover, several authors remarked that the able were ignored in the past because provision was seen to be 'elitist' (Bore, 2003; Teare, 1997).

It has also been suggested that central government was slow to meet the needs of the able in one particular LEA, because it failed to recognise that these children had special needs (Bonshek and Walters, 1998). From the case study visits, which included interviews and a questionnaire with staff and Special Education Needs Coordinators (SENCOs), the research also illustrated that the LEA was fettered by central government (Bonshek and Walters, 1998). There was the perception that the education system is constructed to suit the needs of the majority and does not cater for those with atypical needs (Eyre, 2002).

2.5 National policy on gifted and talented children: a positive step forward

Towards the end of the 1990s, there were major developments nationally, reflected in various publications (Teare, 1997). Eyre believed that, between 1997 and 2000, the issue of education for able children moved 'from the margins of the educational arena towards centre stage' (Eyre, 2000, p. 15). With the dismantling of the Assisted Place Scheme, whereby grants were available to support able children at independent schools, Eyre (2000) and Bonshek and Walters (1998) believed that the Government began to focus on the establishment of a national policy to assist gifted and talented children. Since New Labour came to power in 1997, there has been particular concern about providing for gifted and talented pupils in areas of disadvantage. An advisory committee of experts in the field of gifted education was set up to give policy advice and national initiatives such as the gifted and talented strand of the EiC initiative and other grant-funded programmes were established (ATL, 1998; Bonshek, 2002; DfEE, 1999; Ofsted, 2001b).

The Annual Report of Her Majesty's Chief Inspector of Schools 1999-2000 (Ofsted 2001a) reported on visits to 20 secondary schools in seven LEAs in the summer of 2000. The purpose of the visits was to explore the progress that had been made in implementing the Strands of the EiC initiative which had been in place since September 1999. Ofsted found, that in general, the progress made in implementing the gifted and talented strand was satisfactory and progress was found to be good in about a third of the schools.

The grant-funded programmes have included masterclasses (Ofsted, 2001b), summer schools (Pye *et al*., 2000) and independent/maintained school partnerships (Goodhew, 2002; Ofsted, 2001b). Ofsted (2001b) evaluated each of these strategies by visiting ten pilot masterclass projects, 31 summer schools in 18 LEAs, four independent/maintained school partnerships and 43 secondary schools in EiC areas. The methodology is not specified, but is assumed to be qualitative since teacher comments are cited. HMI found that the main benefit of these initiatives was the increased amount of quality out-of-school activities, but commented that more should be done inside the classroom.

Most recently, Pocklington *et al*., (2002) carried out qualitative, empirical research on the gifted and talented strand of EiC and concluded that this strand was welcomed. At local level, a descriptive article on Staffordshire's individual summer school (Towne and Branson, 2001) has been written by the summer school adviser and co-organiser; it included findings from a questionnaire given to the participants after the event. It concluded that the scheme was very successful and made several recommendations on the organisation, running and funding of future gifted and talented summer schools.

There are other innovative programmes which have arisen from government policy. For example, in the White Paper, *Schools: Achieving Success* (England. Parliament. HoC, 2001), the Government announced the establishment of a National Academy for Gifted and Talented Youth (NAGTY). Eyre, as the first Director for the National Academy, explains that the aim is:

> *...to develop, implement, promote and support educational opportunities for gifted and talented children and young people aged up to 19, as well as providing support for parents and educators.*
>
> (Eyre, 2002, p. 72)

She explained that a major reason for establishing the Academy was that we still know relatively little about how best to support and encourage the learning of gifted and talented pupils. Children who become members of the Academy can then benefit from the Academy's programmes that focus on learning in and out of the classroom. An important part of the initiative was to undertake research into these needs, yet the article does not specify any systematic research programme (Eyre, 2002). The article illustrated that more rigorous empirical research needs to be undertaken as these new ventures with gifted and talented children develop.

2.6 The importance of research-informed policy

The literature shows that educators are beginning to recognise the importance of policy informed by empirical research. Eyre (2000) discussed whether evidence-informed policy is a myth or reality in gifted and talented education and focused on the EiC initiative. She believed that two pieces of research acted as a platform on which to base EiC policy. The policy took into consideration Freeman's 1998 work, which analysed research and practice on the identification and education of able pupils, and also the House of Commons (1999) Select Committee Report No 3: Highly Able Children (GB. Parliament. HoC, 1999). Nevertheless, Eyre upheld that the EiC policy ignored other research findings in some places.

Although evidence-informed policy is beginning to emerge, several key authors felt that relevant theory and research need to be considered when formulating policy (Eyre, 2000; Freeman, 1998; Teare, 1997). And yet the issue is that 'the fundamental lack of a good research base remains' (Eyre, 2000, p. 21). The prominent authors agree that research on educating able children needs to be developed. George (1992) highlights the need for more comprehensive studies looking at classroom life. Montgomery is more specific and expresses that there needs to be more systematic research, preferably long-term, which compares traditional methods of

teaching and learning with her preferred 'cognitive process teaching methods' (Montgomery, 1996, p. 262).

2.7 Gifted and talented policy outside England. Scotland: an example

Whilst UK government policy, and subsequently also Scottish policy, in the 1990s had been pushing for more assistance for able pupils, a Scottish research study suggests that there had '*been very little local policy development and only sporadic initiatives within individual schools*' (Hamilton, 1999, p. 86). The research aimed to look at this by using four case study schools, specifically to look at teachers' judgements on identification of gifted pupils. The author suggested that the focus on equality of opportunities and reluctance to consider selection in the Scottish education system meant that the needs of gifted and talented pupils had largely been ignored (Hamilton, 1999).

2.8 Summary

This chapter revealed that since New Labour came to power in 1997, an increasing amount of policy concerning gifted and talented pupils has developed, particularly in areas of poverty. Nevertheless, it is important that we move towards evidence-informed policy which considers practitioners' and pupils' views on gifted education so that more appropriate targets are more likely to be created.

3   Personnel: the people who make a difference

3.1   Introduction

There are several groups of people whom the literature identified as being critical to the education of able children. These ranged from the external policy makers, LEA advisers and officers to individuals within schools, such as teachers, gifted and talented coordinators and governors. It should be pointed out that, following the introduction of the National Curriculum in the Education Reform Act 1988, school management has increasingly been distributed with a growing number of posts of responsibility, for discrete areas such as gifted and talented provision. This chapter aims to reveal what is written in the literature about the roles of these people and how to improve them.

3.2   Collaborative partnerships

It is unsurprising, given all that is known about the beneficial effect of parental involvement in the education of all children, that the literature on provision for gifted and talented pupils highlights the need for parental involvement. Teare (1997) and George (1995) are merely applying the need for parental involvement to the particular area of education in which they are interested. Ofsted (2001b), evaluating EiC and other grant-funded projects, make the same point but with the added justification that these projects will be new to parents who must be informed about these particular educational initiatives which affect their children.

Similar application of existing practice is seen elsewhere. For example, the educational psychology service has, traditionally, been used as a source of support for pupils with learning difficulties. Only relatively recently, and not commonly, has it been regarded as a source of support for able pupils. Gregor's (1994) study is therefore noteworthy.

Schools are beginning to work together in partnership in provision for gifted and talented pupils. One study revealed that two mainstream schools in the UK came together with help from their educational psychologist to discuss good practice in educating able children (Gregor, 1994). The educational psychologist acted as a facilitator, organising a self-help group which met three times within two terms to discuss meeting the needs of able children. The study found that because the educational psychologist had a good knowledge of the two schools, trust was able to develop, which allowed for increased brainstorming and creativity. The sessions developed a strong team spirit and a wider perspective. The schools did most of the work themselves, which meant that they felt they had complete ownership of the project (Gregor, 1994). However, other evidence revealed that pupils were not referred to the educational psychologist. This source of support may be underused.

The literature illustrated that new roles were adopted by educators of the gifted in the USA in the 1990s (Schack, 1996; Westberg et al., 1993). 'The Classrooms Practices Observation Study', conducted by The National Research Center on the Gifted & Talented (NRC/GT), examined the instructional and curricular practices used with gifted and talented students in regular elementary classrooms in the USA. Systematic observations were carried out in 46 third or fourth year classrooms within four regions of the country. The study presented evidence that individual teachers should not have sole responsibility for providing appropriate learning experiences. It was felt that administrators, gifted education specialists, reading consultants, mathematic consultants, guidance personnel and parents should work together to change practices (Westberg et al., 1993).

Similarly, Schack (1996) believed that sharing good practice and collaborative working are the key to success, for example, via conferences. The author stated that more research on the effectiveness of the curriculum for the gifted was vital and that this research should be shared by publishing work in journals.

3.3 Role of the coordinator

The literature revealed that there needs to be an infrastructure in place to support teachers in educating the gifted. This should ideally involve a discrete coordinator, senior management team, governors and personnel outside school such as mentors and parents. The role of a coordinator, both in the everyday needs of the gifted, as well as specific enrichment events, is vital to ensure success and is highlighted in the UK and USA literature (Bonshek and Walters, 1998; George, 1995; Welding, 1998; Ofsted, 2001b; Warwick, 2003; Westberg *et al.*, 1993).

In the early 1990s, George (1992) drew attention to the fact that a teacher is not simply a 'dispenser of information' but rather acts as a 'facilitator of learning' or a 'manager of resources' (George, 1992, p. 169). He developed this idea and believed there was a need for a school coordinator to have been involved from the beginning and with the initiation of the school's gifted and talented policy (George, 1995). Effective LEA and school coordinators are vital in supporting the EiC initiative and are often referred to as GATCOs (Gifted and Talented Coordinators). Warwick (2003) commented that:

> *...the most effective coordinators work quietly with departments and schools offering suggestions often on a one-on-one level.*
>
> (Warwick, 2003, p. 19)

Thus, school and strand coordinators must work together systematically. Additionally, Warwick suggested that LEA network meetings are a good opportunity to disseminate good practice amongst school coordinators. Coordinators have played a pivotal role in some of the EiC initiatives that involve enrichment activities. In their report on gifted and talented programmes, including summer schools and masterclass projects, Ofsted (2001b) reported that coordinators need to have a clearly defined role, with the authority to carry it out and with support from senior management.

