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Dyslexia – The New Dawn

Policy, Practice, Provision and Management of Dyslexia from Pre-five into Primary

(Volume 1)

by

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A thesis presented
in fulfilment of the requirements
for the degree of
Doctor of Philosophy

2002

Acknowledgements

Thanks are due to many for their encouragement and assistance over the years leading up to the completion of this thesis:

Professionally and academically, my first supervisor Professor Gilbert MacKay gave excellent supervision and appropriate encouragement, especially at times when progress was slower than might have been hoped. His guidance and openness to new ideas and different approaches combined with academic rigour and commitment to high standards have helped me maintain my own determination to see this thesis to its conclusion. Iain Smith, as second supervisor has given additional helpful advice and support on matters of analysis and management. As reviewer, Dr Rebecca Soden has maintained an active interest, and given critical encouragement at regular intervals.

Professionally my line manager, Ian Fraser, Head of Service (Special Educational Needs and Early Education), East Renfrewshire Council Education Department, has given appropriate words of encouragement throughout the study. Without his initial and continuing support the project would not have been possible. Hazel Hay, also East Renfrewshire Council, gave considerable clerical help with data input from the main East Renfrewshire survey.

In practical terms, young dyslexic people, their parents, teachers, head teachers, educational psychologists and other educational authority personnel in East Renfrewshire, and some from outwith have contributed their time, specific knowledge and insight to advance this thesis and the wider knowledge and understanding of dyslexia, and to develop working practice with dyslexic young people.

Numerous other professionals and non-professionals have helped shape the final thesis. Through their correspondence, conversation and debate a multitude of perspectives have been taken into account.

Not least, my husband Alan and family, for putting up with me for the five years of the study. My daughter, Fiona, was also the initial inspiration for the current study.

Dyslexia: The New Dawn

Show them the light and let them walk towards it.
Light their way and let them run.
Teach them how to make the light,
And watch them fly beyond the sun.

Dedication

To my daughter, Fiona who first fired my interest in the subject of dyslexia.

Abstract

An investigation was carried out into policy, practice, provision and management of dyslexia from the pre-five to primary stage of education. Factors in the early development and home life of young dyslexic children were considered to establish if and how these are contributory to the unfolding of dyslexia in later years. The early development of dyslexia was studied with questionnaires sent to the parents of all pre-school year and Primary 1 children, a total of 1994 children, in the 1997-1998 school session. Both the phenotype and the genotype were considered. The initial survey was repeated in the 2000–2001 school session with parents of children from the same age groups (2305 children in total). In phenotypical areas, there were found to be no difference between the dyslexic group and the non-dyslexic, whereas there were differences apparent in the genotypical areas at these early stages.

Structured interviews were also carried out with head teachers, parents and dyslexic pupils from schools throughout East Renfrewshire, and a questionnaire was given to educational psychologists. These were to establish the perceptions of school personnel, parents, pupils and educational psychologists on what exactly is involved in dyslexia and what can be done about it. Implications for policy, practice, provision and management were then considered.

Case studies of individual children who showed early indications of possible dyslexia were studied longitudinally over the period of the study and these gave further insight into practicalities of management. Various other measures were taken into account to widen the scope and credibility of the study. A systems perspective is taken in making recommendations of possible ways forward.

A novel and major outcome of the study has been the proposal of a new perspective in defining dyslexia focusing on the curriculum with wide implications for practice in both education and psychology.

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CHAPTER 1

Introduction

This chapter introduces the subject of dyslexia and considers the context for its study. The research will investigate early dyslexia and how it is dealt with in one local education authority – East Renfrewshire.

A child has to **fail** to learn to read and write before the term "dyslexia" will be used in a local authority context, and often before effective provision will be made (Fawcett & Nicolson, 1994; Nicolson, 1996; Ott, 1997; Singleton, 1994a; Tunmer & Chapman, 1996). The child's failure, with its detrimental effects on self esteem, motivation, and often classroom behaviour, exerts an unacceptable burden on the dyslexic child, but also affects teachers and parents who must cope with the subsequent social, emotional and developmental effects of the child's early frustrations (Frith, 1999). This study concerns an Education Authority's response to children who may be considered "dyslexic".

According to Snowling (1987), "dyslexia is a disorder with a number of different manifestations". It is not only reading and writing which are affected. There is however a group of signs of dyslexia which generally come together to form what may be termed a "syndrome" (Miles & Miles, 1990; Frith, 1999). While not all these signs will be present in the pre-school dyslexic child, and it is difficult to be age specific about all the early warning signs (Ott, 1997), nonetheless there is evidence that these types of difficulties can be established through early indicators at the pre-school stage. Indicators are set out in Crombie (1997a), page 6, and shown in Appendix 1 of this thesis.

In spite of these early indications of difficulties, few authorities have given priority to assessing for "at risk" children at the pre-school or even early primary school stages. These children are not "at risk" of dyslexia. If the research is right, and dyslexia is genetic in origin (DeFries, Alarcón & Olson, 1997), then these children already have dyslexia. They are however "at risk" of experiencing failure to learn to read and write to an acceptable level with accompanying frustrations. Often dyslexic children are not formally identified until there is at least the equivalent of a two year gap between

reading ability and considered potential, as measured by an Intelligence Quotient (IQ) test such as Wechsler Intelligence Scale for Children (Wechsler, 1981; 1992) or British Abilities Scale (Elliott, Murray & Pearson, 1983). "Mental Age can be calculated by multiplying the child's Chronological Age by his IQ, and dividing the result by 100" (Crombie, 1997a, p. 16).

The benefits of a policy of early identification of reading and other language difficulties, whether these are of a dyslexic nature or not, are potentially great not just in financial terms to the education authority, but also in terms of a child's self esteem and motivation with subsequent affects on future achievement, behaviour and career prospects. To some extent, the problems of early literacy development are being tackled through the Government's Early Intervention programme which began in 1997 and aims to ensure rising standards of literacy and numeracy for all children (Scottish Executive Education Department [SEED], 1999). However, the largest vulnerable group in learning to read are not those with dyslexia, but those from impoverished home backgrounds (McMillan & Leslie, 1998). While the programme is targeted at counteracting the effects of social deprivation on literacy, it would be expected that the benefits would apply to all children. It must be questioned however whether the Government programme will be effective for **dyslexic** children or if dyslexia will still emerge as a problem at later stages.

While there is some recent research which is considering possible assessment of dyslexic indicators in babies, this is still at an early stage of development and may not prove reliable (Van der Leij, Lyytinen & Zwarts, 2001). Methods of early identification prior to 30 months of age through standardised testing have rarely offered much in the way of reliability, and therefore little predictive validity (Mittler, 1970). However, beyond this stage, results are generally more stable (Anastasi, 1988). Claims of recent tests which suggest a high degree of predictive validity with pre-school children require evaluation to establish if indeed they offer new opportunities in the dyslexia field. Perceptions of parents as to their expectations regarding early identification also require exploration. This study therefore sets out to investigate if dyslexia can indeed be reliably identified at an early age, and if so, how. The potential affects on the child and family require consideration, as do parental expectations of the local authority. Any additional measures which may be required must be taken into

account. The study investigates a variety of possible means of identifying dyslexia at the early stages, and considers the value not just to the individual, but also to an education authority, in ensuring that all children who are at risk of later failure in literacy learning are acknowledged and receive the appropriate help and support for their early difficulties. A range of perspectives require to be considered.

The project is set in East Renfrewshire, a small education authority, covering areas of both deprivation and affluence. It has a high number of children from ethnic minority groups, many of whom are learning English as a second or additional language. The researcher is manager of a Network team of peripatetic teachers who each work in schools within the authority, supporting staff and children. Although Network staff work with all age groups of children, and with all areas of special educational needs, this study focuses on dyslexia, and considers nursery school and the early stages of primary school.

Previous longitudinal studies have been carried out into various specific areas in the dyslexia field, such as phonological awareness and its effects on the development of literacy, and it seems apparent that such factors will have later effects on reading and spelling ability. Some studies exist too of the beneficial effects of training children in early phonological awareness strategies (Bryant & Bradley, 1985). This project accepts the findings of such studies and makes no attempt to replicate them. This is being done by others elsewhere.

What is novel about this study is that it considers the real world of a Scottish local authority where the realities of the legal system, politics and pressure groups influence policy, provision, management and practice. The study seeks to take account of the perceptions and feelings of parents, teachers, educational psychologists and the children themselves and how these subjective elements operate on the whole world of the dyslexic child in the education system. It also seeks to identify what may be politically sensitive, and address the issues which arise. Through investigation of individual children through case studies, real world solutions to the problems raised can be investigated. While acknowledging the political sensitivity of the dyslexia field, the writer seeks to clarify an area which through its history has remained somewhat mystical, and to some even mythical. In so doing, the writer adopts a systems approach, resulting in a novel reconceptualisation of the term "dyslexia".

In the real world of an education authority, finances are limited. Demand often exceeds supply, and frustrations develop on all sides with ensuing dissatisfaction (Nance-Dewar, 2000). Politics inevitably influence provision, and therefore practice (British Psychological Society, 1999). The report is structured to reflect the variety and complexity of issues which are present in the early identification of dyslexia in a local authority context. While the topics of Policy, Practice, Provision and Management permeate the whole study and are the main reason for the study, these main headings have been dealt with in the final chapters as this seemed the most logical place for them (in order that the findings of the research can be discussed and conclusions drawn).

As the volume of literature on the various different branches of the study is vast, the relevant literature has been discussed under the various chapter headings rather than as one very lengthy literature review. Published materials have been read and used "during all phases of the research" to give "an actual interplay of reading literature and data analysis" (Strauss & Corbin, 1990, p. 56). Following the approach of Glaser (1998) the theory is used to guide the researcher through the most appropriate literature, rather than waste time on literature which may prove unfruitful. "The literature is discovered just as the theory is. Once discovered the literature is compared as simply more data" (p. 69). Where new literature has become available in the course of the study, the benefits of the word processor have been utilised to the full and literature which gives further weight to the findings has been added at the most appropriate points rather than at the end.

Various research methods involving for example, questionnaires, interviews, surveys, evaluations and individual case study illustrations have been employed. The study therefore relies on multiple methods of enquiry as befits the multiplicity of areas which are being inquired into, and a grounded theory approach has been adopted in order that all the various strands can be drawn together. "Done properly, the grounded theorist can never dream beforehand what he will discover and which literature will apply" (Glaser, 1998, p. 69).

The education authority has been named, but the children and parents involved have been anonymised. It is hoped that the findings of the study will enable policy, practice, provision and management of dyslexia to change to take account of earlier identification of needs with subsequent appropriate intervention. While outwith the realms of this

study, subsequent effects on the career and life prospects of those currently identified should be improved (Jameson, 2001; Kirk, McLoughlin & Reid, 2001; Reid & Kirk, 2001).

Dyslexia – Towards a definition.

The dyslexia literature throughout its history has striven to find an agreed definition for dyslexia, and at certain points in history some have even questioned the existence of the phenomenon which has become recognised as "dyslexia" (BPS, 1983). The search for an agreed definition continues and seems likely to persist for the foreseeable future. However, this search seems to have strange parallels to the work of Wittgenstein who searched for the essence of language, of propositions, and of thought - all three being involved in dyslexia at every level of study. Investigations, according to Wittgenstein, see in the essence something which is hidden from us. Just as Wittgenstein questions, "What is language? What is a proposition?", so too the question must be asked, What is dyslexia?, and as Wittgenstein states, "The answer to these questions must be given once and for all; and independently of any future experience" (Wittgenstein, 1953, p. 43). The purpose of this chapter at this point in the study is not to give a definitive notion of what dyslexia is and is not, but to discuss the nature of the word, its usefulness as a concept, and how progress can be made with the study in the context of the controversy which exists. The whole concept of dyslexia will be discussed further in the course of the study, and Chapter 18 will achieve a reconceptualisation of dyslexia, taking into account the research evidence which the study will produce.

"For a large class of cases, though not all, in which we employ the word "meaning" it can be defined, thus the meaning of a word is its use in language" (Wittgenstein, 1953, p. 209). "Existence cannot be attributed to an element, for if it did not exist, one could not even name it and so one could say nothing at all of it" (Wittgenstein, 1953, p. 25). While some may debate Wittgenstein's views, in recognition of the vast amount which has been said and written about dyslexia, the existence of dyslexia is not being questioned, as undoubtedly the word can be named. For those young people and their parents who are described as "dyslexic" in East Renfrewshire, the very question of existence must seem irrelevant. Ontological arguments therefore regarding the existence of dyslexia as a concept are not in debate at this point, however as will be

seen at a later point, further discussion will be required on the existence of dyslexia in the very early years of a child's life, and this will be considered in later chapters. At this present point the meaning of the word "dyslexia" is the main point for consideration.

Looking to the Greek roots of the word does little to simplify the issue: the term comes from two Greek words - dys (here meaning "difficulty with") and lexicos or lexis (meaning 'words') (Doyle, 1996, p. 69; BPS, 1999, p.18). This description, taken to refer to written words of a language, whether in the sense of reading, spelling and/or writing does provide an indication, however imprecise, of what is involved. It is difficult however from this description to imagine why the word has caused such controversy when mentioned in educational and psychological contexts.

Juggins (2001a; 2001b), who is himself dyslexic, sees the above reference to the Greek roots of the word "dyslexia" as being automatically negative, focusing on "a small weakness of a whole mind set, rather than incorporating areas of intellectual difference, many of which are strengths" (p. 1). He believes this results in educators forcing dyslexics into narrow forms of learning which stress weaknesses and "remediation" rather than focusing on learning in its broadest sense.

Dr Rhodes Boyson speaking in Parliament as spokesman for the Government on 10 March 1981 said that "dyslexia is difficult to define" and "certain educationalists presume that it does not exist" (BPS, 1983, p. 104). In investigating definitions of dyslexia, Doyle (1996) considered seven authoritative sources between 1968 and 1989, including the World Federation of Neurologists and the Department of Education and Science. While the definitions given varied greatly there was agreement that dyslexia is a **difficulty with reading** and generally also involves spelling, writing and number work, and that performance in these areas is **discrepant** with the child's basic level of ability.

It is often possible however through appropriate teaching to affect an improvement in reading ability. There is general agreement that this does not mean that the individual ceases being dyslexic. Accompanying difficulties generally persist - many of them throughout life (Singleton, 1994a; Miles, 1993).

Recent definitions tend to consider the underlying elements involved in the reading difficulties, and look at the information processing difficulties which affect reading,

writing, spelling and number, and have wider implications. The British Dyslexia Association (1994) refers to specific learning difficulties/dyslexia as:

> organising or learning difficulties affecting fine coordination skills and working memory. It is independent of overall ability and conventional teaching. When untreated there are significant limitations in the development of specific aspects of speech, reading, spelling and numeracy - which lead to secondary behaviour problems although other areas of ability are unaffected (British Dyslexia Association, 1994, p. 3).

In the American context, the Orton Dyslexia Society, which might be considered the American equivalent of the British Dyslexia Association, refers to dyslexia as:

> ... ..one of several distinct learning disabilities. It is a specific language-based disorder of constitutional origin characterised by difficulties in single-word decoding usually reflecting insufficient phonological processing abilities.
>
> These difficulties in single-word decoding are often unexpected in relation to age and other cognitive and academic abilities; they are not the result of generalised developmental delay or sensory impairment.

Dyslexia is manifest by variable difficulties with different forms of language often including, in addition to problems in reading, a conspicuous problem with acquiring proficiency in writing and spelling (Orton Dyslexia Society, as cited in Adamson & Adamson, 1995).

A Scottish perspective offered from the Moray House Centre for Specific Learning Difficulties by Reid (1994) refers to specific learning difficulties (dyslexia) as "distinctive patterns of difficulties, relating to the processing of information, within a continuum from very mild to extremely severe, which result in restrictions in literacy development and discrepancies in performances within the curriculum". (p. 3)

A recent definition from the Division of Educational and Child Psychology of the British Psychological Society (BPS, 1999) considers dyslexia to be

> evident when accurate and fluent word reading and/or spelling develops very incompletely or with great difficulty. This focuses on literacy learning at the "word level" and implies that the problem is severe and persistent despite appropriate learning opportunities. It provides the basis for a staged process of assessment through teaching. (p. 18)

The 'staged process' referred to, is that of the Code of Practice for England and Wales (DfEE, 1994).