Surveying comprehensive and primary schools in one LEA, Bonshek and Walters (1998) found that where a gifted policy was in place, it was the SENCOs who were involved with the able. While the rationale is that SENCOs are skilled in differentiation and meeting individual needs, it should be noted that the DfES states that SENCOs should not also act as GATCOs. GATCOs within EiC are expected to undertake a national programme of professional development (Pocklington *et al.*, 2002). Bonshek and Walters found that in those schools with a gifted coordinator, the survey revealed they had very little time to undertake their role as coordinator. The authors recommended more time and training allocated to coordinators of the gifted.

The most recent study of the gifted and talented strand, indicated that GATCOs were present in the majority of schools and were most effective if they had previous managerial experience. GATCOs needed to possess a range of qualities which included:

> *good relationships with other staff; inter-personal skills and the ability to motivate people; good organisation, efficiency, and time management.*
>
> (Pocklington *et al.*, 2002, p. 12)

The literature revealed that the role of a gifted coordinator within schools in the USA was not as common as in the UK. The Classrooms Practices Observation Study in the USA revealed that even when a gifted programme was present in a school, the teachers did not provide differentiated experiences for the gifted learner (Westberg *et al.*, 1993). The authors recommended that

the gifted education specialist, who could perhaps be regarded as a coordinator, or other staff development personnel, should support teachers in meeting the needs of gifted students.

3.4   The role of mentors

The literature revealed that, in addition to coordinators, mentors played an important part in improving the learning environment for gifted pupils and, consequently, other pupils educated with them (George, 1995; Freeman, 1998; Montgomery, 2001). George (1995) upheld that it was the mentor's role to engage able pupils in challenging, open-ended discussions in a supportive environment. This usually involves individual or small groups of pupils after school at regular times. Mentors usually give up their time voluntarily to help gifted pupils in the classroom. The author urged schools to approach potential mentors such as university lecturers, other teachers, individuals from societies, cultural institutions and businesses; he stressed the need for careful selection (George, 1995).

Mentors played an important role in Spectrum Connections in the USA (Cheng *et al*., 1998), a ten-year research project (1983-1993) aimed at developing an alternative approach to curriculum and assessment which developed diverse curricula for pre-school and first grade pupils. The idea was to create 'classrooms and learning experiences that look and feel more like the real world' (Cheng *et al*., 1998, p. 86). Mentors acted as a friend as well as a teacher to gifted pupils and worked with them on a one-to-one, weekly basis. It was important that mentors were trained for their role and interviews with pupils and mentors revealed that several benefits arose from mentoring, including:

- developing personal relationships

- fostering social skills

- helping pupils to recognise their own strengths

- gifted pupils acquiring skills in a specific domain

- connecting school to the world.

Several disadvantages were identified, for example, mentor absentees and withdrawing children from the ordinary classroom.

3.5   Teachers' roles

The literature recommended that schools have coordinators and mentors for the gifted and talented pupils, but in many circumstances this is not possible, and thus, class teachers are largely responsible for meeting the needs of gifted pupils. It is very important to establish their role and responsibilities as children spend most of their time within the classroom. The literature revealed a gap in empirical work on the role of the teacher towards gifted and talented pupils within the classroom.

Freeman (1991) followed up a study undertaken in 1974, which investigated attitudes to giftedness. She took a sample of 70 children, aged between five and 14 living in the north-west of England, whose parents were members of the NAGC and compared them with equally able children whose parents had not joined NAGC, as well as a random sample of children from the same social circumstances. Ten years later, she investigated what had happened to the children and their parents. She used in-depth interviewing with young people to discover what they had experienced and statistical analysis of their measurable progress. The study revealed that communication between teachers and pupils was key and that gifted pupils appreciated teachers who were willing to listen as well as talk. One 17 year old gifted pupil expressed his feelings:

I talk a lot, and so I talk to the teacher about what I think… It's much more fun than talking to my peer group, because teachers know so much.

(Freeman, 1991, p. 133)

Teachers need to be confident in the classroom (Freeman, 1991) and sufficiently honest to admit ignorance in the face of challenges from highly able pupils and they need to seek to learn with the pupils as required (George, 1992).

One way of ensuring quality teaching is to devote individual time to listen and work with gifted children. A project that investigated year 6 teachers and more able pupils in ten Oxfordshire primary schools involved interviews with teachers and senior managers, and classroom observations of high-ability pupils. It showed that time should be devoted to gifted pupils in order to encourage higher levels of understanding (Eyre and Fuller, 1993). The research showed that able pupils rarely asked for help from their teachers or were given one-to-one attention. Eyre (2000), whilst working with teachers on in-service training, found that teachers often felt guilty when they spent time with able pupils.

In order to allow able pupils to work to capacity, it is important that a positive school ethos is created in which achievement is accepted and acknowledged (Teare, 1997). Teachers should praise gifted and talented pupils. Eyre (1997c) believed these pupils needed encouragement and rewarding as much as other pupils, perhaps even more if the climate in the school does not value achievement or if they lack confidence because they set themselves very high standards. Eyre (1997c) also believed that it was helpful to reward able pupils with recognition in some tangible form such as certificates. As well as supporting the educational well-being of pupils, it is important that teachers provide support and pastoral care for the children to ensure their emotional well-being and development (Freeman et al., 1995; Teare, 1997; Eyre, 1997c). Often gifted children feel frustrated because they feel 'different' from their peer group.

A final point drawn from the literature is that teachers should make good use of their own specific talents. This was highlighted in Project Spectrum in the USA where there was an example of an artistic teacher using her skills creatively. Teachers should also make time to extend their knowledge and talents by undertaking out-of-school activities such as visiting museums and art galleries (Clark, 1997). Teachers are also advised to make good use of the skills of other non-teaching adults. Eyre (1997a) illustrates this point by referring to a parent-helper who was a worker in Oxfam. She came in to teach able children about a project on third-world farmers. This work was then presented to the whole of the class for discussion and debate and, therefore, benefited others too.

The literature suggested that, as with other pupils, teachers need to adopt multiple roles with regard to able pupils, including acting as a role model (Feldhusen, 1998), something which several authors were concerned that teachers found difficult. Teachers' lack of confidence with able pupils may stem from the challenges which these pupils present to teachers' own knowledge, understanding and skills. There was evidence that teachers would like to acquire greater conceptual competence in areas in which they may be less familiar (Eyre and Fuller, 1993; Freeman et al., 1995; Ofsted, 2001b).

3.6 Summary

The literature suggested that practice is influenced more by the people who implement policy and work directly with young people, than the policy itself. Confidence and effectiveness are enhanced if teachers engage in collaborative partnerships within and outside the school. However, the development of practice is inhibited by the present lack of research to support those working with gifted and talented pupils.

4   Identification

4.1   History of identification

The link between identification and provision is critical but enigmatic. Any particular means of assessment, for example, a cognitive ability test, will identify a particular cohort but this cohort is not necessarily the same as those identified by another means, such as teacher observation, which suggests that there is a cohort needing special provision. Furthermore, if the characteristics of a particular 'specialness' – in this case, high ability in a particular area of the curriculum or discipline – are not known to the assessor, then those with these characteristics will not be identified. Again, there needs to be evidence that the cohort with the particular characteristics require special provision. Conceptually, what would seem to be necessary is a very clear delineation of the characteristics of 'high ability' in all logically different curriculum activities, and valid means of identifying those manifest and embryonic characteristics. This is logically prior to delineating any special pedagogy or provision that most effectively meets the needs of pupils with those characteristics.

The policy context cannot be ignored. For example, the tripartite organisation following post-war reform represented in the Education Act 1944 gave clear messages about 'ability' being identifiable by one means at age eleven. That context is a far cry from the context of the new millennium influenced by theories such as Gardner's 'multiple intelligences'. However controversial these may be, they do at least draw attention to the range of activities in which individual pupils may excel and suggest that opportunities need to be given for such excellence to be observed. At the same time, the promotion of inclusion within the present policy context influences identification in that all teachers need to have the skills and expertise to recognise latent ability (even if only to refer a young person to an appropriate colleague) as a range of abilities is likely to be present in any year group in the average non-selective school.

A realisation has developed that the performance of pupils is related to the context in which they are educated; schools make a difference and the educational experiences to which children are exposed shapes their response to it. Therefore any fixed identification of ability, talent or giftedness becomes increasingly suspect – though redundant. Freeman (1998) perceived that education was moving:

> *away from the relatively static labelling of specific children as gifted towards a more flexible developmental approach which recognised the learning context.*
>
> (Freeman, 1998, p. 15)

While it is important that all practitioners are clear on definitions, since it is only then that the relevant cohort can be identified, the literature differs as to how these definitions should be determined, with some advocating that teachers make the decisions most appropriate for school policy and context (Eyre, 1997a; Freeman, 1998) and others that definitions should be given to teachers (Montgomery, 1996). The literature gave evidence that there is a limited amount of rigorous empirical research on identification. Much of the ensuing section focuses on opinion pieces, albeit pieces based on authorial experience as educators.

4.2   Identification – a wide talent pool

The literature emphasises that a wide talent pool must be identified that incorporates not only academic ability but also talents in other subjects such as music, art and PE. (Bore, 2003; George, 1995). Bore, as director of the NAGC, believed that it is right that schools in the UK have begun to celebrate achievement in all

subjects (Bore, 2003). He feels that flexible identification procedures, relative to each school, are more productive than a national IQ norm. He also feels educators need to look out for all gifted children within the classroom, especially those with latent ability. Teachers need to be able to identify potential, as well as actual, achievers (Bore, 2003; Welding, 1998).

A two-year participant observation study in the USA investigated the role of educators in improving the education of gifted pupils (Schack, 1996). The author found that it was important to recognise that educators must challenge potentially gifted students from disadvantaged backgrounds, who may not have developed their abilities in a way which would be recognised. This was a small-scale research project in which the researcher visited schools weekly for a whole year and carried out interviews with teachers and students. This study illustrated that all students must be challenged so that they can all reach their potential.

4.3 Methods used for identification

The fundamental method of identification is providing opportunities for all children to display their giftedness and ability through challenging activities (Freeman, 1998; Sizmur, 1991; Teare, 1997). Teare suggested that provision for the gifted and talented is the best identifier since, without this, identification cannot take place as pupils have no opportunity to show what they can do. Several key authors within the literature stressed that identification should be by multiple criteria (Freeman, 1998; George, 1992, 1995; Pocklington *et al*., 2002; Teare, 1997; Welding, 1998). George said it is not surprising that several identification methods are used, given that there are several areas of giftedness and talents (George, 1992). George categorised these methods into teacher appraisal, rating scales and checklists and standardised tests (George, 1992). Drawing on the past experiences of many professionals, Montgomery (1996) believed that it is quite

clear that one-dimensional methods and tests are not successful in identifying the able (see also Eyre, 1997a). Teare (1997) upheld that the more methods of identification used, the better the outcomes. Bentley (2003) added that there should be a balance of strategies, and educators should not be reliant on one method, in particular testing (see also Teare, 1997; Pocklington *et al*., 2002).

Welding (1998) in her study in one comprehensive school in the UK, in which she sent a questionnaire to all staff and interviewed able students, found that the most frequent method of identification was teacher observation and judgement. A very small percentage of staff used subject-specific checklists, a strategy which the author believed to be appropriate. From the questionnaire she also found that there was 'widespread uncertainty' amongst staff about definitions, and half of the respondents said that they were not confident about identifying most able pupils. This small-scale study illustrated that teachers in the school were not confident with identification procedures involving teacher observation and judgements.

George (1992) favoured teacher observation since he believed that the best way to identify an able child is by studying the work they do and this would be unproblematic for teachers. He did not favour IQ tests on the grounds that they do not reveal all types of ability. In his practical resource materials for teachers, George provided a useful table that assesses methods for an identification procedure (George, 1992, p. 7, Figure 2.1). Teare (1997) expanded on this, and assessed several methods of identification. Drawing on other literature and from personal experience as a teacher and founder of NACE, Teare believed that general checklists are useful but they must not create stereotypes – subject checklists are more practical.

Nomination from several groups of people, including teachers, parents and students themselves, was identified in the literature as an important element in the identification procedure (George, 1992; Teare, 1997). Teare

gave practical advice and explained that nominations from teachers can be done through a referral sheet; parental nomination can be sought through written communication and peer nomination can be obtained through a pupil questionnaire. Freeman (1998) drew upon Treffinger and Feldhusen's (1996) work which suggested that pupils should play a part in identifying themselves so that they come to understand their own potential. George (1995) noted that self-nomination should be a continuous process, comprising a flexible, open-ended talent profile that is regularly updated by pupils. Only one study recommended that pupils' past educational history should be included in the identification procedure (Welding, 1998). This highlights the fact that present attainment is not necessarily indicative of ability.

4.4 School level

Several articles recommended that schools should construct an identification framework that they can add to and develop when circumstances change. Bore (2003) believed that educators should use the key features on the framework to create a list of key questions to support self-review and monitoring of identification strategies. The framework needs to be relative to each school, rather than some national IQ norm (Bore, 2003). Eyre (1997a) explained that it is very important that identification systems should fit in to existing structures and systems so identification can be an integral part of the school's activities, since only then does it have an impact on classroom practice. The most recent research carried out on gifted and talented strands within schools, illustrated that all but one of the 14 schools in the sample maintained a central register of gifted and talented pupils (Pocklington et al., 2002). Schools differed in opinion as to whether this list was made available to pupils. Increasingly schools are becoming more open and in one school, the coordinator explained this as follows.

Pupils are informed as a group and on a year basis. It is explained to them why they are on the register, and they are encouraged to make the most of the extra opportunities that will be coming their way.
(Pocklington et al., 2002, p. 24)

However, there was a failure amongst some key authors to refer to identification procedures in their writing. For example, Freeman (2000) mentioned no specific criteria for identification in her article that describes developing a school policy for gifted and talented pupils. In Feldhusen's (1998) description of programmes and services at elementary level in the USA, the subject of identification is bypassed.

Another key issue that emerged from the literature was the need for training in identification techniques and methods (Eyre, 1997a; Hamilton, 1999). Head teachers and senior managers should recognise that teachers may need support and training on identification methods (Eyre, 1997a). This gives a reminder that provision for gifted and talented pupils must be a whole-school issue and acknowledged as such by senior managers. Training need was also identified in Hamilton's research in four secondary schools in Scotland where she investigated the extent of available provision for able pupils (Hamilton, 1999). While teachers felt confident about teacher judgment as part of the identification procedure, there was evidence that they used different methods, which led to problems of decategorisation.

In comparison, a study by Welding (1998) in one comprehensive school in the UK, showed that teachers were not confident about identification. When asked to define high ability, definitions differed between departments suggesting the need for different definitions of able children for each subject (Welding, 1998). Welding compares Tilsley's (1995) two alternative models of educational practice, the Definition-Identification-Provision (DIP) model and the Provision-Evaluation-Provision model (PEP).

On the basis of her research, Welding preferred the PEP model, requiring each department to produce a subject-specific checklist for identification purposes. In order to consider levels of ability, educators would use several methodologies. Each gifted child should have his/her own file with the collated results which the coordinator could circulate to teachers to aid more effective planning (Welding, 1998).

4.5 National initiatives and identification procedures

The current DfES concept of 'giftedness' incorporates a wide range of meanings. The gifted and talented strand of EiC aims to help identify a large cohort of pupils and, thus, procedures for national initiatives have had to reflect this. With regard to identification of able children for national policy, Eyre believed that:

national policy should balance test data with systematic opportunities for the recognition of ability in class – not just the teacher's hunch but rigorous qualitative data.

(Eyre, 2000, p. 19)

4.5.1 Excellence in Cities (EiC)

Schools are still not confident in applying identification procedures to the gifted and talented strand of EiC (Bentley, 2003; Pocklington *et al.*, 2002). Bentley believed that identification impacts at three levels, each of which must be identified by each school if provision is to be effective:

- individual pupil level – it is important that all gifts and abilities are recognised

- teacher level – there needs to be appropriate planning and provision

- whole-school level – there needs to be a clear menu of identification procedures.

Bentley believed it is 'worth putting time and effort into developing a thoughtfully constructed and well-managed framework' within the EiC, gifted and talented programme (Bentley, 2003, p. 14). Another

issue with identification procedures within the gifted and talented strand is that educators are still trying to achieve a balance between identifying gifted and talented pupils as a very different cohort, while treating them just like all the other pupils (Jennings and Dunne, 2003). Thus, the literature implies that identification procedures at all three levels still needed to be improved.

4.5.2 World-class tests

The World Class Arena is a British government initiative to assess and develop the skills of gifted and talented children. The research of Richardson *et al.* (2002) on this initiative involved interviewing and observing 24 gifted and talented pupils from seven secondary and seven primary schools in the south of England. They asked the children for their views on the computer-based tests used to identify gifted and talented students. These tests were for nine to 13-year-olds and focussed on problem-solving. The study provided evidence that a computer environment is an effective means of assessing the problem solving skills of highly able children and identifying these children to teachers (Richardson *et al.*, 2002).

4.5.3 Sutton Trust-funded summer schools

In a report on the DfEE/Sutton Trust-funded pilot summer schools for gifted and talented students 1999, Pye *et al.* (2000) recognised several issues concerning identification. The study involved reviewing documentation, conducting case studies of good practice in five schemes, visits to the other 27 pilot schools and monitoring summer school student attitudes. The study found that the project coordinators were generally impressed by the calibre of students, but there was concern that non-host schools had selected students who did not meet the criteria. This was largely because of the complex selection procedures and short time-scale for selecting and confirming participation of pupils (Pye *et al.*, 2000). The research illustrated that identification for

enrichment activities such as summer schools needs to be to be well planned and thought out (Pye *et al.*, 2000).

4.5.4 The National Academy for Gifted and Talented Youth (NAGTY)

As Director for the National Academy, Eyre set down clearly the aims and objectives of the National Academy (Eyre, 2002). In order to be identified and participate in this initiative, students were invited to apply for membership with a portfolio of evidence of their ability. The aim was to find the top five per cent of pupils nationally in terms of academic ability within the 11-16 age range. The talent search recognised that no perfect method exists for identifying the top five per cent, however, they recognised that they must establish some defendable criteria for membership. Eyre explained that the National Academy will also set up an 'Expert Team' in 2002/2003 on assessment to explore ways in which the talent search can be improved. Once registered, pupils can stay members of the National Academy throughout their school career. This article does not explain how talented pupils will be identified and any problems which may arise (Eyre, 2002).

4.6 Identification in the USA

In the USA, Renzulli specified that enrichment clusters are an excellent means of identifying students. As Director of the NRC/GT, Renzulli stressed the importance of using enrichment clusters for performance-based identification. Although his suggestions are based on no specific research, he used an example of a specific enrichment cluster to illustrate particular points. The enrichment cluster approach was designed to identify those gifted pupils who may not have been identified through tests. For example, a teacher identified three students who had exceptional interest and talent in various aspects of video production. These students would not have been identified through traditional techniques for special services in a programme for gifted and talented. By working with the school's enrichment specialist, these individuals went on to take part in after-school internships (Renzulli, 2000).

4.7 Summary

The literature shows that identification is beginning to be recognised as a key issue in provision for able children. It is important that multiple criteria are used and that teachers do not become too reliant on one method. It is worth putting time and effort in at the beginning to develop identification procedures, and once identification procedures have taken place, they must be recognised and nurtured if they are to be effective.

5 Differentiation

5.1 Introduction

Differentiation is an increasingly used teaching approach as schools become more inclusive and orientated towards individual need and, therefore, applies to the education of able pupils, both in the UK and the USA. The literature revealed that differentiation is interpreted quite differently in the two countries and even within countries. The range of definitions is considerable. In the UK, the definition is broad and the approach is defined in the gifted and talented literature as 'recognizing individual differences and trying to find institutional strategies which take account of them' (Eyre, 1997a, p. 38). It mainly refers to differentiating the curriculum within mixed-ability classrooms (Montgomery, 1996). In the USA, although differentiation can occur in the ordinary classroom, some studies described differentiation in terms of full-time, self-contained special classes for gifted children (Feldhusen and Sayler, 1990; Moon *et al.*, 2002). This chapter aims to explore the literature on the use of differentiation in the teaching of able pupils and the different methods that can be used.

The general context in which gifted and talented pupils are educated is, of course, important. In the UK, the context is shaped by the National Curriculum. One study sought practitioners' opinions on the opportunities afforded by the National Curriculum in one EiC school (Kerry and Kerry, 2000). Both teachers and coordinators felt that there were several disadvantages of the National Curriculum since it lacked emphasis on creative thought, was prescriptive and restrictive, and was obsessed with content and exams. It should be pointed out that this study drew upon teachers' perceptions, rather than rigorous analysis of the curriculum.