Burden (2000) views the BPS definition as "disastrous" as it does not take account of a multitude of factors which all influence the dyslexic child. Burden considers dyslexia to be "a term of convenience, used to describe a loosely-knit subset of people who have difficulty in learning to read, write or spell" and adds,

> Such people are often referred to as having 'specific learning difficulties' (SpLD) to distinguish them from people suffering from general or 'moderate' learning difficulties (MLD) because they appear to have nothing like the same difficulties in other areas of the learning, except as a result of their literacy difficulties. They may even display a high level of reasoning ability and /or other educational talents, particularly in non-verbal areas (Burden, 2000).

A judgment (Phelps (AP) v. Mayor) from the House of Lords (2000) which resulted in a single award of £45,650 against Hillingdon Council for failure to identify dyslexia in a former pupil, Pamela Phelps (Rabinowitz, 2000), was based however on a 1968 definition by the World Federation of Neurology which states that dyslexia is "a disorder manifested by difficulty in learning to read despite conventional instruction, adequate intelligence and socio-cultural opportunities. It is dependent upon fundamental cognitive disabilities which are frequently of constitutional origin" (House of Lords, 2000, p. 2).

From the above definitions and descriptions of dyslexia, there seems little agreement regarding the true meaning of the word "dyslexia". This presents a philosophical problem as to whether it is necessary or even possible to define words. Wittgenstein (1953) questions whether we can truly understand words: "Must I *know* whether I understand a word? Don't I also sometimes imagine myself to understand a word and then realise that I did not understand it?" (p. 53).

Definitions, and indeed, understandings change over time and across cultures. What we understand as "dyslexia" today, may well be different from our understanding in some years time. The purpose of philosophy, argues Wittgenstein, is to present the facts as they are:

Philosophy simply puts everything before us, and neither explains nor deduces anything. Since everything lies open to view there is nothing to explain. For what is hidden, for example, is of no interest to us...

For we can avoid ineptness or emptiness in our assertions only by presenting the model as what it is...; not as a preconceived idea to which reality must correspond. (The dogmatism into which we fall so easily in doing philosophy.) ...For the clarity that we are aiming at is indeed complete clarity. But this simply means that the philosophical problems should completely disappear (Wittgenstein, 1953, pp. 50-51, paras 126, 131 & 133).

The purpose therefore, in presenting this investigation into dyslexia at the early stages must be to present the evidence, and to guide the reader through the research so that the evidence becomes clear. The need for clarification of meaning is obvious, and in this field, as Wittgenstein might postulate, there are enough "preconceived ideas" to which reality has had to respond. A new definition therefore may only add to the confusion. The final chapter in this thesis will hope to present the "model as what it is", and therefore through appropriate methodology, the philosophy will strive to set everything before the reader.

Not all definitions and descriptions of dyslexia actually refer to a discrepancy between IQ and reading and spelling levels as measured by standardised tests. However, in education authorities often children are not identified until there is at least a two year lag between reading ability and chronological age when a mental age is calculated for a child who is of at least average intellectual ability (as measured by standardised test material such as Wechsler or British Abilities Scales (Elliott, Murray & Pearson, 1983; Pumfrey & Reason, 1991; Beech & Singleton, 1997; Wechsler, 1981; 1992). Contrary to much popular lay opinion, "average" intellectual ability applies to "children between the 15th and 85th percentile" (Gillham, 2000, p. 8). In local education authority terms, resources often determine which children will be labelled and which will not (Beech & Singleton, 1997). Children who fall below the average IQ range therefore are considered to have difficulties of a general nature. Those therefore who fall below the 15th percentile on an IQ scale would not be considered to be dyslexic.

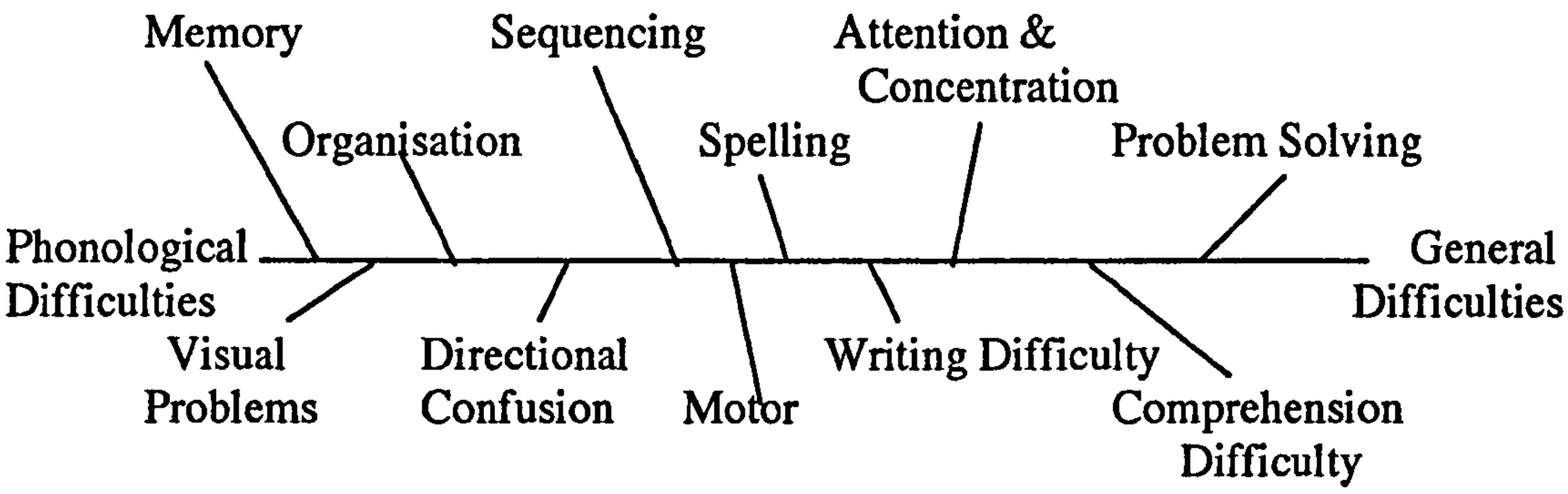
Because children do not usually start to learn to read until the age of five, the need to establish a gap of two or more years between reading age and chronological age, has resulted in dyslexia not being recognised until a child is at least seven years of age, and often very much later (Gardner, 1994; Singleton, 1994b). With subsequent waiting lists for assessment by an educational psychologist, often children are very much older before specific strategies aimed at tackling pupils' problems are effected. By this time children will have experienced significant failure with its negative consequences (Catts, 1989). Limited resources must be targeted at those who seem likely to benefit most.

Historically, because of its link with IQ, dyslexia has been viewed as a **specific** learning difficulty, to differentiate it from a **general** learning difficulty. Children who can be considered (on the basis of IQ) as globally slow learners are considered to be poor at reading and written work because of their slow learning abilities (**general** learning difficulties), whereas those who are otherwise able are considered to have **specific** learning difficulties (SpLD). This is further explained in Crombie (1997a, pp. 14-16).

The British Psychological Society (1983) considered the terms "specific learning difficulties" to be synonymous with "dyslexia" in their writing of the time, and recommended that "the term 'specific learning difficulties' should be used as it finds favour with a number of other interested parties" (BPS, 1983). These interested parties included psychologists who had responded to the Society's questionnaire, members of some professional associations, the British Dyslexia Association, and one of the two university centres approached. The Report concluded that psychologists "must...be prepared to accept that they (those in other disciplines) wish to use the term dyslexia even though we (educational psychologists) prefer to use specific learning difficulties." (p. 107) Recent years have however seen the two terms separate in meaning (Poustie, 1997), though there are undoubtedly some psychologists who prefer to use the term SpLD.

Both Reid (1999) and Stanovich (1988a) view dyslexia as being on a continuum of difficulties with the dyslexic pupils at one end of that continuum and those with more global difficulties at the other end. Reid represents this visually in the following way:

Figure 1. Reid's (1999) representation of the continuum of dyslexia.



Because dyslexic difficulties are here viewed as being on a continuum, it is not necessarily either feasible or desirable to label dyslexic children in the pre-school years due in part to lack of criteria as to the degree of severity necessary to draw a line between those who might be considered "dyslexic" and those who would be considered as "not dyslexic", and due also to the lack of sufficient discrepancies (even if these discrepancies are valid indications of dyslexia). It would be more satisfactory at this stage to identify those "at risk" of later failure in learning to read, to determine their needs, and to implement appropriate teaching strategies. The benefits of adopting an intervention policy of this nature are as follows:

- less time will be needed for catching up
- children can be helped before frustration sets in
- children can often be helped within the classroom situation by a class teacher or assistant through short spells throughout the week.

(Badian, 1988a; Chasty, 1996; Miles & Miles, 1984)

There is a considerable attraction in being able to detect and manage dyslexia at the early stages through a process of prediction of those who are likely to be "at risk" of reading failure, whether or not the label "dyslexia" is used. While the general mood is optimistic, little has been done in terms of local authority provision to identify those children concerned. Recent years however have seen a rapid increase in the amount of research designed to remedy this situation (Badian, 1988b; Lundberg, Frost & Petersen, 1988; Nicolson, Fawcett, Moss, Nicolson & Reason, 1999; Muter, Hulme, Snowling & Taylor, 1997). However there is still some doubt as to whether this will be possible with any degree of reliability. Even if a statistically significant correlation exists between early childhood "predictors" and later reading achievement, this will not

guarantee that individual children will not be missed, or that there will not be over-identification.

The relevance of IQ/achievement criteria

In most countries it is considered appropriate to assess dyslexia through a discrepancy between literacy achievement and other attainments. Pumfrey and Reason (1991) report from a survey undertaken by the Division of Educational and Child Psychology of the British Psychological Society that 78% of educational psychologists usually assess discrepancies between abilities and attainments. In the United States 76% of states specify a method for determining an ability/achievement discrepancy (Frankenberger & Fronzaglio, 1991).

Stanovich argued as early as 1991 that definitions of dyslexia which refer to IQ are problematic in that the notion of IQ is not a reliable measure of "unlocked potential". Instead, Stanovich argues for a model which considers the differential between listening comprehension and achievement in reading as being more viable though still with potential to be problematic (Stanovich, 1991). Spring and French (1990) also consider listening comprehension to be a more relevant factor than IQ in establishing a more educationally relevant means of assessment. Siegal (1989) takes a strong stance against the use of IQ in the assessment of dyslexia, and instead proposes a model which uses specific tests of achievement that "might give a better idea of the child's actual functioning" (p. 477).

Stanovich considers that the use of IQ scores as a means of establishing a hypothetical construct such as intelligence is fundamentally flawed, and of little relevance in the assessment of dyslexia. The multifaceted nature of human abilities and their strong dependence on both environmental and motivational factors are further stressed by Howe (1988, 1989, 1990) and others (Gardner, 1983; Goleman, 1995; Kincheloe & Steinberg, 1999).

Frith (1999) outlines a three-level framework within which to gain a greater understanding of the concept of dyslexia. The three levels – biological, cognitive and behavioural also take account of interacting environmental influences. Behavioural features of dyslexia such as difficulty with reading and writing are agreed. When seeking to explain why there are difficulties with reading and writing, however,

cognitive factors (such as information processing) and biological factors (such as genetics) can be considered alongside environmental influences such as teaching and socio-economic status. Through consideration of various influences on the dyslexic child, differing theories are seen to be interlinked and compatible with one another. Thus the concept of dyslexia as a syndrome assumes a biological origin which is genetic with its basis in the brain. Behavioural influences and environmental influences will then interact to produce a specific manifestation of the dyslexia difficulties. In time, a child with the syndrome of dyslexia may be taught to read and cease to exhibit any significant problems in reading while still maintaining certain characteristics of the dyslexia syndrome. Another child may exhibit reading difficulties which are due to poor teaching and considerable time off school for medical reasons. Frith advises that the use of arbitrary scores on IQ tests and cut-off points on reading and spelling tests are inappropriate as they assume a discrepancy model of dyslexia which makes it difficult to identify dyslexia in children with low IQ. As there are no research reasons why a model of dyslexia which refers to children with high or average IQs can be justified, this is inappropriate as an explanation. Frith proposes that the word "dyslexia" should be used only to refer to the neurodevelopmental disorder, not to mere reading failure.

Comorbidity of developmental disorders is common. A child who exhibits attention deficit alongside dyslexia for example may mean that there will be problems in ascertaining the severity of each area. Frith considers that defining dyslexia in terms of reading failure is like defining measles in terms of increase in body temperature. A decrease in temperature does not equate with a cure in the same way that teaching a child to read and write does not cure dyslexia. Phonological deficits which are persistent are seen as a way of classifying dyslexia in children, though Frith agrees that there are a few dyslexic children who may be missed by such a definition. In view of the fact that phonology almost always causes problems to be worse than they would otherwise be, this is seen as acceptable. Environmental and cultural influences can then interact to improve or make difficulties worse. Thus the use of spelling checkers, computers and one-to-one teaching can influence the outcome for the child (Frith, 1999). All levels and factors must be taken account of in explaining and defining dyslexia.

Aaron, Kuchta and Grapenthin (1988) tackle the question, "Is there a thing called dyslexia" which is qualitatively different from general reading difficulties? They hypothesise that "the etiology[1] of dyslexia is different from that of other forms of reading disability because there is a difference in the components that malfunction in dyslexia and other forms of reading disability. The components to which Aaron et al. refers are decoding (Component 1) and comprehension (Component 2). Aaron et al. matched two groups for reading comprehension, dividing them into "at or above grade-level" for comprehension and "below-grade-level" comprehension. Poor readers with "normal" listening comprehension were deficient in tasks that involved grapheme-phoneme conversion. When decoding was minimised, reading comprehension was comparable to that of "normal" readers. The "below-grade-level" readers, however, were poor in measures of reading comprehension even when decoding requirements were minimal. This group also had below average IQ scores and were considered as "general reading backward". Developmental dyslexia, it was concluded, is different in etiology from that of "general reading backwardness" (Aaron et al., 1988).

While Aaron uses his findings to justify his use of the word dyslexia, it seems that by dividing his groups into average and above average comprehension, and below average comprehension, he has created exclusionary criteria which seem to be saying that below average children (in IQ and comprehension) cannot be dyslexic. While this may tie in with early exclusionary definitions of dyslexia, it is doubtful if it gives an adequate explanation. Dyslexia, it seems in Aaron's view, only strikes average and bright children. Aaron's conclusions still leave a lot of questions unanswered. Why would a condition such as dyslexia only affect bright children? Where does the boundary between dyslexic and not dyslexic lie? How reliable do the test instruments have to be before we can draw a conclusion? To some extent, these are issues which are taken up by Stanovich (1996). Stanovich deals with the problems associated with the use of IQ tests in determining whether or not individuals are dyslexic.

While accepting that "reading disabilities" may have a distinct etiology, Stonovich argues that "there is no logically or empirically interpretable sense in which we can say that low intelligence (intelligence being a panoply of cognitive processes) **causes** poor

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[1] Aaron uses the term 'etiology' to refer to proximal causal factors such as decoding and comprehension and not distal causal factors such as genetics and neurology.

reading" (Stanovich, 1996, p. 155). To make such an assumption would be to wrongly conclude that correlation means causation, implying that low IQ means poor reading. Stanovich proposes instead that dyslexia is a core deficit in phonological processing, and that "**all** children with problems in phonological coding resulting from segmental language problems are dyslexic" (Stanovich, 1996, p. 161).

While there are some that argue that the notion of intelligence and IQ scores are not useful as explanatory factors of anything, there are some too who will argue that much of human behaviour can be explained by reference to IQ (Nettelbeck, 1989). The usefulness however of individual subtests has been justified in the context of dyslexia assessment (Miles, 1996; Thomson, 1982).

Miles (1996), while defending the use of IQ tests, argues that the notion of a 'global IQ' score for dyslexic youngsters is not helpful as the dyslexic person's working memory problems put them at an immediate disadvantage. Rather Miles argues for the profiles of scores from the various subtests to be considered, and the pattern of strengths and weaknesses noted and used to inform planning.

The previously assumed link between intelligence and reading ability which has led to the assessment of dyslexia being based on an IQ/reading discrepancy, it seems, may now be outdated and have outlived its usefulness, being based as it is on the false assumptions previously discussed. However, two issues remain which still have to be addressed:

Is dyslexia different from general poor reading in any other ways, and what can be done to prevent failure to learn to read whatever the cause?

Frith (1997), who also considers that IQ definitions are problematic, argues that we require to consider the links between biological, cognitive and behavioural levels to gain a better understanding of dyslexia. Frith considers that dyslexia is considerably more than poor reading and argues that we need to establish a link between differences which have been found through neurological studies and cognitive features of dyslexia. Frith sees dyslexia as "a neuro-developmental disorder with a biological origin and behavioural signs which extend far beyond problems with written language" (Frith, 1999, p. 192).

Early findings from such studies which have stood up to subsequent replicative research are that dyslexic individuals show:

- slowness at automatic naming (Denckla & Rudel, 1976a and b)
- poor verbal learning and memory (Nelson & Warrington, 1980)
- poor non-word repetition (Bryant & Bradley, 1985; Snowling, 1981)
- poor phoneme awareness (Bryant & Goswami, 1986)
- difficulties in segmenting phonemes (Kamhi & Catts, 1986)
- difficulties in object naming (Snowling, Wagtendonk & Stafford, 1988)
- balance problems (Kelly, 1999; Nicolson & Fawcett, 1996).

As dyslexia is a term which generally refers to reading and written work, the question has to be asked as to whether or not it is desirable to identify children "at risk" of later failure before they even start to learn to read and write, or whether such early identification could become a "self-fulfilling prophecy" (Rosenthal & Jacobson, 1968). Expectations that a child may be dyslexic might indeed cause parents, teachers and even the child him/herself to lower their expectations.

There is also a possibility that attempts to identify dyslexia at too early a stage could lead to false positives, and unjustified alarm caused to parents. It has been argued however that it is better to overidentify children "at risk" of later failure in literacy learning in order that strategies can be put in place for **all** those identified (Nicolson, 1996; Singleton, 1994a & b). All such possibilities require thorough investigation.

Sub-groupings of dyslexia

Various researchers have given credence to a theory of dyslexia which recognises sub-groupings (Boder, 1971; Ingram, Mason & Blackburn, 1970; Johnson & Meiklebust, 1967; Stanovich, Siegel & Gottardo, 1997). These sub-groupings, it is posited, can if correctly recognised, suggest best methods of teaching (Boder & Jarrico, 1984). According to Aaron (1993) distinctions between different types of dyslexia are not trivial as management of the problems encountered should be dependent on cognisance being taken of the differences between such groupings. Sub-groupings include auditory and visual dyslexia, various patterns of reading difficulties such as dysphonetic, dyseidetic and mixed dysphonetic/dyseidetic (Boder & Jarrico, 1982), and could also include groupings of children for whom dyslexia is comorbid with other

types of difficulty, such as Attention Deficit with Hyperactivity Disorder (ADHD) or language disorder. Potentially it seems likely that many of these children may be misdiagnosed because of the existence of other factors and indicators which are initially more obvious to teachers and parents. Pumfrey and Reason (1991) consider that if children can be grouped according to qualitatively different characteristics, this could prove useful in determining teaching strategies. If indeed it is possible to identify distinctive groups of dyslexic children who require different teaching techniques, then it would be important to investigate this possibility at the early stages.

Auditory dyslexia could apply to a child who shows auditory processing deficits such as those described by Adlard & Hazan (1998). They describe dyslexic children who find enormous difficulty in discriminating between similar-sounding words such as 'smack' and 'snack' while other dyslexic children do not. Some have difficulty with auditory discrimination or repetition of similar sounding letters, such as 'b' and 'd' (Manis, McBride-Chang, Seidenberg, Keating, Doi, Munsun & Petersen, 1997). Others have difficulty in temporal order judgements as determined by a task where they have to decide whether a high tone is preceded by a low tone or vice versa, yet other dyslexic children have no such problems (Tallal, 1980). Such auditory processing difficulties have been found to be specific to linguistic stimuli and not to nonspeech tasks that make the same temporal processing demands. Such studies however have shown a lack of consistency across subjects which puzzles researchers generally.

Visual factors in dyslexia have received only scant acknowledgement over recent years with the emphasis being on phonology and other factors mainly in the auditory sphere (Watson & Willows, 1993). Visual dyslexia however is described as "the name given to a range of visual problems which prevent people from achieving maximum clarity when looking at print" (Jordan, 2000). The symptoms are described as:

- reading and writing problems, often disguised by avoidance tactics,
- physical signs such as rubbing eyes, headaches, closing one eye when reading,
- photophobia - dislike of the light, screwing up eyes,
- visual fatigue, particularly when using computers.

While Jordan argues that other problems may be responsible for these symptoms, any other factors should be eliminated through an eye examination.

There has been some relatively small amount of research into concepts such as the "visual deficit hypothesis" as a possible cause of dyslexia. This recent work has focused on two hypothesised pathways - the magnocellular and the parvocellular systems (Hogben, 1997). These pathways are distinguished part-way between the retina and the visual cortex where there are two distinct layers of large (magnocellular) and small (parvocellular) cells. The magnocellular system is considered to deal with transient visual stimuli, and the parvocellular with sustained stimuli. Visual input is considered to be analysed in a parallel way although there is some interaction between the two systems. Dyslexic children are regarded as having a deficit in the transient or magnocellular level. Lovegrove, Martin & Slaghuis (1986) have found differences which affect the contrast sensitivity function and visible persistence of dyslexic and reading difficulties children. Stein (2001) has found that dyslexic children have poor eye dominance and bases his findings on the Dunlop Test which can reveal poor vergence control and eye fixation control. Stein claims that transient deficits may exist in an auditory version of the transient system and that the same deficit is responsible for phonological problems too. This will however require considerable further research before any conclusions can be reached. Stein (2001) claims that visual dyslexia accounts for around 60% to 70% of all dyslexics. This figure cannot be substantiated, however, and the overwhelming amount of literature on phonology and dyslexia would not support their claim.

Boder and Jarrico (1982) describe three characteristic patterns which can be found in children with dyslexic difficulties. These are:

- dysphonetic - difficulty in integrating words and their component sounds, therefore has poor phonic analysis and decoding skills.
- dyseidetic - weakness in recognising whole word configurations and memory for letters, therefore will have difficulty in learning through 'look and say' methods.
- mixed dysphonetic and dyseidetic - difficulty in both development of sight vocabulary and phonic skills.

According to Reid (1997), these distinctions in groups of dyslexic children can facilitate teaching by an appropriate approach dependent on the strengths and weaknesses of specific children. Dyseidetic readers can gain skills more readily by phonic methods, while dysphonetic readers will be better at "look and say". For

children who have difficulty with both, the addition of a tactile-kinesthetic method to the reading programme can be of benefit. Other writers, however, point out that although the Boder test has been widely used, there have been serious questions raised about its reliability (Alexander, 1984; Reynolds, 1984; Willows & Jackson, 1992).

Stanovich, Seigal & Gottardo (1997) believe that the value of identifying sub-groupings of "reading disabled" children could potentially have considerable benefits, as these sub-groups may have different underlying cognitive deficits. Historically, the possible division of high IQ and low IQ poor readers seemed to offer different profiles of learning aptitude. Stanovich, Seigal & Gottardo however have found that if these groups are cognitively different, it is becoming increasingly unlikely that these children can be identified by examining IQ/achievement discrepancies. While Wong (1989) and others argue that while such views are extremely contentious to many professionals, nonetheless they serve to progress thinking in the field of dyslexia, and to advance our knowledge, and question our practice.

While acknowledging these facts, Pumfrey and Reason (1991) point out that qualitative attributes, such as those mentioned above, can be quantified and distinguish between 'monothetic' and 'polythetic' typologies. Monothetic typologies assume that any member of a specific group must necessarily have a unique set of attributes. Polythetic typology on the other hand groups together those pupils having the largest number of attributes or traits in common. Because of the difference between individual pupils, it is unlikely that dyslexic children could be said to comprise a monothetic group or fall into one neat category. As there are likely to be similarities in some areas and not in others, the usefulness of grouping pupils with certain characteristics will be limited and subject to the imprecise nature of empirical testing (Pumfrey & Reason, 1991).

Investigation of the significance of sub-groupings and their relevance to managing the difficulties, and to construction of appropriate policy could potentially have benefits for all. The relevance therefore of subgroups needs to be investigated with particular relevance to the early years covered by this study. Any findings have to be relevant to, and be able to fit into a local authority context.

Subgroupings of dyslexia will be further discussed in the light of findings from individual case studies and the other evidence gathered in the full course of the study.

This chapter has considered the implications of the term "dyslexia" and the nature of current definitions. These definitions are especially problematic at the early stages of a child's education when reading and writing skills have still to be taught. The research described in this thesis is set at the pre-school into primary stage and has been briefly outlined.

CHAPTER 2

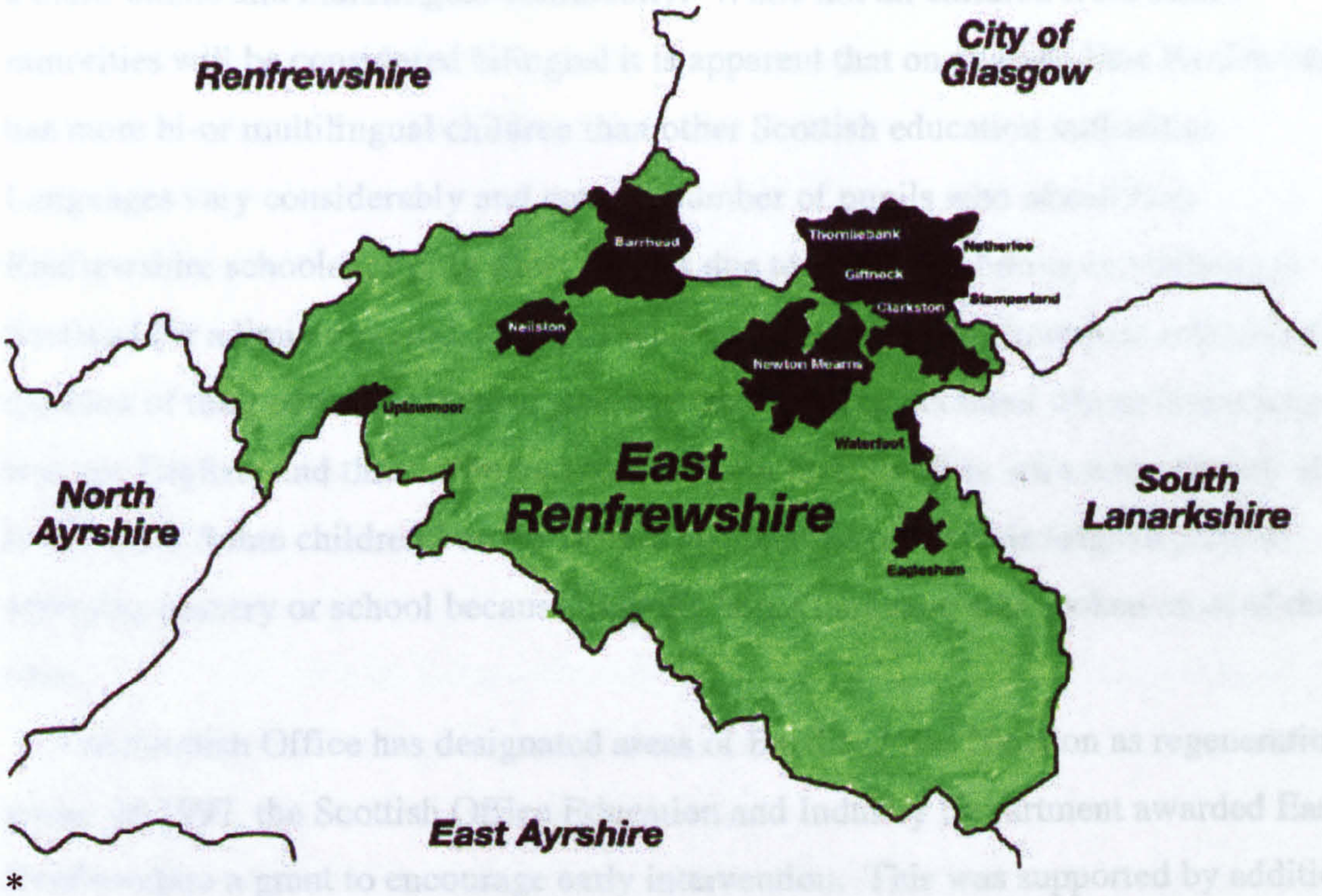
Background to Study

This chapter sets out the system of education with regard to dyslexia in the East Renfrewshire Education Authority. The Authority wishes its part in the study to be declared as part of the thesis. Demographic information is therefore considered at the outset of the study and reviewed as the research has progressed.

East Renfrewshire is a small education authority, even in Scottish terms: it is small both in terms of land area (17435.38 hectares) and in terms of total population numbers which were 85,385 according to the 1991 census (East Renfrewshire, 1999). Population numbers are growing however, and by December 1999, the population was stated to be 88,600 (East Renfrewshire Council, 1999). The release by the Registrar General of population projections up to 2016 confirms that the increase is likely to continue with numbers increasing by around 8.5% in that time (Andsell, 2000). Although the current population is not large, it has one of the most ethnically diverse populations in Scotland. In addition, East Renfrewshire manages Scotland's only Jewish primary school, Calderwood Lodge.

The East Renfrewshire area includes suburban areas of Glasgow, such as Thornliebank, Giffnock, Newton Mearns and Busby; rural villages, such as Uplawmoor and Eaglesham; and the town of Barrhead. The education department is responsible for seven secondary schools, their associated primaries, 24 in all, and one special school. At the start of this study in August 1997, there were four nursery schools, six nursery classes attached to primary schools and two children's centres. The Primary 1 roll was 1,209, and there were 785 nursery children in their pre-school year, and 296 three-year-olds. Overall, in September 1997, the total school pupil population amounted to 16,470. In April 2001, the number of children in Primary 1 was 1,175 with 1,130 children in their pre-school year. The total school population was then 17,200 including those in local authority nurseries.

Figure 2. East Renfrewshire and surrounding Council areas.



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The area is considered an affluent one, though there are pockets of deprivation. The Levern Valley (Barrhead, Neilston and Uplawmoor) is designated by the government as a Social Inclusion Partnership area, indicating problems of poverty and social exclusion. Overall, the percentage of pupils entitled to free school meals in 1996 was 10.5% for the primary age group and 11.4% for secondary schools, set against a national average of 22.8% and 16.6% nationally (Scottish Office Education and Industry Department [SOEID], 1997).

"According to the 1991 census, Scotland's population was about five million, 98.7 per cent of whom were white. Thus only 1.3 per cent of the population were from ethnic minorities" (Clark, 1997, p. 7). Of the total East Renfrewshire school population, 811 children were considered to be bilingual or multilingual in the school session 1995-1996. By 1997-1998, this had increased to 1136 constituting 7% of the school population. In the school year 1997-1998, there were a total of 38 different languages spoken in the East Renfrewshire area, rising to 51 languages in 1998-1999 with almost

10% of the school population then being described as bi- or multilingual. The numbers of bilingual children in East Renfrewshire are continuing to rise confirming the trend as a multi-ethnic and multilingual community. While not all children from ethnic minorities will be considered bilingual it is apparent that on average East Renfrewshire has more bi-or multilingual children than other Scottish education authorities. Languages vary considerably and cover a number of pupils who attend East Renfrewshire schools for only short periods due to a parent working or studying in Scotland for a limited period, to pupils who will be in East Renfrewshire schools for the duration of their education (those who had been born in Scotland whose home language was not English, and those who had come to join their families who were already settled in Britain). Some children born in Britain had learned no or little English prior to attending nursery or school because only the home language was spoken most of the time.