There has been little empirical research in the UK on differentiation for gifted children. This is something that needs to be addressed, because gifted children spend most of their time within the ordinary classroom. Much of the literature on differentiation from the UK represents influential authors' opinions. It has been widely acknowledged that a differentiated curriculum is important to meet individual needs (Eyre, 1997a and c; Freeman, 1991, 1998; George, 1992, 1995). George believes that differentiation 'becomes the lynchpin of the entitlement curriculum' because differentiation is beneficial to both gifted pupils and disaffected pupils (George, 1995, p. 67). The literature identifies aspects of differentiation – curriculum differentiation as well as more practical measures such as grouping and flexible teaching methods.

5.2 Curriculum differentiation

The most recent research on differentiation and gifted education is the study of the gifted and talented strand in EiC (Pocklington *et al.*, 2002). The research identified four main forms of differentiation in the schools visited: 'by task; by outcome; by the resources employed; by delivery' (Pocklington *et al*., p. 32). Key authors have discussed these methods previously and they have commented that differentiation is difficult to review since it is often dependent on individual pupils' needs. However, the lack of illumination is unhelpful to the development of practice.

The first method of differentiation identified by Pocklington *et al.* (2002) was 'differentiation by task'. Within the fourteen schools in an EiC study, there was evidence that careful thinking and planning by teachers enabled extension material to be embedded within

schemes of work and lesson plans. Extension may mean that pupils progress through the scheme of work at a faster pace, that they are presented with more challenging content, or that they are given the opportunity to decide what they are going to study. One of the gifted and talented coordinators commented, 'Teachers are coming round to the realisation that extension doesn't mean more of the same thing' (Pocklington *et al*., 2002, p. 33). Not all schools believed that EiC had opened up the way for a differentiated curriculum. One headteacher interviewed, commented, 'It [EiC] has raised people's awareness but not really made a great difference in the classroom' (Pocklington *et al*., 2002, p. 33).

'Differentiation by outcome' is where all pupils take part in the same tasks, yet the teacher expects more sophisticated outputs from gifted and talented pupils (Pocklington *et al*., 2002). Montgomery (1996) felt that this method was regarded as too simplistic and that it was not beneficial to gifted pupils. She felt that this may lead to underfunctioning of able pupils since it does not stimulate pupils enough. The most recent research in EiC schools indicated that differentiation by outcome was, in fact, very common within schools (Pocklington et al., 2002). The method was viewed positively since it enabled teachers to develop students' thinking and reasoning skills, which were evident in the work they produced.

The third and fourth methods, 'differentiation by the resources employed' and 'differentiation by delivery', were clearly evident in the EiC schools studied by Pocklington *et al*. (2002). Teachers had begun to use learning materials with more sophisticated language and greater challenge, as well as ICT resources such as graphics packages and CD-ROMs designed to enhance and extend coursework (Pocklington *et al*., 2002). Several authors have acknowledged that teachers need to have training on how to differentiate the curriculum for gifted and talented pupils, the sort of materials to purchase and how to deliver them most effectively (Freeman, 2000; Teare, 1997).

5.3 Flexibility

Within the literature, one of the most important characteristics of teaching gifted and talented pupils was a flexible teaching style, so that all pupils can benefit within the classroom (Freeman *et al*., 1995; Freeman, 2000; Montgomery, 1996). This is particularly important in mixed-ability classrooms. Flexibility within the classroom, with the use of higher-order thinking skills for able pupils and communication with all, will enhance classroom practice. It is also important that gifted children are motivated through the use of exciting lessons which are not simply 'slow and leisurely' (Eyre, 1997c, p. 61).

5.4 Grouping

Grouping within the classroom is something that is discussed within the literature, yet little empirical research has been carried out on optimal grouping. There is no agreement as to whether gifted and talented pupils should remain in mixed-ability groups, be put into sets or be put into special classes, comprising wholly of gifted pupils. In the past, influential authors have simply described these different methods and stated the advantages and disadvantages without having hard evidence from research. Reviewing the literature on streaming, setting and grouping by ability, Sukhnanden with Lee (1998) found that the methods have no differential effect on pupil achievement, at primary or secondary level, within different subject areas or at any level of pupil ability (Sukhnandan with Lee, 1998).

5.4.1 Mixed-ability classes

Eyre (1997a) favoured a mix of opportunities for gifted children to work in various ways. She favoured the mixed-ability classroom since, she argued, this set up allows gifted pupils to move onto extension activities as well as allowing a social mix with other children. Freeman *et al*. (1995) felt that mixed-ability classes are appropriate as long as the teaching is flexible. Other authors believe that teachers find mixed-ability classrooms difficult to deal with and

consequently able pupils may not be stretched (Teare, 1997). One small study in the USA involved a researcher going to two schools for one year to investigate the role educators of the gifted can play to improve the education of the gifted. Of the 26 gifted students surveyed and eight gifted students interviewed, most of the students were opposed to the idea of homogenous groups comprising only gifted pupils, since they did not want a competitive atmosphere in the classroom and had friends in other classes. One of the teachers interviewed believed that it was important for gifted students to mix with others: 'they have to function and socialize with … everyone' (Schack, 1996, p. 192).

5.4.2   Setting

Setting has been controversially discussed within the literature. From her own research in the UK, Eyre discovered that setting children was appropriate since it entitled gifted pupils to a real challenge by being surrounded by like-minded children (Eyre, 1997a). Teare (1997) pointed out that although setting can make teachers feel more secure, pupils may end up in the wrong set if allocation methods are too rigid. More recently, educators have emphasised the importance of specially created top sets of gifted and talented pupils (Teare, 1997; Pocklington *et al.*, 2002). Recent research in schools within EiC areas has showed that these gifted and talented sets are becoming more common, allowing more individual attention and a faster pace (Pocklington *et al.*, 2002). Setting or extraction classes are often favoured for specific subjects such as mathematics or foreign languages (Sizmur, 1991; Pocklington *et al.*, 2002).

5.5   Gifted pupils' independence

The literature also raised the importance of allowing gifted pupils to become autonomous learners who are able to direct their own learning (Feldhusen, 1995; Freeman, 2000; Montgomery, 1996; Pocklington *et al.*, 2002). It is important that gifted pupils are able to work independently

on investigative or problem solving work that challenges them and allows them to think creatively. The work rate of able pupils was also discussed within the literature and raised conflicting views. Freeman (2000) believed that practitioners should allow able pupils to work at their own rate, whereas Eyre (1997a) argued that this is not effective with some gifted pupils who become too concerned about one issue and do not move on to the next topic.

5.6   Differentiation in the USA

The literature revealed that differentiation within the USA is common and several recent studies have been carried out, usually within individual schools or schools within one state. The use of the term 'differentiation' varied within US literature and some researchers referred to it as differences within the curriculum, whereas others regarded it as self-contained classrooms which provide a challenging learning experience (Feldhusen and Sayler, 1990; Moon *et al.*, 2002; Sheehan, 2000; Tomlinson, 1995; Westberg *et al.*, 1993). The literature also revealed that practice and policy for gifted and talented children differed enormously between regions and states.

In the early 1990s, the Classrooms Practices Observational study, conducted by NRC/GT revealed that little differentiation was used in instructional and curricular practices, grouping arrangements and verbal interactions for gifted and talented children (Westberg *et al.*, 1993). Systematic observations in 46 schools revealed that for the majority of the time, gifted and talented participants worked with the rest of the pupils and a differentiated curriculum was scarce.

Some studies have investigated schools that have 'special classes', where gifted and talented children are taken out of ordinary lessons and learn in groups of pupils of similar ability. One study suggested that these classes allowed instruction which matched pupils' achievement level and went at a faster pace than mainstream classes (Feldhusen and

Sayler, 1990). The self-contained classes allowed the pupils to be challenged and to interact with other gifted children. The teachers felt that gifted pupils could still interact with other pupils in subjects such as art, music and PE as these did not have special classes. Some teachers disagreed with the principle of special classes on the grounds that by withdrawing gifted children from the ordinary classroom, role models to motivate and stimulate children of average and low ability were taken away. The authors agreed that further research needs to be carried out on the effect of special classes on the socio-emotional development of gifted children.

Another study recommended discrete classes where there were sufficient numbers of gifted pupils (Moon *et al.*, 2002). The research revealed that gifted and talented programmes can have different effects on individuals and future evaluation studies should investigate this. For example, the emotional effects on some gifted pupils were negative since they missed friends, found the special classes hard work and no longer felt the brightest in the class. Some pupils felt the large amounts of homework and commuting to the classes had a damaging effect on their life outside school. These are all aspects which need to be carefully considered when deciding upon special classes or, indeed, setting for particular subjects. In an Action Research study of an advanced history class, Sheehan (2000) found that when gifted pupils worked together, they were able to reach a higher level of understanding and performance, than would have been possible in a mixed-ability class.

Overall, the literature from the USA revealed that while differentiation was becoming the norm in many classrooms, practice in some schools needed to be developed further. Special classes for gifted pupils were becoming popular; nevertheless further research needs to be carried out to investigate the socio-emotional implications of this approach.

5.7   Summary

The literature revealed that there is a great deal of uncertainty on how best to achieve differentiation which meets the needs of gifted pupils, especially with the differences amongst educators in the UK and those in the USA. More research needs to be carried out on the different methods of differentiation and different applications within different subjects. Although national initiatives such as EiC and the National Academy are beginning to coordinate appropriate differentiation methods, it is thought that these initiatives need to place more emphasis on teaching within the classroom rather than enrichment activities. In order for practitioners to provide appropriate consistent pedagogy, more empirical research needs to be carried out to discover the practicalities of able pupils' needs. For this to be a success, views from teachers and pupils should be considered.

6 Enrichment

6.1 The need for an enriched curriculum

There are several ways in which the term enrichment is applied, ranging from opportunities outside school hours, to those within the classroom, which allow pupils to explore a subject in greater depth. Within the literature, it was found that enrichment is an important part of able children's education both in the UK and the USA. Nevertheless, Montgomery (2001) explained that there was little evidence to suggest that 'bolt on' enrichment activities such as masterclasses and summer schools are effective. Within the UK, although Freeman (1991) discussed the concept of enrichment at the beginning of the 1990s, it is not until the mid-1990s that this teaching approach is discussed in greater detail within the literature. Studies in the USA also began to appear in the mid-1990s. This chapter aims to discuss the different concepts of enrichment found within the literature.

Freeman (1991) upheld that enrichment should be available to all. Nevertheless:

> *...for the gifted it is a particularly important aspect of their developing mental life. Enrichment is the vital stuff of a truly enhancing education for those who have the capacity to grasp the gist of the subject they are learning, relate it to other areas, and play with ideas in the processes of creativity.*
>
> (Freeman, 1991, p. 215)

Freeman explained that allowing able children to work intensively at their own pace may require the teachers to supervise more closely. Her longitudinal study of 70 pupils, aged between five and 14, showed that out-of-school enrichment activities were also very important since they provided opportunities for gifted children to be with like-minded children. She described them as:

> *an enriching opportunity for the gifted to be with other people like themselves, so that they can relax and drop the energy-consuming defences which they normally use for support.*
>
> (Freeman, 1991, p. 215)

Freeman acknowledged the problems associated with enriched learning as well as the benefits. First, is the problem of increased disparity between able children and the rest of the class. Freeman suggested that this could be overcome by arranging outside-school meetings for gifted children. Second, she acknowledged that although it is difficult to ascertain whether enrichment enhances academic improvement, it is nevertheless clear that it gives an opportunity for social learning and improves interpersonal relationships.

George (1992) stressed the importance of an enriched curriculum but also noted that there were various interpretations of enrichment. He believed that it is important to consider enrichment and differentiation together, since enrichment leads to differentiated work. George stressed that enrichment is more than just providing pupils with more demanding materials since it requires teachers to be both flexible and sensitive in their judgement of an individual's needs. He also acknowledged that 'enrichment' and 'extension' are often used interchangeably, though they should not be regarded as the same thing. Enrichment allows pupils' horizons and experiences to broaden whereas extension allows them to move on to higher-order skills and concepts.

In an update to his 1992 work, George (1995) explained that, up until recently, enrichment of the curriculum had involved teaching children in mixed ability classrooms. From the author's experience, he believed that this was

declining and it was more usual to find setting in comprehensive schools. He maintained that effective enrichment should be well planned and designed and should consider the following objectives:

- content beyond National Curriculum
- exposure to a variety of subjects
- student-selected content
- high content complexity
- maximum achievement in basic skills
- creative thinking and problem solving
- motivation.

(George, 1995, p. 51)

The reader is reminded that the National Curriculum should be enriched by additional subjects, cross-curricular themes, dimensions and skills as well as extra-curricular activities.

Montgomery (1996) argued that all means of adjustment for the able are forms of enrichment, pointing out that in the last 25 years, enrichment has become the most widely developed strategy in Britain for aiding able children, with the aim of extending their learning beyond the National Curriculum. Montgomery pointed out that progressive educators regard enrichment as a necessary part of any child's education, not only that of the able.

Recently, it has been acknowledged that enrichment activities as part of gifted and talented provision have dominated provision, and educators are beginning to realise that more emphasis needs to be placed on enrichment within the classroom (Eyre, 2002; Teare, 1997). This has been taken into consideration with the formation of the National Academy since the most important aspect of provision relates to day-to-day classroom activity (Eyre, 2002). Montgomery (1996) also believed that enrichment must not only comprise bolt-on activities, but must form part of the mainstream curriculum. From past experiences, Teare (1997) also felt that enrichment activities have a role, but provision should be mainly based in the

normal classroom. Although influential authors have upheld these views, enrichment in the form of out-of-school activities have been, and still are, very popular in the UK. These occur as one-off events, on a national or local scale, or as daily activities that occur in schools, each of which are described below.

6.2 National and local enrichment activities

6.2.1 Excellence in Cities (EiC)

Enrichment is an important part of the gifted and talented strand of EiC. The most recent research concluded that enrichment activities were one of the most common developments. These activities were designed to broaden pupils' experiences, either at lunch time or after school, through a regular activity or a one-off event such as a summer school. These activities were:

...proving very popular with pupils, not least because of the generally more relaxed atmosphere which was seen to prevail, combined with the obvious dedication of the members of staff involved.

(Pocklington and Kendall, 2002, p. 11)

Ofsted (2001a) found that after the first year of the EiC initiative most schools with gifted and talented funding '…were beginning to use it effectively to extend the normal curriculum through supplementary activities and resources' (Ofsted, 2001a, p. 69). However, in all schools, the changes brought in by the initiative were restricted to only a few subjects in the mainstream classroom.

Ofsted's (2001b) evaluation of EiC and other grant-funded projects found that the main benefit of the programmes was the increased level of high quality, additional out-of-school activities. They found pupils had responded well to these activities since they had a positive impact on motivation and self-esteem, yet the long-term benefits were still uncertain since evidence was limited on increasing attainment levels. However, several issues arose with the organisation of the summer schools. In some cases, organisation

was poor due to short planning time and lack of communication between LEAs and schools, for example, about identification or monitoring. This led to discrepancies in the procedures relating to, for example, identification or monitoring. Another main finding from Ofsted (2001b) was that provision for gifted and talented pupils still needs to be increased within the classroom and perhaps too much emphasis has been placed on enrichment.

In one specific gifted and talented summer school in Staffordshire, respondents from a students' post-course questionnaire considered the summer school a success. In this study, several recommendations were also made for future gifted and talented summer schools (Towne and Branson, 2001). The authors recommended that organisers take a themed approach that would capture pupils' imagination. In this instance, they took 'Media Matters', involving communication in the twenty-first century. The authors also recommended that sponsorship be sought to strengthen links with the wider community. Several of these recommendations corroborate those of Pye *et al*. (2000) who evaluated the DFEE/Sutton Trust-funded summer schools.

6.2.2 The National Academy for Gifted and Talented Youth (NAGTY)

Eyre's (2002) outline of the National Academy focused on enrichment activities outside classroom hours, although she explicitly stated that enrichment within the classroom is the most important aspect of the National Academy. She described the National Academy's programmes for students, which include an outreach programme involving Saturday masterclasses, university-based conferences and twilight taster events. These would be regular events provided by the University of Warwick and the National Academys partner universities. Eyre admitted that:

internationally very little work has been undertaken to evaluate the effectiveness of outreach provision for gifted and talented students or to establish criteria

for designing out-of-hours learning opportunities.

(Eyre, 2002, pp.76–7)

Online learning opportunities also form an important part of the National Academy's enrichment programme since they offer an opportunity for innovation and development. Members of the National Academy are able to access online learning in their own time. They are also supported by well-trained, online, postgraduate members. Schools can incorporate this resource into their curriculum delivery. Summer schools are the third type of enrichment activity offered by the National Academy. Eyre comments that evaluations from students showed that overall the one hundred pupils who took part in the 2002, three-week summer school at the University of Warwick, valued the event. The 2003 summer schools involved 900 students at five different locations.

6.2.3 DFEE/Sutton Trust-funded pilot summer schools (1999)

Pye *et al*. (2000) evaluated the DFEE/Sutton Trust-funded pilot summer schools for gifted and talented students in 1999. Each of the 32 summer schools, had 30 to 60 gifted and talented pupils from years 6, 7 and 8, who were generally in the top five per cent of their age group or gifted in a particular subject. A rigorous methodology was used to evaluate the summer schools which included reviewing documentation, case studies of good practice in five schools, visits to the other 27 schools as well as monitoring student attitudes. Visits comprised interviews with project leaders, staff and pupils.

The evaluation indicated that students enjoyed working with like-minded peers and staff in a supportive atmosphere, different from that of school. It was found that students' attitudes to learning became more positive and they were able to produce high quality work. Students felt they had gained academically and socially. Schemes raised self-confidence and self-esteem and increased interpersonal skills of students. Some students were concerned that the scheme focus was too narrow.

The research led to several recommendations for schools and LEAs to consider when developing summer schools (see Pye *et al.*, 2000, pp. 5–6). These suggestions included organisation around a central theme or subject and flexibility within scheme plans. It is the coordinator's responsibility to 'ensure linkage between summer schools for gifted and talented students and other summer school provision' (Pye *et al.*, p. 5). Coordinators should also 'make explicit the complementarity and continuity of summer school activity and normal term-time work' (Pye *et al.*, p. 5). Thus, students were encouraged to use the skills developed on summer schools in their work in the classroom. Overall, the research illustrated that enrichment in the form of summer schools was perceived to be beneficial to the majority of students.

6.2.4 Enrichment activities on a local level

Examining provision of very able children at central government, LEA and school level, in one particular LEA, by using surveys and interviews, Bonshek and Walters (1998) found that primary schools had made little use of local authority resources, residential days and enrichment days. The authors were surprised that schools with whole-school policies for gifted pupils were not involved with local authority enrichment days and, indeed, raised the question as to the effectiveness of the LEA in alerting schools to such activities. Nevertheless, with the introduction of the gifted and talented strand, one-off learning activities have become very popular at partnership level. Schools came together and shared provision such as summer schools, theme-based days or events and masterclasses (Pocklington *et al.*, 2002).

6.2.5 Daily enrichment activities

Enrichment within the classroom has not attracted attention in the literature, up until very recently. Previously, schools without a policy for able children did not have special enrichment provision in place. Eyre (1997b) explained that extension and enrichment are

key activities within the classroom since they encourage breadth and greater depth within a subject. She believed that teachers need to encourage able pupils to 'think deeply for themselves' (Eyre, 1997b, p. 18). Teachers who do this well constantly ask pupils for their views and ideas. There are very few studies from the end of the 1990s that describe schools with enrichment provision within the classroom. Naisbett (1997) carried out some research in her own 11-16 comprehensive in order to draw up a school policy for more able pupils. This action research project involved interviewing heads of faculty and heads of departments. She found that specific enrichment material must be incorporated into all schemes of work.

One research project showed that schools also provide daily enrichment activities such as 'problem solving clubs' and a 'challenge group', which the pupils enjoyed (Bonshek and Walters, 1998). The latter was run by the SENCO and allowed pupils to take part in individual or group projects, national competitions and independent self-study skills. Overall, the research showed that gifted and talented coordinators need to be given more time to produce enrichment materials and activities.