The Scottish Office has designated areas of Barrhead and Neilston as regeneration areas. In 1997, the Scottish Office Education and Industry Department awarded East Renfrewshire a grant to encourage early intervention. This was supported by additional finance made available by the council. This enabled schools to appoint early literacy coordinators in all of its schools to work alongside nursery schools in tackling literacy problems at the early stages through working with staff, parents and pupils, and the organisation of parent workshops on reading. A staff development programme was established to ensure that coordinators could meet together and plan strategies likely to be effective in promoting literacy. The initiative was officially launched on October 10, 1997, although by this time staff development had already begun.

In a presentation given to head teachers, and later to early literacy coordinators, the development of East Renfrewshire's policy on literacy at the pre-school stages was outlined and was to focus on:

- Rhyme, alliteration, and letter knowledge
- Recognition of initial knowledge of own name
- Use and purpose of print
- Use of books to find interesting information
- Hearing stories
- Exposure to a culture of literacy

- Boys and books
- Alphabetic principle
- Developing phonological skills
- Listening for enjoyment
- Listening and responding to music and rhymes
- Playing with words
- Playing with letters
- Analogy
- Teaching the concepts of print
- Understanding of some of the language of books
- Understanding of some of the language of print - page, cover, picture, word, letter, sentence .

(Reid, 1998)

These areas were encouraged through closer partnership with parents, literacy clubs and encouraging recognition of environmental print.

It was aimed to ensure that any gaps between the pre-school stage and primary education would be bridged by effective assessment and transfer of information (Dunlop, 1998). This philosophy was seen to fit well with the purpose of the current study.

Evidence from the studies of Goswami, Bryant and others suggests that the strategies outlined above benefit all children to some extent, and are therefore an admirable means of tackling literacy within schools from the earliest stages. Some of these areas have been discussed with reference to dyslexia and studies have been replicated. For example, Goswami has done considerable work on the role of analogy in learning to read (Goswami, 1992; Goswami & Bryant, 1990), and rhyme, alliteration and letter knowledge have received in-depth study (Bryant & Bradley, 1985; Goswami & Bryant, 1990).

There is at the outset of this study insufficient evidence to support the hypothesis that these strategies on their own will be sufficient to alter predispositions to dyslexia or to prevent later difficulties. The differences which such strategies can make for dyslexic children seem likely to be positive, but are unlikely to form a sufficient strategy to prevent dyslexia (if indeed this is possible) or to give the support necessary

to prevent the demotivating effects of failure from which dyslexic pupils usually suffer. This was to be investigated in the course of the study.

While there is much evidence that early strategies benefit the future for all children with identified needs, there is a need for research into how this should be managed. In particular there seems to have been very little research into the effects which being bilingual or multilingual might have on the learning of a child who is, or may be, at risk of school failure due to dyslexia.

There is in place in East Renfrewshire, an effective policy for the management of pupils with **identified** needs from the pre-school stage. Children with obvious physical difficulties, hearing, visual impairment for example receive specialist support, and advice is given to nursery and primary class teachers as well as support to parents. A pre-school assessment team (PreSCAT) made up of a multidisciplinary team of professionals and parents helps to identify problems and how these might be dealt with. Psychological services input and consultation is provided and medical supervision is readily available. However, in the field of dyslexia, there is little chance of identification at the pre-school stage and chances of identification in the first two years of primary would be considered unlikely at the outset of this study. This is because the conventional assessment procedures are in place whereby unless there is a two year gap between reading accuracy and chronological age, then dyslexia is unlikely to be considered.

It is possible that Equal Opportunities issues could be raised through failure to identify children with significant difficulties at an early stage when there is no such reluctance to identify more obvious problems as early as possible. The Fish Report cautioned that children with significant difficulties should have access to the whole range of opportunities in education which are available to all (Inner London Education Authority [ILEA], 1985).

The terms of the Education (Scotland) Act (1981) state that "It shall be the duty of an education authority to disseminate in their area information as to the importance of **early** discovery of special educational needs and as to the opportunity for assessment available"... under the Act (Education (Scotland) Act, 1981, Ch 58, 4. (1), s. 60 (1)). While the Education Act does not specify exactly what is meant by "early", it is clear that a value is placed on the "early" identification of difficulties.

Baseline assessment

Since the introduction by the Conservative government of national testing in 1991 (Scottish Office Education Department [SOED], 1991), considerable change has taken place in the purposes for which assessment is used. The concept of "value-added" (SOEID, 1996) means that the effectiveness of schools is now measured by the results of its pupils on standardised items of assessment. The current Labour government's policies on raising educational standards too are dependent on national means of achieving comparability within and between schools.

Value-added refers to the "difference a school has made beyond that which might be expected" (Lindsay & Desforges, 1998, p. 48). It means that an education authority can judge the effectiveness of its policies through standardised testing as a measure of progress made by children. There were originally two main purposes in the development of value-added measures: the general drive for "quality" and specific initiatives designed to correct "simple" evaluations of schools through ignoring factors which should be considered relevant to valid analysis of performance.

The increasing "marketisation of education" and the drive by successive governments to force accountability in a bid to "drive up standards" had a major role in the development of value-added.

Fitz-Gibbon (1995) considered that to be effective, value-added measures must be:

- readily understandable,
- statistically valid,
- not an undue burden, and
- cost effective.

Questions require to be addressed as to what **measures** might be used. Tymms (1996) examined the use of baseline assessment for value-added purposes. The origins of value-added lay in school effectiveness studies and later developed as part of accountability. Information had to be useful for both (Tymms, 1996; 1998). Value-added analyses then have to be of acceptable reliability and validity. Value-added systems must also be workable. Tymms however suggests that there are a number of advantages of running an information as opposed to an accountability system. "Whenever the results of an assessment are tied to something important outside the school the data must have a question mark over it" (Tymms 1998, p. 56). Baseline

assessment was to be administered in approximately twenty minutes and involved teachers in active examination of their pupils. This measure of value-added, in terms of comparing children's future progress between schools, is questioned by Tymms (1999) who considers that where the stakes are high it would benefit schools to manipulate scores in such a way as to give low baseline assessment results which could then artificially elevate later scores to seem to add greater value. Where scores are for internal use only within the school, Tymms sees no problems, but where the scores are to be used for comparison with other schools, either locally or nationally, the dangers have to be anticipated. Recent attempts to improve the credibility of the concept of "value-added" are meeting with very little approval when used for comparison between schools (Henry, 2001).

Nationally, just after the start of this study, the Labour Government of 1997 attested to its commitment to early identification and assessment of children with literacy difficulties. In a letter to the Dyslexia Institute, Prime Minister Tony Blair stated that measures would be taken to improve initial teacher training to help meet the literacy needs of children, and to raise standards with a view to ensuring that "these children" reach their full potential (Blair, 1997). In order to assist this process of improving standards, the Scottish Office made additional funds available to most authorities in Scotland.

"Early intervention" schemes have been put in place to identify children who are "at risk" of later failure in literacy learning, and to tackle any possible learning difficulties at an early stage. The basis of early assessment may be related to child development or to progress in basic educational skills such as numeracy and literacy. It may be curriculum-based on the 5-14 Guidelines. The purposes of baseline assessment are stated as:

- to inform the planning and resourcing of appropriate learning opportunities for all children;
- to identify children who may be at risk or may have special educational needs;
- to provide a baseline for each child against which future achievement can be compared;
- to provide information for schools and the education authority for management purposes;

- to inform local and national decisions aimed at raising levels of achievement, school improvement and school effectiveness (Wilkinson, 1998).

The second aim here of identifying children who may have special educational needs or be "at risk" must therefore serve to justify and facilitate the identification of dyslexia at the early stages if indeed this is possible, and give added stress to the investigation of the possibility that it is achievable.

Stierer (1990) expressed reservations about the assessment of children at an early age, and feels that there is an uneasy coexistence in devising a record that combines a profile for all with the special educational needs focus which is required by some. According to Gipps, Brown, McCallum & McAlister (1995):

> ...when teachers of young children assess those children, either individually or in small groups, it is almost inevitable that they will vary the way in which they introduce the task, whether they are given highly specific instructions or not; this is because what the teacher sees is not a testing situation but individual children whom she or he knows well and who need to have things explained to them in different ways, or presented in different ways, because of the children's own backgrounds, abilities and immediate past history. If this is the case, then it will not be possible (and, one might say, not desirable) to have standardized assessment performances with young children. This is a crucial issue if the level of difficulty then varies across children and tests are to be used for accountability purposes. (p. 186)

While these concerns are major, in the dyslexia context, baseline assessment has the potential to be a useful instrument. However as it stands at present in many if not all authorities, it lacks the detailed scrutiny of specific cognitive aspects which are dyslexia sensitive. It was therefore with this in mind that specific observational assessment items as a follow-up to baseline were drawn up by the writer and piloted in Primary 1 classrooms in East Renfrewshire in the autumn of 1999.

For children who may prove to be at risk of later reading failure due to dyslexia this intervention seemed likely to offer a "Best Value" approach - to intervene and remediate where possible at the earliest opportunity thus preventing emotional problems which might accompany later diagnosis of learning difficulties. The effort to also measure "value-added" was taken account of, through having a baseline measure of all children including those who show initial signs of special educational needs of a

physically non-obvious nature which previously might have been suspected, but would only have been identified at a later stage. Lindsay & Desforges (1998) describe a similar process for children without such special educational needs.

There are several possible ways in which an education authority can attempt to identify children who have special educational needs (including dyslexia) or are likely to be "at risk" of reading failure. A number of checklists exist which aim to identify children from precursors and underlying difficulties which may be present at the early stages in a child's life before the child attempts to learn to read (British Dyslexia Association, 1999a; Crombie, 1997a). There are also a number of tests which have been commercially produced as a result of research completed with young children who were later recognised as dyslexic. Examples of this are the Dyslexia Early Screening Test (DEST) (Fawcett & Nicolson, 1996) and the Cognitive Profiling System (Singleton, Thomas and Leedale (1996, 1997).

The CoPS1 computer program

The Cognitive Profiling System (CoPS1) is a computer program devised by Singleton, Thomas and Leedale (1996, 1997). It was developed in an effort to assess children who are likely to be dyslexic at an early age, before they have experienced feeling of failure within the school system. It was piloted and developed through the 'Humberside Early Screening Project' and involved twenty-four schools across Humberside. A sample of children were given the computer tests and then followed up over two to three years during which time their literacy and numeracy was assessed in detail (Singleton, 1996).

The program is made up of nine tests and claims to identify children from their pre-school year who may be at risk of developing later reading, literacy and information processing problems. The computer does the assessment and compiles a profile of the child, looking at skills such as auditory discrimination, phonological awareness and working memory, which are assumed to underlie the development of reading and written work.

The computer tests are presented as games designed to be fun for the children. The main character with whom the children identify is Zoid, a character from 'another world', who with his friends, present the tasks to each child. The program claims to

identify cognitive weaknesses, and also to identify the most useful strengths on which the teacher can base the teaching programme.

East Renfrewshire introduced the program into their Nursery and Primary schools in late 1997 and early 1998 in an attempt to identify children with any initial problems. The plan for East Renfrewshire was to identify those who may be at risk of later failure and put strategies and programmes in place to alleviate difficulties before children could detect that they were failing. As the program is relevant to dyslexia assessment and was being introduced at the time of the onset of this study, it was considered appropriate that a full evaluation of the usefulness of the program in the East Renfrewshire context be carried out as part of this study. This, it was hoped, would give further information and insight into the early identification of dyslexia, and would also enable the authority to avoid possible later litigation for failure to assess dyslexia at an early stage.

The Dyslexia Early Screening Test (DEST)

The DEST was produced by Nicolson & Fawcett in 1996 as a result of several years' research and testing, with norms derived from "nation-wide testing in 1995, involving over 1000 children in schools in Sheffield, London, Gwent and Kent" (Nicolson & Fawcett, 1996, p. xii).

It was produced along with the Dyslexia Screening Test (DST) as a quick assessment for dyslexia which could be used by teachers without necessarily involving educational psychologists. The DEST targets children in the early years (4 years, 6 months - 6 years, 5 months) and aims to identify those "at risk" of reading failure before formal reading and written work are in place, and to enable appropriate intervention to be put in place early. It can however be extended for children who are displaying significant difficulties in learning to read and write at a slightly later stage.

The DEST was investigated as a possible alternative to the CoPS1 program with a number of children, but whereas the CoPS1 program was used throughout East Renfrewshire, the DEST was used only for a few individual case studies. Its usefulness as a possible means of identifying dyslexic children at an early age was evaluated by the writer. See Chapter 10 and accompanying appendix material.

East Renfrewshire's early intervention programme

In place in East Renfrewshire at the outset of this study, was a policy of early intervention at the Primary 3 (age around seven years) stage, renamed Primary 3 Screening to avoid confusion with the Government initiative for early intervention at pre-school and early primary stages (McMillan & Leslie, 1998). This has proved effective and reliable in identifying pupils who exhibited signs of dyslexia, but by the time intervention took place, there was already a significant gap between performance in reading and written language, and ability as identified through pupils' oral skills and oral problem solving abilities by class teachers.

Individual authority policy requires to be matched to population and to be suitable for the area in which it operates. Education authorities cannot rely on the size of an authority allowing for personnel and resources to move to follow children with special educational needs, in particular dyslexia. Small authorities are unlikely to have sufficient budget to allow flexibility of funding to immediately give additional specialist teaching support to children identified. The earlier therefore that needs are identified, the more predictable will be the level and type of support which can be put in place. The earlier problems are overcome, the less will be the psychological damage and demotivation which children are likely to suffer as a result of failure, and therefore the less will be the effects at a whole-school level (Frith, 1999). In view also of East Renfrewshire's inclusive education policy (East Renfrewshire Council, 1997), strategies and means of identification need to be in place for all children with identifiable needs at an early stage.

In September 1999, the Executive Committee for Education of East Renfrewshire Council approved the Council's dyslexia policy in order to clarify assessment and provision for dyslexia within the authority. This was as a result of approximately eighteen months of work done by a Working Group chaired by the writer. Synopses of the main document were made available at the request of teachers, and leaflets for parents drawn up. See Appendix 3.

This chapter has set the current study of early dyslexia in the East Renfrewshire inclusive educational context which is then set against a background of the national Scottish education system. Demographic information has been given along with policy.

CHAPTER 3

Methods of Investigation

This chapter sets out the methods used to study dyslexia at the early stages in East Renfrewshire. It explains the methodology of the study, the general approach to answering its research questions, and also the specific devices through by which the methodology was realised. The chapter will guide the reader through quantitative and qualitative methods of data gathering. Also using case study illustrations, the aims and philosophy of the current study are contextualised.

Philosophical background to the enquiry leading to methods of investigation

According to Bertrand Russell (1999) "Philosophy has value not because it is likely to provide definitive answers to the questions it asks, but rather because the questions themselves are profound and important ones". Russell views philosophy as being of value largely due to its uncertainty. He feels that it is philosophy which frees one from the prejudices and "dogmatic assurances" which are derived from common sense alone (pp. 16-17).

Accepting this view makes it essential to look at the subject matter from all viewpoints - to assess findings from the whole range of perspectives - to therefore accept that there will be a range of views, indeed a number of different answers to what may appear the same question. "Equal sticks and stones sometimes, being the same, appear equal to one person and not to another" (Plato, Phaedo 74b-c).
Plato is here alluding to familiar facts about perceptual perspective - the fact that a pair of equal objects will look equal to a person seeing them from one standpoint, whereas to someone looking from another viewpoint, they will appear unequal.

This study sets out to tell a story from a number of viewpoints - the children themselves, their parents, teachers, psychologists and of necessity, the researcher's own viewpoint which will become an amalgam of prior knowledge and experience, reasoning and the results of this research. The path chosen is not that of conventional pre-test/post-test research, although this has been used as a convenient vehicle for emergent theory which enabled the study to have a manageable sense of direction whilst respecting the complexity of the circumstances within which it took place.

Plato inherited from Socrates, his teacher, the method of seeking the truth by exposing beliefs to the systematic cross-examination of interlocutors. Lee describes Plato's "simile" of the cave as demonstrating the ascent of the mind from illusion to pure philosophy, and the difficulties which accompany this move. Moral and intellectual opinions, he contests, often bear as little resemblance to truth as the average television programme does to real life (Lee, 1987 translation, pp. 255-264).

Plato's cave is open to the daylight and is inhabited by men who have been prisoners there since their childhood, their legs and necks fastened in such a way that they can only look forward and cannot turn their heads. Behind them and higher up, a fire is burning. Between the fire and the prisoners and above them runs a road which cannot be seen directly. Along the road, men are carrying various things including statues of men and animals. Some of the men are talking. Because the prisoners cannot turn their heads, their view of the road is restricted to the shadows they see reflected on the cave wall. Inevitably the prisoners are unable to discriminate between the real men and the statues, and it would be assumed that they would take the figures all to be real. The shadows therefore are assumed to be the whole truth. However when released from their shackles and taken outside into the sunlight, they would be unable to see anything clearly for a time due to the intensity of the brightness. Gradually, the ex-prisoners would be able to look at reflections, and then at the objects and other men, and finally at the sun itself. Plato's analogy takes the reader from the stage of illusion through a stage of belief, reasoning, intelligence to reach a vision of the "form of the good" which Plato believes to be true reality (Plato, Stephanus, 1578/1987, p. 259).

There are areas which need to be explored which go beyond the scope of this investigation. Theory cannot ignore those areas, and research will continue in an attempt to reach a higher level of reasoning and intelligence in the chosen field. The "form of the good" or true reality can only be subject to change as a result of the advancing body of knowledge which grows and develops with every study which is published. A positivist approach necessarily sets limits on the illuminations which it is wise to do in the circumstances under which the study is being conducted. This story will come to an end when the results are achieved and the data of the study are complete. "The true reality", as it is perceived however, must be a response to the current level of knowledge which has been achieved.

Aims of the Investigation

The original stated aims of the study were to understand the relationship between the prediction of dyslexia in pre-school and early primary school children and the development of education authority policy for such children. Issues of provision, practice and management could then be determined more appropriately.

Sub – aims

A number of sub-aims were included. These were stated as follows:

1. To evaluate the usefulness of current predictors of dyslexia in young children, and investigate the effects of early intervention.
2. To establish if the identification of sub groupings of dyslexia has a value for the development of policy.
3. To develop understanding of the response to dyslexic children in Scotland today as a policy issue.
4. To develop a model of management tailored to fit the East Renfrewshire population, taking account of local characteristics including the number of children who speak English as an additional language.
5. To identify effective management and teaching strategies for the development of language skills likely to enhance the learning of dyslexic children, but which will also potentially enhance the learning of all.

A further sub-aim became necessary in the course of the study:

6. To investigate definitions of dyslexia with a view to establishing a common understanding of the term.

The structure of the thesis is defined in the conventional paradigm of evaluation, research and re-evaluation.

Methods of enquiry

Methods of enquiry must be determined by the subject under investigation. Mouly (1978) sets out a means of working in a search for "truth". He describes three broad headings: experience, reasoning and research. These categories are inextricably linked

in Mouly's model and should be seen as overlapping and complementary in seeking to solve complex modern problems. Where solutions to problems are more complicated than can be solved by personal knowledge alone, it is necessary to turn to the experience and knowledge of others. The influence of others can further determine hypotheses, and pose new lines of enquiry which will **then** affect the line of enquiry taken by research. The current investigation draws on the experience and knowledge of others through techniques of structured interviewing and questionnaires. The research and reasoning of others is described and referenced in the literature referred to throughout the study. In addition, examples taken from individual case studies will illustrate points being made and give additional validity to the study. This in turn enhances the current reasoning and research. According to McKernan (1996):

> The case study has become a research technique that is much celebrated in scientific research, as witnessed by its increase in such diverse fields as anthropology, education, law, social work, medicine, psychology and psychiatry, to name but a few. There is growing evidence for its use in educational research work. (p. 75)

Mouly (1978) describes a process or reasoning which combines Aristotelian deduction with Baconian induction:

> This is a back-and-forth movement in which the investigator first operates inductively from observations to hypotheses, and then deductively from these hypotheses to their implications, in order to check their validity from the standpoint of compatibility with accepted knowledge. After revision, where necessary, these hypotheses are submitted to further test through the collection of data specifically designed to test their validity at the empirical level. This dual approach is the essence of the modern scientific method and marks the last stage of men's progress toward empirical science. (p. 10)

Taking account of Mouly's suggestions, the use of experimental procedures have been adopted where appropriate, along with techniques of emergent theory to give the study both qualitative and quantitative dimensions. These procedures are described in detail at relevant points in the ensuing chapters.

Qualitative methods of **analytic induction** have been used to formulate and test hypotheses. The data obtained have then been used to develop and progress the theory.

Grounded theory arises out of and is of direct relevance to policy, practice, provision and management of dyslexia from pre-five into primary: According to Glaser,

> While in the field, the researcher continually asks questions as to fit, relevance, and workability about the emerging categories and relationships between them. By raising questions at this point in time the researcher checks those issues while the data is still accessible. As a result of constant checking of data, the analysis and the data are combined till the best explanations are obtained. (Glaser, 1978, p. 39)

To ensure that the ultimate theory is grounded, the investigation must be approached with complete openness. The theory therefore emerges as the study progresses. (Frankfort-Nachmias & Nachmias, 1996)

Qualitative data

Lincoln and Guba (1985) argue that the objective-subjective debate associated with the quantitative-qualitative divide might be more appropriately viewed as perspectival. Because the subject under investigation is, to some extent, controversial and can be approached from a whole range of different perspectives, much of the data obtained will of necessity be qualitative in nature. What distinguishes qualitative research from other subjective information is the detailed analysis to which the qualitative data are subjected and the rigour with which this is done.

In addition, the notion of "grounded theory" (Henwood & Pidgeon, 1995; Strauss & Corbin, 1990) suggests that local contexts and accounts may form the grounds for adopting the "goodness" of particular research. Grounded theory is theory that is inductively derived from the study of the phenomenon it represents. Methodology in this approach involves specific analytic strategies formulated for handling, and making sense of, initially ill-structured qualitative data. Qualitative data generate an array of recurring themes, topics and patterns grounded in interviews, documents, and other sources of data. The volume of qualitative data gathered provides significant indications of recurring patterns (Glaser, 1998).

Through interview data gathered from pupils, their parents and head teachers, various perspectives could be considered and a large volume of qualitative evidence was accumulated. Together with questionnaire data gathered from educational psychologists and further information from the study of individual case studies, the

qualitative was considered alongside the quantitative to give a clear picture of the East Renfrewshire situation with respect to dyslexia. Much of the qualitative data were analysed by the use of the Non-numerical Unstructured Data Indexing Searching and Theorizing (NUD*IST) software package. The package, according to the on-line guidance, is designed to create "an environment to store and powerfully explore data and ideas, to minimize clerical routine and maximise flexibility, and to discover new ideas and build on them" (On-line Help, p. 1). The process of information gathering and exploration of the data will be described at appropriate points in the ensuing chapters.

Quantitative data

Where a large volume of data has been gathered, techniques of statistical analysis have been adopted when appropriate to give additional validity and to establish the level of significance of the findings. Throughout this study, whenever it has been possible to obtain quantitative data either to add weight to qualitative data, or to provide evidence in their own right, quantitative data have been used. At times this may have resulted in somewhat unconventional techniques and methods of enquiry. However, these will be explained and justified at relevant points in the course of the thesis.

Through two large surveys of the East Renfrewshire population of parents of children in their pre-school and Primary 1 years, a clear picture was obtained of many factors which might have influenced childhood development. These surveys were carried out in 1997-1998 and 2000-2001. A total of 2305 questionnaires were analysed and their results reported. Data analyses were aided by the use of the Statistical Package for the Social Sciences (SPSS) for Macintosh computer.

Through the survey data and longitudinal studies of dyslexic East Renfrewshire children, early literacy habits together with possible hereditary factors were investigated to establish if there were matters which the education authority could influence with particular regard to dyslexic children. Full details of the surveys are given in Chapter 6 and the accompanying appendix material, with further discussion in the latter chapters of the study.

Additional quantitative material was obtained from questionnaires completed by East Renfrewshire educational psychologists, and from structured interviews conducted with

pupils, their parents and head teachers. Quantitative data are also taken into account in the evaluation of the various assessment techniques which were considered. Where quantitative data were large enough, the power of statistical analysis was used to establish a significance to the findings. Further detail is given at appropriate points in the chapters which follow.

Multimethods

No one "pure" method of enquiry has been adopted, but rather a combination of research methods (bricolage) have been brought together to give the benefits of a range of appropriate techniques. Robson (1993), like others discussed, recommends the use of a variety of different methods in seeking to address a range of issues:

> It is impossible to avoid the confounding effects of methods on our measurements. With a single method, some unknown part or aspect of the results obtained is attributable to the method used in obtaining the result. Because we can never obtain results for which some method has not been used to collect them, the only feasible strategy is to use a variety of methods. (Robson, 1993, p. 290)

Through the use of a **complementary purposes** model of addressing specific research questions, Robson argues that any error due to methods can be "averaged out" when multiple methods are used. Multiple methods also enhance interpretability in that qualitative and/or narrative accounts can be given added validity by reference to other supportive quantitative data. Through multi-method enquiry, threats to validity of the research methods are minimised.

In acceptance of Robson's views, it is seen to be neither practical nor desirable to restrict the methods of enquiry of this research. Philosophically, Stenner and Brown (1998) argue that there is little to be gained from "rehearsing the merits of qualitative over quantitative approaches...both approaches are ways of producing coherence between otherwise disparate entities" (Stenner & Brown, 1998, p. 174). The study therefore adopts a multimethod approach as a means of maximising the validity of the research. The methods used have been described and analysed under the various chapter headings which follow. A number of hypotheses are investigated and these are set out at appropriate points in the chapters. Literature searches were made at the outset and at various points throughout the study using academic databases and through access to the

Internet. Initial literature has been added to throughout the duration of the research and references added to the thesis where appropriate. While there was a multitude of literature regarding policy, provision and practice for dyslexia, there was nothing specific to the stages investigated here. Articles on management referred to case management of individual pupils rather than to the management of policy, practice and provision. The literature evaluated in the course of the study is considered at the most relevant stages in the research.

Much of the data gained in the course of the study is qualitative and difficult to structure. While a grounded theory approach was originally adopted, a wholly grounded theory approach would have denied access to much of the richness which could be obtained through a combination of both qualitative and quantitative methodologies. It would have stopped the enquiry when no new data seemed to be emerging. The writer could not be certain on the point when no new data would emerge, and therefore continued beyond this point to achieve as full and representative a picture as possible. The fact that data were not always new became irrelevant, and access to the quantitative elements of the data increased in importance.

The ensuing reports outline how and why the study does not follow a conventional line of enquiry but includes what the writer considers to be the most appropriate methodologies and adaptations to these. The study therefore has not determined the methodology, but the methodology has been adapted throughout to give the fullest possible picture. This use and adaptation of appropriate methods to suit the real world context is advocated by Murray & MacKay (1998), Robson (2000), and Lingbiao & Watkins (2001). Thus, for example, a questionnaire survey was used to gain as much information as possible from a large group of parents, and individual case study reports were used as a means of illustrating and validating data obtained elsewhere. Structured interviewing gave opportunities for probing and gaining a wider understanding of the concept of dyslexia and associated matters. Full detail of the methods used and their justification is given at appropriate points in the ensuing chapters.

This chapter has broadly outlined the methods which will be used to investigate policy, practice, provision and management of dyslexia from pre-school into primary. It has delineated the philosophy behind the study and briefly shown the methods of enquiry to

be employed in eliciting both quantitative and qualitative information. Data analyses including the use of computer technology will be described later. The strengths of the various techniques used will also be discussed along with any methodological difficulties in specific chapters.

CHAPTER 4

Possible Precursors and Indicators (Possible Predictors) of Dyslexia in Young Children

This chapter will consider possible early signs which might indicate dyslexia at an early stage of a child's education in nursery or Primary 1 and consider the philosophy behind the current study of early identification, its efficacy and its procedures for development.

Because dyslexia has traditionally been defined largely in terms of discrepancies (Nicolson, 1996; Nicolson & Segal, 1996), it presents problems for any who hope to define dyslexia in young children who have not been at school for sufficient a time for discrepancies, particularly chronological age/reading age discrepancies and chronological age/spelling age discrepancies to develop. And yet it is for the very reason that we do not wish discrepancies to develop that we seek to investigate and research this very topic. We hope to predict those who are likely to develop dyslexia in order to prevent it happening or to minimise the harmful effects which often accompany difficulties in learning.

Popper (1957) distinguishes between what he calls "prophetic" and "technological" or "conditional" predictions. Prophetic predictions are beyond our power to prevent, and into this category would come typhoons and other natural disasters. "Technological" predictions on the other hand tell us what we must do to achieve something. Popper's own example of a conditional or technological prediction is the statement that if we want to build a shelter to withstand a typhoon we must build it in a certain way. In making this distinction Popper is criticising the notion of history as the inevitable unfolding of "prophetic" predictions. (pp. 43-44)

There are two salient points which can be taken from Popper's distinctions. Firstly we need to consider whether dyslexia can be a prophetic or a technical prediction. Do we accept the inevitability of dyslexia in the sense that if it is going to happen, it will happen, or do we consider we can put in place measures which will prevent it happening, or at least minimise the effects of it happening if indeed there is an inevitability factor? If we accept the prophetic version of dyslexia, as Francis Galton

(1869) did of intelligence in stating that intelligence is governed by hereditary constitution, then we accept that education at the early stages at least has little to offer the dyslexic child. For too long, the process of awaiting the inevitable in terms of the unfolding of the dyslexic condition has held true. The parents of dyslexic youngsters have been told at an early age that it is too early to assess the child or it is too early to do anything about it. There is however no evidence whatsoever that deliberate action taken in the light of understanding cannot affect change.

Popper would, one assumes accept this philosophy, as he argues that the progress of our knowledge is something we can never predict, except to say that "we cannot anticipate today what we shall know only tomorrow" (Popper, 1960, p. x).

While dyslexia's main feature is a difficulty in learning to read, it can be seen from Chapter 1 and the checklists in the policy document contained in Appendix 3 that there are a number of factors which are associated with dyslexia which suggest that it is a "pattern of difficulties" (Miles, 1983a, 1993; Nicolson & Fawcett, 1996) rather than a unitary condition. Some of these difficulties are likely to be present, and apparent in young children (i.e. prior to attendance at school, and in the early stages of a child's first year in primary school).

However from some current definitions, such as that of the British Psychological Society definition described in Chapter 1, it can be seen that dyslexia is considered in terms solely of "accurate and fluent word reading and/or spelling" and on "literacy learning at the 'word level' and implies that the problem is severe and persistent despite appropriate learning opportunities" (BPS, 1999, p.18). At the early stages of education - nursery and early Primary 1 - it would therefore be unlikely that any child could be identified due to lack of "appropriate opportunities" to learn to read and spell words. This particular definition in practical terms denies the existence of dyslexia for children at an early stage of education.

Plato distinguishes between the Forms of "existence" and "difference". He asserts that,"things which are not (are different from other things) nevertheless are (exist)." It is pointed out that "that which is not" is different from "non-existence" and from the "non-existent" both of which are covered in the phrase "the contrary of what exists (or of existence)". Existence and difference are "two Forms, both extending over the whole field of reality and everywhere blending" (Cornford, 1935, p. 295).

Accepting this argument, it could be contended that dyslexia "exists" at an early stage, but is "different" from what it is or will be at a later stage when the child has attempted to learn to read and write and spell. If dyslexia exists in older children and adults, and is genetic in origin, then one must accept its existence in the very young too. Only its manifestation will be different. Assuming then that it exists at an early stage, one can then turn to the means of identifying what will require to be done to make a difference to the likely prognosis for the child.