6.3 Enrichment activities within the USA

6.3.1 Enrichment clusters

The literature revealed that more studies in the USA than the UK discuss the importance of enrichment, both inside and outside the classroom. The most influential writer on the use of enrichment in the USA is Renzulli (1997, 2000). In her review of current international research, Freeman (1998) discusses the schoolwide enrichment model, used for twenty years in Connecticut by its designer Renzulli and his colleagues. It avoids the label of gifted and its underlying philosophy is to use provision geared to the children's own interests.

Authentic enrichment clusters should involve non-graded students coming together, ideally half a day a week, to work cooperatively on something that interests them. Able children should focus on a problem they want to pursue since it allows them to have ownership of the project. The cluster focuses students' attention on authentic learning, applied to real-life problems. It is similar to learning in real-life situations such as research laboratories, business offices or film studios. Some individuals have criticised the concept of clusters, explaining that they are 'nothing more than "fun and games"' and they are 'soft on content' (Renzulli, 1997, p. 7). The author defends this, since each teacher organises a cluster around 'authentic and rigorous content' (Renzulli, 1997, p. 7). He believed that authentic learning is a fun part of school, which allows for 'intelligent, creative, and effective learning' (Renzulli, 1997, p. 12).

6.3.2   Enrichment programme models

Feldhusen (1998) outlined several of the systematic enrichment programme models that have been developed in the USA over the years, which include the enrichment triad/revolving door model advanced by Renzulli and Reis (1986), the individualized program planning model (IPPM) of Treffinger (1986) and the Purdue three-stage model advocated by Feldhusen and Kollof (1979, 1986). Feldhusen suggested that:

> *the Renzulli model is possibly the most comprehensive in its extensive treatment of identification, administration, staff training, and program delivery structure.*
>
> (Feldhusen, 1998)

Feldhusen (1998) upheld that there were three types of programme experience:

- Type I enrichment involves experiences which allow children to have new exploratory experiences. These activities include field trips, speakers and museum programmes.

- Type II enrichment involves activities designed to develop cognitive and affective processes.

- Type III enrichment comprises individual or small-group investigations of real problems.

He listed appropriate activities, and, although he does not specifically call them enrichment activities, they could be classed as these. They include seminars, cultural experiences such as museums, concerts, plays and art exhibits, and foreign language learning.

The US literature revealed that several studies have been carried out to investigate enrichment activities, which describe these activities positively. One distinct difference is that in the US literature there is much less concern on the disadvantageous effects of enrichment activities.

6.4   Summary

The literature highlights that it is important that the curriculum is enriched in order to allow a pupil to explore a subject in greater depth. It is also vital that gifted pupils take part in enrichment opportunities out-of-school hours to work and interact with like-minded peers. Within the UK, up until recently, the gifted and talented strand of EiC has focused on one-off enrichment activities, and it is now time to develop an enriched curriculum within the classroom.

7 Acceleration

7.1 Introduction

Acceleration appears to be one of the most controversial issues within the gifted and talented literature. Acceleration has been studied extensively yet there remains a huge debate within the literature about whether it is beneficial or potentially harmful for gifted pupils (Freeman, 1991, 1998; Freeman *et al.*, 1995; George, 1992, 1995; Montgomery, 1996, 2001). George defined acceleration as 'any teaching strategy that results in advanced placement beyond a child's chronological age' (George, 1995, p. 59), which is largely the view held in the UK. In the UK, acceleration in the form of acceleration classes or express streams is becoming more popular in subjects such as mathematics and modern foreign languages. In the USA and on the continent, acceleration is largely thought of in the sense of a child advancing an academic year at school or 'grade-skipping' (Eyre, 1997a, 2000; Freeman, 1991, 1998, 2000; Montgomery, 1996, 2001).

Some key authors revealed that they felt acceleration incorporated several other factors which included early entry, individualised provision, vertical grouping, classes with a wide age range, out-of-school courses, compacting studies, self-organised study and mentoring (George, 1992; Montgomery, 1996). Perhaps there is so much controversy surrounding the subject of acceleration since individuals interpret it differently. In this chapter the aim is to explore these differences in the literature and reveal the advantages and disadvantages of acceleration.

In her examination of current international research, Freeman (1998) stated that in the UK highly selective schools for the academically gifted, which are now almost all private schools, are another means of accelerating the gifted. Most of these schools were originally direct grant schools, some of

which became specialists for the intellectually gifted in terms of academic success and Oxbridge entrance. These schools often teach whole classes a year ahead of the normal age-related programmes of study.

Within EiC, there are now two strands, Beacon and Specialist, which incorporate schools known for good practice overall or in one particular area. A small percentage of their intake is related to pupils' ability or interests, and so they are possibly more likely to attract gifted and talented pupils. Magnet schools aim to attract, rather than select, talented pupils, in subjects such as music. These schools can work like specialist schools, entitling children to work at their own speed and accelerating the children in an excepted school environment. Freeman (1998) reports that no research has been done on these 'unofficial' highly selective schools or magnet schools and the search for this review revealed that nothing has been written more recently. Research has been carried out on Beacon Schools (for example Rudd *et al.*, 2002) but nothing has been written from a gifted and talented perspective within these schools. From the evaluation of Beacon schools, it was revealed that of the 531 Beacon schools in existence, 79 (or 15 per cent), identified 'Gifted and Talented' as an area of good practice. Perhaps further specific research on this needs to be carried out?

7.2 Advantages of acceleration

Several influential writers agree that acceleration is the most cost-effective and easiest teaching method for able pupils, but there are several discrepancies in the use of the term. First, the literature revealed that there were several positive aspects of acceleration found within the UK and USA literature. George (1992) favoured accelerated learning within the classroom,

rather than acceleration in the form of skipping a year, because it allows children to be challenged and should improve motivation and, thus, lack of effort or underachievement. Compacting the curriculum within the classroom allows children to work at their own pace rather than do repetitive tasks.

There have been very few studies in the UK that explore the practice of acceleration. However, one small-scale UK study followed three able pupils who had been accelerated in mathematics within a small, suburban junior school (Sizmur, 1991). Interviews revealed that although two children had a low sociometric status, their needs were being met. One participant retained her own age friendship group and met with these at break, whereas the other had formed a small, but close, circle of friends within class. The accelerated pupils saw class time as the time to work and they both felt accelerated learning was an improvement. The author acknowledged his limitations with the small scale of the project and recommended that the same effects of acceleration could be achieved through vertical enrichment. One of the children suggested that teachers should 'weed out all except a core of essential activities, which could be completed in a small fraction of the time normally expected' (Sizmur, 1991, p. 3). This study illustrated that acceleration in the UK usually only occurs in specific subjects.

The most recent research that explores the practice of accelerated learning is a report on the impact of the gifted and talented strand within the EiC initiative (Pocklington *et al.*, 2002). Interviews with key respondents showed that acceleration classes or express streams were a feature in well over half the schools. This was evident in several subjects and most common in mathematics and science. As the schools were fairly representative of EiC schools, it may be surmised that the practice is fairly common in EiC schools. Gifted and talented pupils dominated these classes which allowed them to cover the same study programme as other pupils but in a shorter time period. This often resulted in early entry GCSE and,

subsequently, an early start to AS courses. Other research has revealed that acceleration is favoured with specific subjects such as mathematics, foreign languages (Sizmur, 1991; Montgomery, 1996), music, ballet or sport (Montgomery, 2001). Montgomery (2001) felt that acceleration, in the form of segregation, worked for talented pupils in areas such as music, ballet and sport because they could offer special provision for the more able.

Pocklington and Kendall (2002) also investigated gifted and talented pupils' views on the gifted and talented strand of EiC. The study revealed early entry GCSE was becoming much more prevalent. Pupils were generally positive about this procedure and said that it increased their self-confidence and self-esteem. However, some pupils felt that they would feel rushed:

> I wouldn't want to cram the syllabus of any subject into a smaller unit than two years. I would rather take a measured approach over two years and achieve a good grade. I don't like to rush things!
> (Pocklington and Kendall, 2002, p. 10)

Overall, in the UK the literature revealed that acceleration can lead to a positive attitude to learning, particularly in specific subjects such as mathematics, modern foreign languages and in sport.

7.3 Acceleration within the USA

The literature revealed that at the beginning of the 1990s there was a clear divide amongst educators in the UK and educators in the USA as to whether acceleration was favourable. Archer (1992) believed that acceleration was most controversial in the UK, whereas internationally, acceleration was more favoured. Freeman's report on current international research on gifted pupils, revealed that:

> ...almost all the research evidence promoting the benefits of acceleration is based on studies within the American

educational system, where teaching is slower and less differentiated than that in Europe.

(Freeman, 1998, p. 38)

This illustrates that context is important since practitioners need to know what the pupils are being accelerated from and whether it is really necessary. In the UK, the National Curriculum is intended to cater for all pupils through differentiation and, thus, acceleration in the form of grade-skipping is not as common as in the USA.

Shore and Delcourt (1996) investigated effective curricular and programme practices in gifted education within the USA, including acceleration. They reviewed advice from one hundred widely available books on gifted education and came to the conclusion that research showed that acceleration is 'uniquely appropriate to gifted education' (Shore and Delcourt, 1996, p. 138). Shore and Delcourt cited previous work and explained that many forms of acceleration are widely advocated in the USA since they do not require any curriculum adaptation or differentiation (Shore *et al.*, 1991).

7.4 Concerns about acceleration within the UK

The literature revealed that there seem to be some studies which indicate that acceleration should be favoured, yet there was also literature which cautioned educators about the concept of acceleration. In the UK, several authors, who took acceleration to mean advancing an academic year early, expressed their concern that gifted pupils may not be able to cope socially and emotionally (Bonshek and Walters, 1998; George, 1992, 1995; Freeman, 1991; Hymer, 2003). Freeman (1991) was also wary of acceleration and believed it should only be for the emotionally stable child since it can disrupt a child's social development (Freeman, 1998). She concluded that the focus should not be on acceleration but, rather, the development of problem solving (see also Montgomery, 2001).

In a study on the structure of provision for very able children in one LEA, Bonshek and Walters (1998) found that 'only cursory reference has been made to acceleration in the LEA guidelines' (Bonshek and Walters, 1998, p. 25). The LEA cautioned teachers about acceleration, since they were concerned that many pupils may not be able to cope socially and emotionally. The LEA development officer considered that acceleration can only be used when a pupil expresses 'both social maturity and exceptional ability' (Bonshek and Walters, 1998, p. 26).