A number of current assessment tools claim to identify dyslexia early. Investigation is required to establish if they do so with reliability, and if so, if they could feasibly be used in a local authority context by early primary and nursery class teachers. This would be required if they were to be a useful tool for the early identification of all children who may be at risk of later failure when learning to read.

Currently, the main predictors of dyslexia are viewed as:

- ***familial incidence*** (De Fries, 1991; De Fries, Alarcón & Olson, 1997; Miles, 1983a,1983b, 1993; Ott, 1997)

While there is little doubt that heredity is a reliable factor to be considered in the early identification of dyslexia (De Fries, 1991), it is often the case that teachers will have no knowledge of other family members who may have been dyslexic unless older siblings had particularly severe problems. Parents, although they may have had difficulties themselves at school, may never have been formally identified.

- ***short term memory problems*** (Miles, 1983a, 1983b, 1993; Thomson, 1982)

This is generally evident when a child is asked to repeat a short sequence such as numbers or letters, or to follow a few simple instructions. It will also be apparent in attempts to solve mental arithmetic problems, though this is not generally requested of children before they reach school age.

- ***sequencing problems*** (Miles, 1983a, 1983b, 1993)

This is apparent as a child has difficulties in learning sequences such as the alphabet, the order of months in the year and multiplication tables. All of these relate to children of school age, but difficulties may be detected by observing children doing up buttons in sequence or in following a short sequence of instructions in a given order. This inevitably relates also to short term memory problems, as without efficient working memory, children will be unable to remember sequences anyway.

- ***phonological awareness*** (Bryant & Bradley, 1985; Denckla & Rudel, 1976a; Denckla & Rudel, 1976b; Goswami, 1992; Goswami & Bryant, 1990; Snowling, 1987; Snowling & Nation, 1997)

Difficulties in phonological awareness skills such as rhyming, use of analogy, alliteration, phonological coding and phoneme segmentation, and the retrieval of phonological name forms are well documented in the literature with considerable numbers of experiments having been conducted between dyslexic children and reading age matched controls.

- ***creativity***

There is a body of evidence which suggests that there may be a link between creativity, artistic talent and superior visuo-spatial ability and people with dyslexia (BPS, 1996: Everatt, Steffert & Smythe, 1999; Stein, 2001; West, 1991). There is however little or no documented research as to whether this may be considered a relevant factor in identifying those at risk of failure in literacy due to dyslexia at the pre-school or early years stages. However it should be possible to evaluate this possibility alongside others to establish if indeed dyslexic young people are more creative, artistic or have superior visuo-spatial skills, or if perhaps these skills which have been identified in adults with dyslexia may be a result of dyslexia, rather than an early indicator. While many of these indicators are looked for at a later stage, they may be present also at an early stage.

Up until the present, much of what has been claimed to refer to dyslexia at the early stages has been a matter of opinion, and has related to longitudinal information which looks at the skills and difficulties of older dyslexic children and relates these back to the difficulties these children had when they were younger. They are based on a false belief that correlation means causation, and there is considerable ambiguity as to what has actually been established by the studies.

Plato, his predecessors and contemporaries were much occupied with ambiguities. One such ambiguity which preoccupied Plato was that of opinion and knowledge. Because there is no separate verb in Greek meaning "to exist" as distinct from "to be", Plato argues that there requires to be a distinction made between opinion and knowledge. The field of knowledge, he argues, is what is, and opinion lies somewhere between knowledge and ignorance (Stephanus, 1578/1987).

There are few studies which consider a whole group of children, with and without learning difficulties, and track these children to establish if some of the children who have no learning difficulties had early problems as well: in which case, the "difficulties" may be nothing more than developmental delay, and their relevance as indicators of dyslexia may have little if any validity.

If, however, indications (signs of dyslexia) are present, then it may be possible to identify them before children learn to read and write. This will be investigated in the course of the study.

The bilingual dimension

Because bi- or multi-lingual children in the course of learning English as an additional language often display similar characteristics to dyslexic children, it is important to take account of this possible confusion so that dyslexic bilingual children are not denied appropriate support. Bilingual children may display some of the above indicators while they are in the process of learning English for a number of reasons. Phonological awareness can cause difficulties in English because of the interference of the home language. In some languages the same sounds do not exist as there are in English. Skills such as rhyming and therefore awareness of rhyme may not be required and are therefore not considered to be of value. Sequencing too can be a problem, especially in languages which do not read and write from left to right. What may seem like a sequencing error may be due simply to some confusion over which language the child is attending to at the time (Sunderland, Klein, Savinson, & Partridge, 1998; Sunderland, 1999). Grammar, syntax, and punctuation, while these may differ from English, are unlikely to be apparent indications of difficulties at the very early stages though word order could become muddled due to different conventions.

In some cultures with oral traditions, skills of reading and writing are not considered to be of value. Families who may have recently come to live in Scotland may therefore still be coming to appreciate the importance of reading and written elements of literacy in the Scottish cultural tradition, and how this has grown rapidly over the last hundred years.

Prognosis

Whatever the factors which may predict dyslexia, there is little doubt that for those children who are recognised as having difficulties with reading at the early stages, the outlook is good. The tools which claim to identify difficulties may have changed over the years, but few doubt Boder's (1971) belief that "when proper diagnosis is followed up with appropriate remedial programs the prognosis is good for overcoming the reading disability for most dyslexic children...". (p. 293) It is therefore important that any tools that can identify dyslexia before it becomes a problem should be investigated. This study sets out to investigate such tools and their usefulness to an education authority.

Karl Popper (1960), however, cautions us to be wary of tools that claim to predict, as they may in an extreme case **cause** the happening they predict: "the happening may not have occurred at all if it had not been predicted" (p. 15). This possibility must be borne in mind.

This chapter has looked at the research into early dyslexia, the philosophy behind this study and some of the problems which may be faced in the development of policy, practice, provision and management of dyslexia at the earliest stages of a child's education.

CHAPTER 5

Recent Developments in the Early Detection of Dyslexia

This chapter considers recent research into dyslexia at the early stages and the development of assessment tools for dyslexia as it presents in the early years of a child's education. The main elements of the Cognitive Profiling System (CoPS1) computer program and Dyslexia Early Screening Test (DEST) are outlined.

Overview

While the desirability of detecting dyslexia at an early stage is agreed by many (Augur, 1996; Borstrom & Elbro, 1997; Lyytinen, 1997; Olisa & Campbell, 1999) the reliability of such early detection has to be in question (Torgensen, Wagner & Rashotte, 1994). Tests such as those described in these chapters are still in their early years of development and as the writer's research into the CoPS1 computer program exemplifies in Chapter 8 may not currently be reliable, although the claims made far exceed this. All such tests and assessments require to be evaluated and consideration given to the various areas of likely problems and how the outcome for children who show signs of dyslexia can be affected. In devising a model of intervention, it will be important to take all relevant factors into account.

Reading and pre-reading

While the implications of dyslexia may be considerably greater than its effects on reading and pre-reading, nonetheless it is on these elements of dyslexia that most of the definitions and studies concentrate. The Penguin Dictionary of Psychology describes the word "reading" as "the process by which information is extracted from written or printed text " (Reber, 1995, p. 638). Reber states that reading is dependent on an orthographic process (the relationship between the marks on the page and the sounds of the spoken language in an alphabetic system such as English, and the marks on the page and the word or concept in a logographic system such as Chinese) and a phonetic/ acoustic process and also a semantic/syntactic process. It is the relationship between these interacting factors which Reber considers to have caused many of the problems involved in the teaching of reading which are derived from "our failure as yet to

understand fully these various processes" (Reber, 1995, p. 638). It would seem that, even though there has been a considerable body of research into reading over recent decades, we still have a considerable way to go to fully understand what happens when we read, and hence, what happens when young people fail to learn to read.

Huey's (1908) statement brings home to us just how little progress has been made during the twentieth century towards a complete understanding of the reading process: "To completely analyse what we do when we read would almost be the acme of a psychologist's achievements, for it would be to describe many of the most intricate workings of the human mind, as well as to unravel the tangled story of the most remarkable specific performance that civilization has learned in all its history" (Huey, 1908, p. 6). It would seem that we still have a considerable way to go before we can claim to be able "to completely analyse what we do when we read". More so we still have a considerable way to go before we can claim to be able to completely analyse what dyslexic children do when they fail to learn to read.

In Adams' book, Beginning to Read: Thinking and Learning about Print, which reviews, evaluates and integrates the vast and growing body of research and its implications for children learning to read, headings such as "Words and Meanings: From an age-old problem to a Contemporary Crisis" (Adams, 1990, p. 1), Concerns and Conflicts (Adams, 1990, p. 1), tell us that all has not been unity and harmony in the field of reading research. It is with an awareness of the opposing views and controversies that the writer enters the debate from the particular perspective of the initially failing reader - the dyslexic child.

Frith (1985) presents a developmental model of the reading process consisting of:

1. **Logographic Phase** when a child recognises a word as a familiar unit by association of the word with general graphic features.
2. **Novice Alphabetic Phase** when the child uses letter names or sounds along with context to identify words.
3. **Mature Alphabetic Phase** when child can sound out words using their sound-symbol correspondence.
4. **Relational Orthographic Phase** when child is beginning to learn spelling patterns and relationships. To master this stage, the child must coordinate the sounds in a word, the letter patterns in the word, and the meaning of the word.

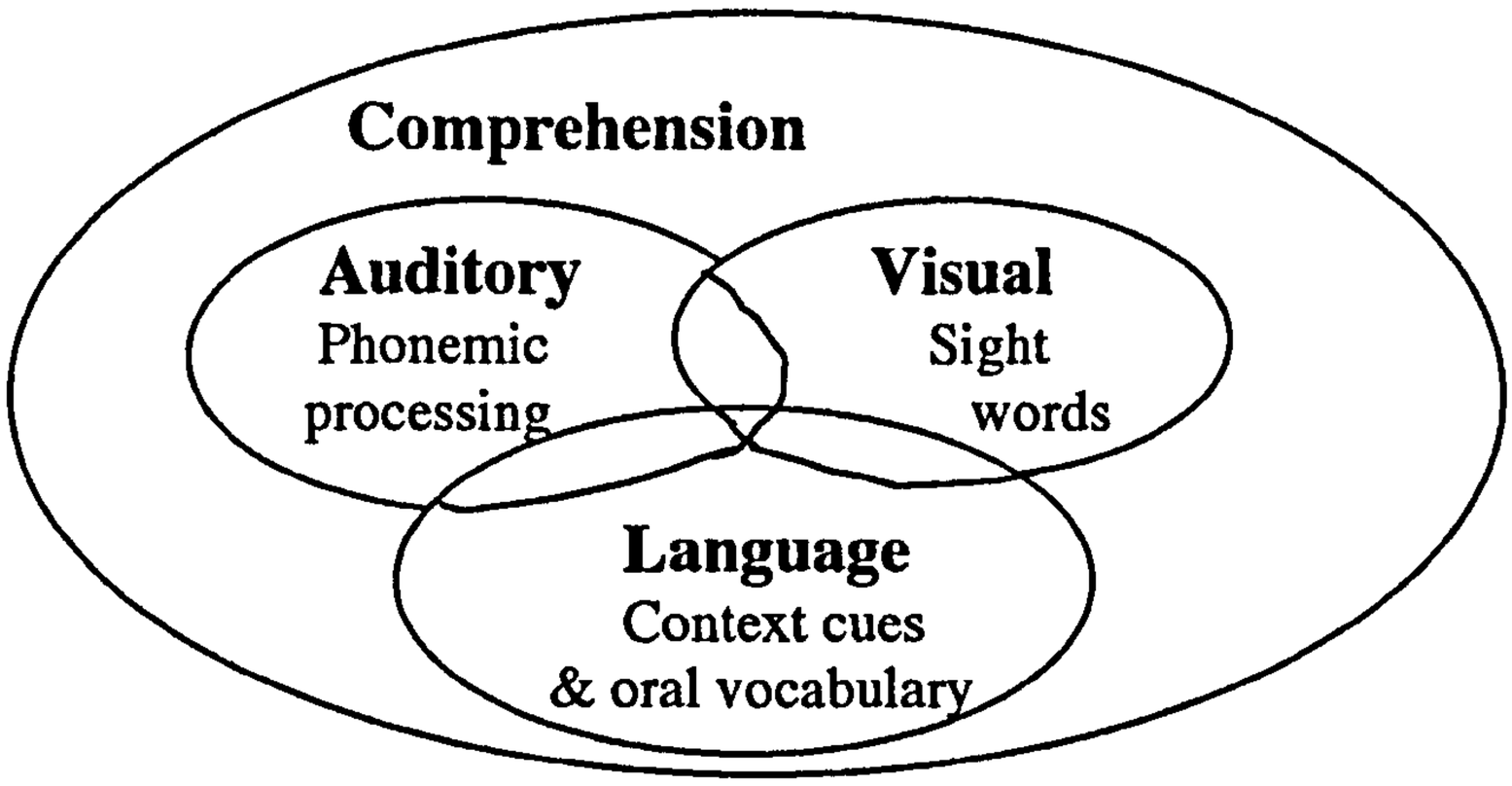
5. **Hierarchical Orthographic Phase** when child starts to understand that words comprise one or more morpheme. Decoding starts at the root of the word and then considers prefixes or suffixes which may be added.

This developmental model sees the child as progressing through each of the stages. It has been argued (Reid, 1997) that dyslexic children may find the alphabetic stages problematic as they are unlikely to possess the necessary skills in phonics to be able to coordinate letters to sounds and thus progress to automatic word recognition through speedy recognition of letter shapes and patterns. Some recent work in this field recommends that children who find the alphabetic stage difficult should not be taught letter names at least until the second year of teaching (McGuinness, 1998). Detection and identification of dyslexia at this stage therefore should be readily acknowledged. Frith argues that writing helps the child to form the link to letter shape and pattern from the sound. This is supported by the acknowledgement that children require visual strategies for reading, but phonological strategies for spelling and writing (Bradley & Bryant, 1991).

Goswami (1999b) acknowledges that learning to read requires a child to analyse spoken language at the phoneme level. Because alphabetic letters correspond to phonemes, learning the alphabetic code teaches a child that words are represented by sequences of phonemes. Children learning to read "transparent" alphabetic codes (i.e. those which have a one to one relationship between letter and sound (e.g., Spanish)) learn to read quicker and more fluently than those learning a non-transparent language such as English (Frith, Wimmer & Landerl, 1998; Wimmer & Goswami, 1994). Dyslexic children learning in a non-transparent alphabetic code learn particularly slowly and disfluently. Dyslexic children, therefore, learning to read in English in Scotland, may have considerably more difficulty than Spanish dyslexic children learning to read Spanish in a Spanish school (Spencer, 2000). Findings from studies conducted in this country may therefore not apply equally to other cultures and languages.

Bell (1997) illustrates the reading process by referring to a leitmotif of three interlinked elements representing the essential aspects of literacy.

Figure 3. Illustration of Bell's view of the reading process (from Evely, 1998).



Bell argues that all three elements must be tackled in an interactive way, with each enhancing the learning of the others. Bell cautions of the dangers of developing any one element without the others, a factor which the structured bottom-up phonic programmes recommended for dyslexic children do not always acknowledge.

Recent studies have however given considerable weight to the importance of phonology and phonological awareness in the development of pre-reading and reading skills, and it would be hoped that it would be found possible to intervene in children's reading development before failure is apparent in any major element of the total process. Many, such as Goswami and Snowling (Goswami, 1992; Snowling, 1995), would argue that efficient reading and spelling has a direct relationship to the teaching of phonology and phonological awareness at an early stage in a child's development whether or not dyslexia is present.

Phonology

Phonological awareness and processing are considered important predictors of young children's literacy development (Bryant & Bradley, 1985; Wagner & Torgesen, 1987; Goswami, 1999a & b; Turner, 1997). The teaching of skills such as rhyming and alliteration are considered vital if a child is to make progress in reading and written language skills. Bryant and Bradley's early work on rhyming and the teaching of phonological awareness through techniques of rhyme and analogy gave weight to the use of multisensory work with young children. It was identified that children who are

taught rhyming skills alone make better progress than those who are not, but that those children who are taught rhyming through practical strategies of making up words themselves with plastic letters are those who benefit most (Bryant & Bradley, 1985).

Swan and Goswami (1997) studied phonological awareness deficits at the syllable, onset-rime and phoneme levels in dyslexic children. Surprisingly they found no phonological deficits at the syllable and onset-rime levels in comparison to both chronologically matched and reading level matched controls when performance was scored only for words that had adequate phonological representations. However deficits where found at the phoneme level for adequately represented items in comparison to both control groups. It would seem then that dyslexic children are capable of learning rhyme and syllable awareness in the same way as other children but that individual phonemes are more problematic. No explanation is attempted at this point.

Goswami (1999b) speculates that the reason for the dyslexic child's problems is that phonological representations do not develop adequately, or else are not represented adequately. Input may be processed accurately by the brain, but the storage system is inaccurate. Whatever the reason, this leads to marked difficulties with reading and spelling acquisition.

Gillis and Miller (1999) argue that there is a hierarchy of skills required to develop phonological awareness skills. These start by teaching the child to listen to a sequence of sounds and then to reproduce the sequence, then advance through to a stage where the child is taught to delete specific phonemes and manipulate these within a word. This is a skill which children are assessed upon in Fawcett and Nicolson's Dyslexia Screening Test (1996).

A necessary prerequisite for the teaching of phonological awareness, the writer contests, is the assurance that the child first hears the sounds. If there is no problem with actual hearing, it would be important then to check on a child's perception of sounds. It is necessary to ensure that a child knows **how** to listen and **what** they must listen **for.** These are cautions which few writers acknowledge, perhaps assuming that they are obvious to all, an assumption which this writer's experience does not bear out.

While the development of literacy, it seems, is largely dependent on phonological awareness skills, and there is some evidence that phonological awareness can be taught, claims for the impact of such programmes are as yet modest (Brady, Fowler, Stone &

Winbury, 1994), and it will remain to be seen if such training can prevent dyslexia emerging as a later learning difficulty. Programmes such as Phonological Awareness Training (PAT) (Wilson, 1993) and the Sound Linkage programme (Hatcher, 1994) however claim high success and base their work on recent research into phonological awareness in dyslexia. Programmes such as these will be discussed under the section on provision in Chapter 16.

Speech and Language

Several recent theories of reading development propose that children set up direct connections between representations of printed words and those of spoken words in the child's language system (Ehri, 1992; Rack, Hulme, Snowling & Wightman, 1994). Knowledge embodied in these mappings later generalises to allow novel words to be decoded, creating a more generalised reading ability. The status of children's underlying phonological representations as reflected in spoken language can therefore predict to some extent the ease with which children may learn to read. Other phonological tasks such as verbal short-term memory and verbal naming similarly require access to phonological representations. Retrieval of phonological information, detected in speech by word finding difficulties and object naming difficulties reflects a dyslexic problem with retrieval of verbal information from long-term memory (Snowling & Stackhouse, 1996).

Young dyslexic children are often reported to have difficulties with speech production. (Brady, Shankweiler & Mann, 1983; Snowling, 1981) The difficulty is considered to be due to problems with the segmentation processes that mediate between speech perception and speech production. It is likely that these problems are due to difficulties in establishing and later in accessing adequate phonological representations (Snowling & Stackhouse, 1996).

This ties in with Goswami (1999b) who reports that dyslexic children may have particular difficulties in coding the sound patterns of familiar words in their mental lexicons. This offers an explanation of why it is that dyslexic children find phonological awareness tasks problematic. Rhyming and language games help children to specify key aspects of the sound patterns which may be found in the English

language. These difficulties which children experience in this area, Goswami refers to as the 'phonological representations' hypothesis.

Children's first words are thought to represent fairly global phonological characteristics. At the early stages of language development, children require to discriminate only quite generally between words, and so quite holistic representations of phonological forms will suffice. As more words come to be recognised, distinctions require to be made between finer units of spoken language. The syllable is thought to be the primary linguistic processing unit for English, as it is distinguished by a number of auditory cues. Within the syllable, Goswami argues, the most salient linguistic units are onset and rime. The rime consists of the vowel phonemes and any final consonant phonemes. One syllable differs from another rhyming syllable because the phonemes before the vowel are distinctive (e.g., 't' in 'tea' or 'tr' in 'tree'). Popular nursery rhymes have strong rhythms which emphasise syllabification.

Scarborough (1990) found that children who were later assessed as dyslexic showed subtle language impairments at the age of two years. These children were slower in acquiring vocabulary and in the development of syntactic structures in language use. Frith (1997) reports too that children at familial risk of dyslexia showed phonological impairments at the age of three years when compared to children from unaffected families. These children had difficulties in the repetition of non-words with an unusual stress pattern (weak-strong as in balloon), but had no difficulty with words such as basket (which have strong-weak patterns). They were also less able to recall nursery rhymes and were less likely to notice a non-rhyming error in those they could recall. Vocabulary skills were less well developed, but story-telling and articulation were not found to be problems. The "at risk" group also knew fewer letters than those not "at risk" though neither group had received any formal teaching of letter names (Frith, 1997). All these findings could have relevance for early identification of and intervention for possible problems.

Stackhouse and Wells (1997) have adopted a speech processing view of dyslexia which highlights the importance of speech input - to process what children hear. Without this, children will be unable to store accurate representations in their lexicon. Inaccurate or imprecise phonological representations will result in difficulty in naming or later spelling a word. Accurate output skills are just as necessary - to rehearse and

segment utterances into their component parts, necessary for storing words, reflecting on them prior to making a spoken response, and for the allocation of letters to sounds as is necessary for later spelling of words. Success in literacy, therefore, is due to success with speech processing at input, representation and output levels (Stackhouse & Wells, 1997). All these skills will have relevance for the management of and provision for dyslexia at the early stages researched in this study.

Balance

For some time it has been acknowledged that there can be an association between dyslexia and clumsiness, sometimes attributed to dyspraxia, more often simply to poor coordination. Explanations have previously considered this poor coordination to be due to uncertainty over right and left with possible associations to a lack of hemispheric dominance in the brain. However there has recently been a significant increase in research into balance and dyslexia, much of this centred on the work of Angela Fawcett and Rod Nicolson at the University of Sheffield.

According to Fawcett and Nicolson (1996b), "One of the most surprising findings in dyslexia research is that dyslexic children suffer from difficulties in balance, especially when they are not concentrating on the balance task" (p. 7). Fawcett and Nicolson include a test of balance as part of both their Dyslexia Screening Test and their Dyslexia Early Screening Test. They consider that their test of balance through assessing children who have had a controlled push in the back is one which separates dyslexic children from non-dyslexic poor readers. The reason for the poor balance in dyslexic children is considered to be an abnormality or difference in the cerebellum of the dyslexic brain.

Neurology

Neuroanatomical research evidence, mainly carried out through autopsies of dyslexic brains followed by modelling of findings in experimental animals, suggests that areas of the brain concerned with perceptual processing, as well as those involved in cognitive and metacognitive tasks are anatomically affected (Galaburda, 1999).

Over recent years, progress in techniques which allow researchers to investigate the processing of information in the brain as the processing is being carried out have

improved vastly. Research in this area however has been largely confined to older children and adult dyslexic subjects, indicative of the controversial aspect of identifying dyslexia in young children. Neuroimaging, it seems, will be an area of rapid development for the future. Current findings with adult dyslexic subjects are entirely consistent with a model of dyslexia which shows weakness in the phonological processing system (Eden & Zeffiro, 1998). When performing tasks which require phonological judgements, dyslexic adults show reduced activation in temporal and parietal regions, particularly within the left hemisphere. Recent research reveals that dyslexia has a "universal basis in the brain and can be characterized by the same neurocognitive deficit" (Paulesu et al., 2001). Differences between dyslexia in different countries and languages can be explained by the different orthographies, with deep orthographies causing more and severer cases of dyslexia, while shallow ones minimise dyslexic problems. This is consistent with a model of dyslexia which relates to phonological processing difficulties. Reduced activation in the left middle, inferior, and superior temporal cortex and the middle occipital gyrus was the universal feature of dyslexia for word reading. Reduced activation was found with Positron Emission Tomography) (PET) and functional Magnetic Resonance Imaging (MRI) scans.

Galaburda (2001) has found sex differences in sound processing ability and processing speed in his experiments on animals with induced cortical malformations such as those seen in dyslexic brains. The sex difference, he claims, is modulated by the male sex hormones. These findings are likely to give a credible explanation of the imbalance in numbers of male and female young people with dyslexia with males outnumbering females by about 3 or 4 :1.

Automaticity

Automaticity refers to a process once it has reached a stage where it is carried out without conscious thought and deliberate attention. Thus reading is a process which for most in adulthood can be carried out without conscious attention and thought being given to the matching of letters to sounds in order to blend these into words. For efficient reading and writing to take place, children must reach a point when they no longer require to attend consciously to the decoding and encoding of letters.

Rapid automatised speeded naming tasks are found to be particularly problematic for dyslexic children. These are tasks which require the child to name familiar items as quickly as possible. Despite familiarity with the phonological forms (such as digit naming), the time pressure stresses the child's phonological system, leading to poor performance (Fawcett & Nicolson, 1996; Goswami, 1999b).

Multilingualism

Cline and Reason (1993) consider that the difficulties which young children have because of immature phonological awareness and memory will face heightened difficulties if the dialect or language they are accustomed to at home is not the same as the language of the school and the print to which they are exposed. Pupils for whom English is an additional language may experience difficulties in pronouncing sounds which do not exist in their home language, thus also affecting comprehensibility through additional problems with rhythm, stress and intonation (Avery & Ehrlich, 1987).

Assessment therefore for bilingual and emergent bilingual children is particularly problematic (Eaude, 1996 & 1999; Reason, 1999). Cline and Reason (1993) have argued that children from linguistic minorities are liable to be disadvantaged in standardised tests, in particular IQ tests which are often used in the psychological assessment of dyslexia. Consequently these children may not meet the criteria for a discrepancy model of dyslexia, and therefore not receive any additional resources which are specifically allocated to dyslexic children. Cline and Reason's assertions are borne out by statistical findings in local authority contexts where bilingual children are significantly underrepresented in dyslexia provision (Inner London Education Authority, 1985; Commission for Racial Equality, 1996; Crombie, 1999).

These problems and questions raised must lead to questions on whether discrepancy definitions of dyslexia are valid for children from linguistic minorities (Frederickson & Frith, 1998), or perhaps to whether IQ testing is an appropriate assessment tool for linguistic minority children. There is a need to ensure that assessment does not bias certain groups of children. To do this, it is necessary to consider not only language factors, but also cultural matters to ensure that all children have their needs met in the most appropriate context and by the most appropriate methods.

The First International Conference on Multilingualism and Dyslexia held in Manchester in June 1999 considered these questions and many others. What has been an under-researched area for a variety of reasons from lack of understanding to fears of accusations of racism is now being taken seriously, and the next years would be expected to see a burgeoning of research in this field. To further this end, Tony Cline and Tatheer Shamsi were commissioned to publish a literature review pertaining to the relationship between dyslexia and English as an additional language in late 1999 (Peer, 1999). This literature review and its findings were published by the DfEE in January, 2000 (Cline & Shamsi, 2000). Failure of children learning English as an additional language (EAL) to develop literacy after "normal teaching" is exceptional and is likely to indicate literacy difficulties which are not the result of speaking a different language outwith. These literacy difficulties and their effects on children at the early years of their education will be further discussed in Chapters 7 (The bilingual dimension) and 20 (Conclusions and recommendations).

While there has been awareness of the relationship between minority groups and English language reading difficulties for some time, Riessman argued that there are a group of children for whom severe physiological factors outweigh any ethnic factors which may influence the children's reading development (Riessman, 1962). It would seem that this is the group that we may term "dyslexic".

Attempts to prevent reading failure

Current attempts to prevent reading failure by identifying early indicators and intervening at point of identification are however not entirely new. Intervention has for decades been considered the priority of a few working in the fields of education, psychology, psychiatry and neurology. Recognition has been given to the fact that reading failure often leads to later psychological problems and underachievement of potential (de Hirsch, Jansky & Langford, 1967). As early as 1935, Castner described children with a cluster of traits which characterised pre-school children who were likely to experience later reading failure. The fact that there are few who are aware of these studies, and even fewer practitioners who take note of their findings is indicative of the lack of impact and success these studies have had on the wider world of education. There is however considerable similarity between much of the work done in the 1960s

and present-day attempts to achieve the same aims. While the methods of presentation of the material differ from previous approaches, the fundamentals bear considerable similarity. Description is given here of two of the most commonly used standardised tests which currently attempt to identify children with dyslexia just before or just after school entry:

The Cognitive Profiling System (CoPS1) computer program

The Cognitive Processing System 1 (CoPS1) claims to be "a unique program for the assessment of dyslexia" (Chameleon, 1997, p. 1). CoPS1 consists of the following eight core tests, plus one supplementary test (Clown) designed to identify children who may have difficulties in colour discrimination which might affect their performance on some of the other cognitive tests:

Test	Skills which program claims to assess
Zoid's Friends	Visual/verbal sequential memory (colours)
Rabbits	Visual/sequential memory (spatial/temporal position)
Toybox	Visual/verbal associative memory (shape & colour)
Zoid's Letters	Visual/verbal sequential memory (symbols)
Zoid's Letter Names	Visual/verbal associative memory (symbols & names)
Races	Auditory/verbal sequential memory (names)
Rhymes and Alliteration	Phonological awareness (rhyming and alliteration)
Wock	Auditory discrimination (phonemes)
Clown	Colour discrimination (supplementary test)

According to the CoPS1 User Guide, "CoPS1 should ideally be used for screening all children on school entry, or as soon as possible thereafter, i.e. at the age of four or five years. When used in this way, it can reveal many children who are likely to encounter significant difficulties in learning basic skills but who might otherwise have passed undetected at that stage" (Singleton, Thomas & Leedale, 1997, p. 1). It was with the intent of identifying all children likely to experience later literacy problems that East Renfrewshire Education Authority introduced the CoPS1 program into all of its primary schools and nurseries in the spring of 1998. The intention was to screen all nursery children before they entered primary school, and all children who were in the current Primary 1 classes. Older children, it was recommended, would only be tested if they

were already showing signs of literacy problems. A quicker version of the program where only selected tests are used (QuickCoPS1), was available to minimise the amount of time required for testing, and some establishments used this version.

The Dyslexia Early Screening Test (DEST)

Because of the implications implicit in the definition of dyslexia: that dyslexia refers to a difficulty with reading and written aspects of language, early identification of dyslexia at the pre-school stage tends focus on underlying problems and generally associated difficulties, not on true identification of dyslexia (identification of reading and written language difficulties). The Dyslexia Early Screening Test sets out to identify dyslexia at the early stages, and if appropriate intervention is to be put in place to prevent the associated difficulties developing, it is relevant that this test and others with similar claims should be investigated to find if they can indeed reliably identify dyslexia from associated signs, and if so, if this will help identify appropriate strategies to alleviate later problems.

The DEST test battery consists of ten items which consider both attainment and diagnostic information. There are two tests of attainment:

1. **Digit Naming** which checks whether a child can name the digits 1 to 9, and
2. **Letter Naming** which checks if a child is able to name lower case letters. The letters are mainly those learned initially, but include a few which are learned later.

Diagnostic tests are designed to look at factors generally associated with dyslexia. These are:

1. **Rapid Naming** is based on the work of Denckla and Rudel (1976a; 1976b), which provides support for the theory that dyslexic individuals are slower to name pictures or colours when there is a series of stimuli to be named. The test measures the time taken to name a page full of outline drawings.
2. **Bead Threading** finds out how many beads a child can thread in 30 seconds, and is based on the theory that dyslexic children are poorer than average on tests of fine motor skill involving hand/eye coordination.
3. **Phonological Discrimination** assesses the child's ability to hear the difference between sounds in words, such as 'hit' and 'hip'. These are considered to be

core deficits in children assessed as dyslexic (Stanovich, 1988a, 1988b; Bradley, 1980).