More recently, Hymer (2003) in an article entitled, '*Included not Isolated*' also explained that educators must think about the emotional and social influences of a student's development when considering acceleration. They must be aware of:

> [a] *child's sense of personal involvement in their schooling; changes in friendship groups; need for peer acceptance; time to play/mess around; opportunities to develop crucial trans-intellective capacities such as resilience, reflectiveness, resourcefulness, empathy and the quality of relationship with staff.*

(Hymer, 2003, p. 34)

Freeman (1998) commented that research on acceleration has not really examined the emotional effects of acceleration but, instead, has focused on achievement. Freeman upheld that more research needs to be carried out on the socio-emotional adjustment of accelerated pupils. She recommended that multiple measures of self-esteem could be used in a developmental context, including family and peers. She believed that 'behavioural observation is valuable' and ideally 'matched groups of equal ability and achievement should be compared, one staying in the normal classroom and the other accelerated' (Freeman, 1998, p. 43). She proposed that researchers should examine the emotional development of the children before and after acceleration. The studies mentioned above illustrate that since

Freeman's (1996; 1998) comments, research has begun to explore the implications of acceleration and how it can affect a child's social and emotional well-being. Nevertheless, this clearly needs investigating further on a larger scale.

Following research in Oxfordshire, Eyre revealed that caution must be taken with grade-skipping because of the socio-emotional effects. She even explained that grade skipping could be a sign of a school's failure to provide for able pupils since grade skipping occurs where differentiation is absent in classrooms (Eyre, 1997a). Montgomery (2001) also upheld that acceleration was not beneficial to able pupils. She explained that for the large numbers of more able pupils, a segregated education which used to operate in the UK for the top 20 per cent, was found to have disadvantages both socially and emotionally, and was also found to be no better an offer than a good comprehensive system. It is very unclear whether Montgomery has based this assumption on research or her own opinion. In some research, which used national value added datasets to explore whether comprehensive or selective education produced the best overall results, it was found that at GCSE level 'there was little difference between comprehensive and selective LEAS, in terms of value-added performance' (Schagen and Schagen, 2002, p. 2).

7.5 Concerns about acceleration within the USA

In the USA, although acceleration is favoured by many educators, some of them make it clear that that there are several factors to take into consideration. Shore and Delcourt (1996) were not in favour of grade-skipping as a means of acceleration since 'the process is *ad hoc*; it does not differentiate the curriculum; and it is not necessarily appropriate for all children' (p. 140).

7.6 Summary

The literature has revealed that acceleration is very controversial as a means of educating the able. In the past it appeared that acceleration was favoured more in the USA rather than the UK, but this may have been because of different teaching approaches. The most recent research in the UK on the gifted and talented strand of EiC revealed that acceleration within particular subjects is becoming more prevalent as a means of educating the gifted, so perhaps fears of the social and emotional well-being of gifted children are becoming less of a concern.

8 Monitoring and evaluation

8.1 The importance of monitoring and evaluation

Discrete monitoring and evaluation systems for reviewing pupil progress, school policies and national initiatives are scarce within the gifted and talented literature. The review revealed that influential authors have begun to recognise the importance of monitoring and evaluation, yet it is unclear what is being done about this. There were very few studies which examined the way in which monitoring and evaluation effects provision for gifted and talented pupils. Nevertheless, more recently, literature has focused on two discrete aspects; monitoring pupil progress and monitoring and evaluating national initiatives such as EiC, summer schools and the National Academy for Gifted and Talented Youth (Eyre, 2002; Ofsted, 2001b; Pocklington *et al*., 2002; Pye *et al*., 2000). Within the USA, studies investigating monitoring and evaluation were very scarce and this is clearly something that needs to be addressed. This chapter explores monitoring and evaluation at three levels: school level, LEA level and national level. Key factors which lead to a successful monitoring and evaluation programme are described.

8.2 The need for monitoring and evaluation at a school level

In the past, experts in the field of gifted and talented education have expressed the need for a monitoring and evaluation programme within schools and at a national level (Eyre, 1997a and c; Freeman, 1998; George, 1992, 1995; Teare, 1997). Following in-service courses to teachers that George (1995) presented, teachers commented that an assessment system should be put in place to reduce underachievement. George also recommended that an evaluation of the curriculum should be made to assess its appropriateness for gifted and talented

pupils. Eyre (1997c) also believed it was important that pupils monitor their own strengths and weaknesses and need 'clear assessment of their abilities' (Eyre, 1997c, p. 63). Teachers should set aside time to talk to gifted pupils about their work and their progress, because through appropriate discussion and questioning, gifted children will be pushed towards the next conceptual level (Eyre, 1997c). With regard to assessing gifted children's ability, Eyre explained that simple assessments only show a child's understanding of the National Curriculum content, and therefore assessment needs to be at a more complex level. Scaled or tiered assessments allow pupils to demonstrate their level of ability. Several prominent authors believed that the role of the coordinator is crucial in overseeing the monitoring and evaluation of a gifted scheme and pupil progress (Eyre, 1997a; Freeman, 1998; George, 1992; Teare, 1997).

Teare (1997), emphasised that monitoring and evaluation of policies and procedures is crucial in understanding not only what works well, but also what needs to be improved. Monitoring and evaluation aims to generate confidence in the policies; strengthen any weak areas and inform future planning and action. Teare explained that monitoring and evaluation needs to take place at an institutional level to ensure that policies and schemes operate in the same way, but also at a personal (pupil) level to monitor progress of individual children. Progress can be monitored using information from multiple sources including value-added data, individual education plans and reviews, and individual pupil data. Teare (1997) also believed that several individuals should be involved with the process of monitoring and evaluation and should include the school coordinator for gifted and talented pupils, teachers, parents who can assess the pastoral as well as curricular effects, and pupils themselves.

The few empirical studies that discuss monitoring and evaluation strategies all imply that these strategies are worthwhile. One teacher carried out a study of the practical implications and issues involved with updating policy documents and improving identification procedures in her comprehensive school in the UK (Welding, 1998). Welding preferred an identification model that prioritised the importance of evaluating provision. Coordinators were responsible for collating and circulating information. The model also valued students' responses to the changed curriculum and the quality of each individual department's provision by comparing it with a subject-specific checklist.

8.3 Monitoring and evaluation at a local level

Empirical research in one LEA illustrated that action research, involving observation, reflection and implementation, allowed teachers to monitor their teaching and learning (Clark, 1997). The LEA supported a group of teacher-researchers to undertake action research projects related to working more effectively with gifted pupils. The outcomes of the research were:

- a more coherent framework for decision making with regard to policy, provision and practice
- an innovative approach to professional development
- a self-sufficient school with a research community.

It was found that action research is a useful monitoring tool that enables teachers to understand how to raise standards for the able and talented.

8.4 Monitoring and evaluation of national initiatives

At a national level, several pieces of literature recommended that discrete monitoring and evaluation techniques should occur (Hunter, 2003; Ofsted, 2001a and b; Pye *et al.*, 2000).

Ofsted (2001a) examined how 20 schools had progressed in implementing the gifted and talented strand of EiC after its first year. Ofsted found that the:

…most evident weakness of the initiative was in schools' systems to monitor what pupils identified as gifted and talented were achieving through the activities provided, whether supplementary or otherwise.

(Ofsted, 2001a, p. 69)

Similarly, one of the main conclusions from Ofsted's (2001b) evaluation of EiC and grant-funded programmes is that there needs to be improved monitoring since:

most of the schools visited in this survey have not yet developed effective systems to monitor the additional improvement the programmes are intended to promote.

(Ofsted, 2001b, p. 43)

Ofsted advised that senior managers need to interpret data on attainment and behaviour to find out which groups of pupils are successful and in which departments. Systematic monitoring forms a good basis for evaluating the effectiveness the provision made. Ofsted also stressed the importance of monitoring pupils' performance in enrichment activities such as gifted and talented summer schools and masterclasses because they must not be regarded as bolt-on activities that do not need monitoring. Ofsted recommended a simple system should be set up to ensure the coordinator can inform pupils' regular teachers of their achievements in summer schools and masterclasses.

8.5 Monitoring and evaluation of the gifted and talented strand of Excellence in Cities (EiC)

More recently, Pocklington *et al*. (2002) reviewed the monitoring and evaluation techniques of 14 schools involved with EiC. The authors found from the interviews that:

the extent and quality of monitoring and evaluation of the gifted and talented strand

varied between schools, and two headteachers felt that this was a weakness in their school.

(Pocklington *et al*., 2002, p. 42)

The task of monitoring and evaluation was usually left to the GATCO but teachers were becoming more involved with this process. Monitoring involved looking at pupil attainment, together with 'softer' qualities such as pupils' self-confidence and self-esteem in their motivation.

Only a handful of schools stood out for 'rigour and thoroughness' of their monitoring and evaluation (Pocklington *et al*., 2002, p. 42). For example in one school, the gifted and talented coordinator asked all able pupils to fill in a questionnaire asking them about their projected exam grades, the GCSEs they planned to do and their post-16 plans. This was then discussed in the pupils' termly interviews with the coordinator. Coordinators monitored resources that were allocated by a staff bidding process. The research also showed that there was relatively little evidence of monitoring and evaluation having a serious impact on practice. Thus, the authors concluded that 'a strong and effective system of target setting and performance monitoring for pupils' is needed (Pocklington *et al*., 2002, p. 61). Monitoring and evaluation should influence practice.

Hunter (2003) presents a case study of the monitoring and evaluating techniques within the gifted and talented strand of EiC at one school. EiC funding allowed monitoring and evaluation techniques to be strengthened. It included a review of individual education plans using Microsoft Access, looking at interviews with pupils to assess their views on their progress and tracking of resources. The school found that monitoring:

has been a 'fit-for-purpose' exercise – rather than follow some rigid model we allow a system to emerge that will give us the

information we require to make management decisions.

(Hunter, 2003, p. 57)

This worked well and the deputy headteacher was confident that using quantitative and qualitative data, he could account for the spending and the impact it had had on pupils at any point throughout the year. He provided a useful checklist of processes to monitor the gifted and talented strand, including initial personal interviews, target-setting and action plans. The ten per cent cohort's end-of-year results should be related to expected outcomes that have been derived from key stage entry scores.

8.6   Monitoring and evaluation of summer schools

Research on DFEE / Sutton Trust-funded pilot summer schools for gifted and talented students in 1999 revealed that at all 32 summer schools, evaluation of progress occurred on a daily basis. The majority of summer schools used several methods including attendance registers, student and parent questionnaires, staff reviews and logbooks for recording individual targets (Pye *et al.*, 2000). The summer schools were keen to promote self-review amongst the students and they were encouraged to set personal targets. The evaluation actually had an impact on practice because many schemes were adapted in the light of feedback on individual and group progress.

Nevertheless, Pye *et al.* (2000) recommended that:

...projects should agree detailed arrangements for the monitoring and evaluation of student progress and attainment following summer school participation both within and outside of host institutions.

(Pye *et al*., 2000, p. 17)

Evaluation and monitoring needs to extend beyond the summer school period into the following academic year to assess the impact the summer schools had on gifted pupils' future attainment. The research team also recommended that 'summer schools should aim to maximise parental involvement in schemes in relation to monitoring and evaluation of student progress' (Pye et al., 2000, p. 18). Parents could monitor and evaluate out-of-scheme activities completed by their child, which would give coordinators an additional source of information on which to base future practice. Thus, although monitoring and evaluation of the scheme itself was evident, clearly this needs to be extended to the monitoring of pupils' progress after the summer schools.

8.7 Summary

The literature revealed that monitoring and evaluation of schools' gifted and talented policies and practices, as well as national initiatives such as EiC and summer schools, needs to become an important part of all schools' agendas. Monitoring and evaluation is beginning to become an important aspect of more recent initiatives, yet there needs to be more research to see the impact of these processes. It is also important that several evaluation techniques are used so that a whole range of views can be accounted for. Monitoring and evaluation needs to be an ongoing process so that educators can assess the impact of an initiative even after it has finished.

9 Conclusion: lessons learnt from the review

This final section will summarise the main points from each section of the literature. We shall then provide an overall summary that aims to set the main points within the wider educational context and identify any gaps in the literature. Finally we present a critical conclusion and suggest a future research agenda.

9.1 Scope of the literature

- The literature relates to policy and practice at national, institutional and classroom levels.

- At present, there is little internal consistency among these three levels and it is not always possible to track any one theme through all levels. For example, at present, it is not clear as to what is the most effective classroom preparation for world-class tests.

- There is a lack of multi-disciplinary studies that draw together relevant expertise – for example, within the philosophy of education, educational psychology and professional musicians/ sports trainers.

9.2 Identification

- While there is consensus that identification must be by multiple sources, there is still lack of clarity and understanding about the relative advantages and disadvantages of different identification procedures. Furthermore, it is not clear how these multiple sources should be brought together or their relative status in different circumstances.

- The literature does not discuss the difference between the identification of relative higher ability (for example, within a particular school) and the more objective identification of higher ability (for example, when looked at nationally). The former allows for schools to ensure that there is adequate provision for the most able pupils on the school roll. The latter allows for the most talented young people to be brought together for a specific, highly focused, expertly staffed activity.

- There is an absence of consensus or discussion in the education literature about the characteristics of 'high ability' in different curriculum areas. Again, the absence of informed multi-disciplinary studies is noteworthy – much of the literature is limited and the result of individual, albeit well-motivated, practice.

9.3 Differentiation

- The literature emphasises the need for curriculum differentiation in order to meet the needs of gifted and talented pupils in mixed-ability contexts.

- However, there is minimal research on coherent approaches to differentiation for these pupils – as opposed to 'shopping lists' of ideas.

- There is also little research on the opportunities afforded by different types of differentiation in relation to enrichment and acceleration. While acceleration in a particular subject can be a form of differentiation, there may yet be a need for differentiation within an accelerated group, if all individual needs are to be met.

9.4 Enrichment

- The literature highlights the importance of enrichment in allowing gifted and talented pupils to respond creatively and

with imagination. Enrichment appears to be one of the optimal means of providing opportunities for potential to be released.

- While the literature is clear that enrichment activities should be embedded within the curriculum, rather than being 'bolt-on extras' (so that skills are transferable back to the classroom) there is little evidence of long-term, benefits of enrichment.

- There are also few criteria for evaluating the coherence of enrichment activities in relation to the whole curriculum.

9.5   Acceleration

- The literature gave evidence that perceptions of the success of acceleration of gifted and talented pupils are influenced by the structure of any national curriculum in place and the possibilities afforded by the particular educational system.

- Therefore, in the UK, which has a National Curriculum with in-built flexibility so that it can be appropriate for a range of abilities, acceleration in terms of advancing a pupil a chronological year is rarer than in countries where there are more fixed end of year/grade tests which are necessary for advancement.

- There is evidence that subject-based acceleration is more common in some subjects than others, notably, mathematics and modern foreign languages. There is little attention to the rationale for this and little discussion of the relative appropriateness of acceleration in such subjects or in subjects where greater maturity of response may be a goal for gifted pupils.

9.6   Monitoring and evaluation

- The literature is clear that feedback loops are important in enhancing the provision for gifted and talented pupils and that multiple means of assessment are advantageous. But there is minimal research on the success of different means of assessment or the relative status which different means of assessment may have.

- With regard to the evaluation of programmes and curriculum provision, longitudinal studies are lacking and are mostly related to the effect of 'hot-housing', rather than provision embedded in 'ordinary' environments.

9.7   Personnel

- There is evidence that assigning responsibilities to a discrete post ensures that the needs of the gifted and talented pupils are kept on the agenda and attended to.

- The literature describes the functions of relevant coordinators but does not link these to monitoring and evaluation of the effects of these functions.

- The literature stresses the importance of collaborative working for gifted pupils. However, this cohort is both relatively small and also represents a wide range of interests, expertise and experience.

- The importance of training practitioners for discrete posts is increasingly being recognised.

9.8   Overview

9.8.1   Lack of empirical research

The literature reviewed indicated that there have been relatively few empirical studies of gifted and talented education and, consequently, evidence-based policy and practice are scarce. Instead, much of the literature reflects practitioner experience. While this is important and valuable, it is different from rigorously conducted research studies. There is the danger that practice remains limited by the particular ideas of those who are influential in the field and is self-perpetuating, and that other options are not considered.

9.8.2 Imbalance between 'gifted' and 'talented'

There is considerably more literature on 'gifted' pupils (pupils displaying discrete or generalised ability in the 'academic' curriculum) than on 'talented' pupils (pupils displaying ability in practical activities or artistic fields). These terms are as currently defined and used by DfES.

It may be speculated that there are well-trodden paths for 'talented' pupils, most of which lie outside the regular curriculum offered and representing 'specialised' or 'segregated' provision. For example, many local authority music services have well-established structures for advanced instrumentalists or clubs fostering competitive sport (which provide for the needs of those talented in sports). Whether all relevant young people have access to such provision should be considered.

The challenge of the academically gifted pupil is one which faces ordinary teachers in their day-to-day lives and if not addressed, could lead to disaffection and underachievement.

9.8.3 Lack of connection between 'giftedness' and 'talent'

The literature does not discuss the relationship between giftedness and talent – in particular, exploring the possibilities of developing the talents of academically gifted pupils as an alternative to acceleration, which may compromise their social and emotional development.

9.8.4 Contextual limitations of the literature

The literature is mainly confined to consideration of gifted and talented education in the normal educational context – that is, the comprehensive school (or non-selective primary school). While this is understandable given that this is the location in which most young people in the UK are educated and most teachers work, it does ignore the possibility of exploring the experience and expertise resident in schools that have traditionally provided for gifted

pupils, and which often have a reputation for developing excellence. These schools include the grammar schools in those local authorities which retain a degree of selection, and a proportion of independent schools nationally. Regardless of arguments about the 'value-added' offered by these schools, their selection procedures or the fact that the education that they offer may be limited because their pedagogy may be inappropriate to pupils of 'average' ability, there is, to date, no research evidence about the relevance and appropriateness of practice in these schools to the pupils they select. For example, how much of the policy and practice can be transferred to a non-selective environment? What can be said about the social development of pupils in selective schools and their attitudes to other, less able, peers?

9.8.5 Professional limitations of the literature

It was made clear in the introduction that this review focused on educational literature and did not include articles in which the principal focus was psychology. However, it is noteworthy that those advocating certain approaches for gifted and talented education do not generally refer in any way to the psychological literature nor use it to justify certain professional practices. There was evidence in the review that some schools were using the educational psychology service to support provision for gifted pupils but it is not clear as to how widespread this practice is. It is suggested that, in terms of learning styles, some theoretical input might usefully develop practice. There was minimal exploration of which types of presentation are most appropriate to particular activities; instead, the emphasis is on types of presentation *per se*, and discussion was divorced from the content of the presentation.

9.8.6 Criteria for 'meeting needs'

While the literature constantly refers to 'meeting the needs' of pupils who are highly able in various fields, it does not offer help to teachers in identifying how they know when these needs have been met. This is similar to

the literature on monitoring and evaluation that, is very general, referring to multiple methods and the need for tracking but not providing a framework for assessment.

9.9 Critical conclusion

The main conclusion from the literature is that the question remains as to the uniqueness of provision for gifted and talented pupils. A potentially useful source of evidence has been ignored (that of selective and specialist schools). Many of the themes identified from the literature merely reiterate factors in effective curriculum management (differentiation, pupil grouping, monitoring and evaluation, allocation of responsibilities). It is not immediately obvious that some of the literature is discrete to gifted and talented pupils. It may be that many of the suggestions of successful strategies for gifted pupils would work effectively for all types of pupil. Perhaps acceleration and enrichment are exceptions but, even here, there are similar discussions about pupils with learning difficulties who make atypical progress and may not necessarily have to go through all the 'small

steps' in order to master a task or understand a concept (to whatever degree).

The present report suggests that a critical look be taken at all the activity that goes on within the broad umbrella of 'gifted and talented' education in order to:

*   distil what is unique – rather an application of practice found elsewhere

*   identify what is evidence of effective practice – and the rationale for effectiveness

*   explore the conditions under which effective practice develops – and the transferability of these conditions

*   consider the nature of any discrete training, which educators may need to develop effective practice, as well as the most effective way for this training to be delivered.

It is suggested that progress will only be made by a multidisciplinary approach that draws on conceptual analysis, psychological theory, practitioner experience and expert description of 'ability'.

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