4. **Postural Stability** is one of the tests where, it is claimed, dyslexic children score significantly worse than non-dyslexic poor readers. Dyslexic children have difficulties with balance, especially when they are concentrating on another task. These balance difficulties are said to be related to an abnormality in the cerebellum (Young, 1994).
5. **Rhyme Detection** is a test of phonological awareness which assesses the ability to tell whether words rhyme, and also to determine the first letter sound (Bryant and Bradley, 1985; Bradley, 1980).
6. **Forwards Digit Span** gives an indication of a child's working memory which according to Thomson (1982) is a classic indicator of dyslexia.
7. **Sound Order** involves listening to a tape and saying which of two sounds comes first when both sounds are presented quickly one after the other. There are indications that this may be symptomatic of dyslexia, and also indicate possible difficulties with phonological discrimination. It could also indicate hearing problems (Newton & Thomson, 1976).
8. **Shape Copying** assesses the quality of pencil control when copying simple geometric shapes. Dyslexic children often indicate poor control in this task (Newton & Thomson, 1976).

CoPS1 and DEST as predictors of dyslexia

While presentation of the above tests differs from previous attempts at early identification of dyslexia, nonetheless there is little evidence of new knowledge in either of them. In the case of CoPS1 the medium of presentation is certainly different. Comparison with the research for the Predictive Index conducted by de Hirsch, Jansky & Langford (1967) reveals much that is common. Factors such as letter naming, rhyme detection, auditory memory (digit) span, balance (postural stability), shape copying (Bender visuo-motor gestalt) and auditory discrimination have been highlighted as being dyslexia sensitive indicators. However as the work from the 1960s has met with little success in the reliable identification of dyslexia at an early stage, further investigation of these present tests requires to be evaluated as they too may go the way

of their predecessors. These and other factors will be considered further in Chapters 11 and 12 on early identification on screening.

This chapter has outlined some of the recent research into reading and dyslexia at the early stages of a child's education. The main features of the Cognitive Profiling System (CoPS1) computer program and Dyslexia Early Screening Test (DEST) have been outlined.

CHAPTER 6

East Renfrewshire Survey of Parents of Pre-school and Primary 1 Children

This chapter sets out the detail of a survey conducted with East Renfrewshire parents of children in their pre-school year and Primary 1 in 1998. It considers social and genetic factors which might influence the development of dyslexia. A follow-up study which looked back on children who were later assessed as dyslexic with evaluation of the earlier survey data considers the effect of early social factors and heredity on the later development of dyslexia. A second survey conducted in 2001 is also reported.

Introduction

According to Rutter, Tizard and Whitmore (1977), "Social planning is an illusion without adequate facts; and the adequacy of services mere speculation without evaluation" (p. 318). Research, it is posited must be a continuing and permanent feature of any department concerned with social provision. Provision for young dyslexic children, as with all special needs, must be planned. Most previous planning has not involved planning for dyslexia at an early age. The main reason for this lack of planning is that dyslexia does not generally emerge as a problem until later when reading and writing have not developed as teachers had expected. With the acceptance of research findings which view dyslexia as a genetic disorder which is present from birth and before, this lack of early planning is no longer acceptable. This study endeavours to provide evidence for a means of remedying this situation in the East Renfrewshire context.

Questions about the existence of dyslexia were posed throughout much of the last century. The terminology used is indicative of the intensity of the debates and conflict which have developed since Morgan first described the dyslexic boy who wrote his name as "Precy" (Morgan, 1896). Terms such as "strephosymbolia" (Orton, 1966), "dyssymbolia" (Critchley, 1964), "word-blind" (Hinshelwood, 1917) and "syndrome" (Miles & Miles, 1990) serve to illustrate the different views taken. Not only have there been debates over names, but also over qualifying words such as "specific", "developmental" and "congenital" (Reid, 1977, p. 135). However amid all the conflict,

the children who have presented with the reading difficulties have shown considerable similarity (Miles & Miles, 1990).

While some have debated terminology, others have debated the very existence of dyslexia (Portsmouth & Caswell, 1988), maintaining that it is impossible to separate those who are dyslexic from those who have reading difficulties generally. Not denying the difficulties the children have, many consider the problems as having emotional causes or to be due to deprivation, lack of exposure to books in the home or perhaps inadequate teaching or lack of motivation (Vernon, 1977). Some recent studies concentrate on heritability and genetics (Grigorenko, 2001; Grigorenko et al., 1997; Pennington & Lefly, 2001). Others concentrate on neurological differences (Galaburda, 2001). Frith's model of dyslexia as existing at various different levels has been outlined in Chapter 1 and will be developed later.

Reading habits including frequency of buying books and visiting a library could give insight into some social factors which might contribute to the development of dyslexia if indeed these are relevant. Investigation of these factors would therefore be relevant in questionnaires to survey local authority parents.

Goswami (1990) believes that children who are aware of rhyming relationships between spoken words can readily learn to use orthographic relationships between words when learning to read new words by a process of analogy to words already known. Evidence of phonological weaknesses in dyslexic children has been well supported in the literature (Hulme & Snowling, 1992; Lundberg & Hoien, 2001; Scarborough, 1990; Stanovich, 1988b). There is strong evidence that in children who later become dyslexic, phonological factors, some of which are related to speech processing skills, are evident at a young age (Nicolson, Fawcett, Moss, Nicolson & Reason, 1999; Snowling & Nation, 1997). This often manifests itself in a speech difficulty at the early stages of speech development. Snowling & Nation (1997), on reviewing the evidence, consider that the phonological weaknesses relate not just to awareness of sounds and sound patterns in words, but also to speech production, perception, verbal short-term memory and object naming. This may mean that children who have speech difficulties and require therapy may be more subject to dyslexic difficulties than others who do not (Stackhouse & Wells, 1997). If so, then parents, medical or nursery staff are likely to have requested referral to a speech therapist.

In seeking to study whether or not factors such as exposure to books, being read to at home during the early years of childhood (when considered alongside a family's history of dyslexia) affect the development of dyslexia, a questionnaire was drawn up to go to the parents of all children in Primary 1 and to children in their pre-school year at local authority nurseries. Methods of parental support to dyslexic children has tended to focus on strategies of paired and shared reading with little acknowledgement of the most effective ways in which parents and carers can best help children learn to read (Collins & Matthey, 2001). A knowledge of the background of dyslexic children could possibly help inform recommendations made to parents if there were found to be common factors in the literacy habits of children who later develop dyslexia. There has been in the past a perception that dyslexia is a middle-class problem. One particularly important factor to consider then was whether or not there is a social or social class factor in the determination of dyslexia. If so then one would expect to find more dyslexic children in middle class schools.

It was by chance that the distribution of the initial questionnaires coincided with the introduction of the government's Early Intervention Programme (SEED, 1999; 2001). As the study would provide useful information on the literacy habits of East Renfrewshire children generally, it was decided to repeat the questionnaire in 2001 after the Early Intervention programme had been running for three years. There would be indications then of the effects that the Early Intervention Programme was having on the reading habits of parents with their children. It will now be possible to track the development of a further cohort of children with a repeat evaluation of dyslexia in Primaries 3 and 4 in 2004 while still tracking the first cohort. It would also be possible to compare dyslexic children who come from areas of deprivation with those who do not.

Recent literature highlights the beneficial effects which early phonological awareness training can have on reading development (Cunningham, 1990; Lundberg, Frost & Petersen, 1988; Stuart, 1999). While most of the recent studies have involved the formal training of young children, as opposed to the more naturalistic methods which parents use, they serve to illustrate that familiarising young children with the sound system of their language is likely to effect their later reading development. Parents often familiarise their children with sounds by encouraging them to play with

similar sounding words as they are found in nursery rhymes. This is likely to benefit the children's awareness of sound patterns and their similarities in a very informal way. Stuart (1999) studied children, the majority of whom were learning English as a second language. This will be developed further in the following chapter.

Research has established that dyslexic boys outnumber dyslexic girls by between 3:1 and 4:1 (Geschwind, 1982; Ott, 1997). Various reasons, mainly genetic, have been hypothesised in the research (Cardon, Smith, Fulker, Kimberling, Pennington & DeFries, 1994; Paulesu et al., 2001), but none has established clear reasons to account for why dyslexia affects one family member and not another. "While dyslexia may be present in the genotype, it may for various reasons fail to manifest itself in the phenotype" (Miles & Miles, 1990, p. 27). While there are physiological and genetic reasons which might give some explanation, social factors too are likely to have at least some influence on the differing development of boys and girls, and hence of dyslexia, and these require some investigation.

A longitudinal study which later investigated dyslexic children in Primary 3 and 4 to establish if previous factors and reading habits in the home influenced reading development may help establish if dyslexic children are treated differently at home in the early years. In the school year 1997–1998 the number of children in Primary 1 and their pre-school year totalled 1994 children. A questionnaire was designed to investigate the hypothesis that factors in the early childhood habits of children later described as dyslexic would have an influence on their condition.

Accepting dyslexia as a literacy problem with a hereditary component, there was an indisputable possibility that the questionnaires from the parents of dyslexic children would not reply due to their own difficulties with literacy. However as it was unlikely that both parents would have dyslexic difficulties it was hoped that replies would still be received that would indicate if early literacy habits affected the later development of dyslexia. It was hypothesised that while environmental circumstances would affect children's attitudes towards reading and books, there would be a group of children who, regardless of parental input, would develop dyslexia.

Method

Parental Questionnaire

In autumn of 1997, a questionnaire was drawn up for distribution to parents of all children in their pre-school year and Primary 1. Questionnaires were sent out early in 1998 to a total of 1994 children. The questionnaire was designed to evoke responses to social, cognitive, heredity, attitudinal and medical issues. See Appendix 4.

The purpose of these questionnaires was to look retrospectively at children who later emerged to be dyslexic at the P3 or P4 stage and consider possible influencing factors from earlier stages. The information from the questionnaires would however also have interest to those involved in the Authority's Early Intervention Programme, and give insight into parental perceptions and approaches to literacy in the home. These would only be reported in a general sense to preserve the anonymity which had been guaranteed to parents at the outset. See Appendix 4 for full details of schools involved and a copy of the questionnaire.

Pilot

The questionnaire was viewed and commented on by Head Teachers of all Nursery schools, and various other Heads of establishments (a total of 14 Head Teachers). Comments were taken into account and a revised questionnaire was produced. Main concerns of Heads were that parents may be inclined to give the answers which the school staff would wish them to give rather than honest answers. It was difficult to state categorically that this would not happen, as this was always a possibility. However the option to return the questionnaires directly to the researcher (with no necessity for any school involvement) would help avoid this. Parents were also assured in the questionnaire that their responses would be treated as confidential unless they particularly wished any matter to be discussed with school staff. Head Teachers wished a numeracy question to be added so that numeracy could be viewed alongside literacy. Question 5 which referred to counting activities or games and the frequency of these activities was the only addition to the original draft questionnaire.

Final Version of Questionnaire

A questionnaire was sent to the home of every P1 and pre-school year child in East Renfrewshire schools and nurseries. These were distributed through the schools and nurseries. School personnel were asked to return all completed questionnaires to the researcher. Some questionnaires were returned directly to the researcher by mail. The majority however were returned through school offices.

Where there were incomplete data which schools would know (e.g. a missing date of birth or surname), school offices were contacted to make the data as complete as possible. However if there were unanswered questions which school staff would be unable to answer, these were not pursued. Two months were allowed for return of questionnaires though most were returned within two weeks. Schools were telephoned after two months to remind them to send in questionnaires which may have accumulated in the school office, and to ascertain the number of questionnaires which had been sent out.

Data Analysis

To facilitate data analysis, some responses had to be categorised. In Questions 2 and 3 which asked parents about the frequency of taking their child to the library and of buying books, answers such as "Occasionally" were taken to mean less than monthly, and therefore not considered to be regular for the purposes of analysis. If parents stated "Every two months", this was accepted as "Yes" and the frequency noted as "regular". Responses which indicated less frequency than two monthly were taken as "No". Thus responses such as "Yes, Christmas" and "Twice a year", were entered as "No". Some respondents answered, "No, occasionally", and some answered, "Yes, occasionally". All these were taken as "No" as boxes had been provided for responses which reflected frequent regular visits to libraries or to buy books. "Yes, other" with no further comment, was taken as regular, as some parents stated that they responded according to the child's wishes (which were considered to be likely to be more than two monthly). Those who stated "Yes, dyslexia" or similar response (e.g. "Uncle dyslexic") in their response to Question 7 – "Is there any history of learning difficulties (e.g. dyslexia) in your family, or does any family member have difficulty in learning?" - were considered to have a family history of dyslexia.

It was felt that the maximum benefit to children would be gained through daily reading and/or counting. Less frequent patterns were unlikely to have as much effect, therefore categories of "read daily" and "count daily" were noted for analysis separately.

Other questions required respondents to tick a box, and could be categorised by box label. Questions 9, 10 and 11 were scrutinised by the researcher for relevant information, but were not categorised. Although considerable data analysis was completed for the education authority, only data relevant to this study are shown here.

Thirty-three children were found to be dyslexic when information was requested from schools and psychologists in the spring of 2001. The group for whom questionnaires were available and who were later found to be dyslexic have been compared with the data for the whole authority. As different groups of children were considered in each of the surveys, the data from both were taken into account, a total of 2281 questionnaires, and the information from 33 dyslexic children's parents analysed to establish if parental habits and other social and medical factors for the dyslexic group were significantly different from East Renfrewshire children in a general sense. Only one dyslexic child had been identified as dyslexic from the 2001 questionnaires.

Data were processed using the Statistical Package for the Social Sciences (SPSS) for Macintosh computer. Data were input by the researcher and a clerical assistant, each checking the other's input to ensure accuracy and consistency. Data were later further edited to remove anomalies, such as occurred when a parent stated that s/he bought books regularly and said this was done at Christmas only. Data at first categorised as regular were then altered so that only responses which reflected every two months or more frequently was considered as regular. This was checked for all questions so that consistency could be assured.

As the researcher's experience and much of the literature referred to earlier point to genetic, developmental and cognitive factors as more relevant than social factors, it was hypothesised that for reading and counting habits, the dyslexic group would show no statistical difference from East Renfrewshire children in general. As there were likely to be differences in early speech and possible genetic factors (which families may or may not have been aware of), with the dyslexic group showing higher incidence of speech difficulties and hereditary factors, it was hypothesised that the dyslexic group would

have more speech and language difficulties and be more likely to come from families with a family history of dyslexia.

Results

All schools returned some questionnaires though there was wide variation between schools in the numbers returned, and also wide variations between 1998 and 2001. See Appendix 4 for details of returns from schools. Table 1 shows the number of children whose parents were sent questionnaires and the number of returns received for each year.

In 1998, a total of 1165 questionnaires was returned to the researcher, and in 2001, 1116 questionnaires were received, giving 58% and 51% returns for each year respectively.

Table 1. Number of parents to whom questionnaires were sent and returns received.

Year	Year group	Questionnaires sent out	Returns received
1998	Pre-school	785	390
	Primary 1	1209	775
2001	Pre-school	1130	419
	Primary 1	1175	697

The gender balance for 1998 was 49.2% boys to 50.8% girls, and in 2001 49.1% boys to 50.9% girls. Over the two surveys, most schools had a fairly even gender balance. School 19P however was an exception with over twice as many girls returning questionnaires as boys. This happened in both of the year groups surveyed. Further investigation revealed that for the 1998 survey there were 23 girls and 14 boys in the Primary 1 class (a 1.6:1 ratio) and in 2001, 21 girls and 17 boys (a 1.2:1ratio). Returns in 1998 were for 20 girls and 10 boys and in 2001, 13 girls and 5 boys - 2:1 and 2.6:1 ratios respectively.

The purpose of the original questionnaire was to investigate the relationship between early reading habits and the development of dyslexia. The information gained from the

questionnaires was also useful to the education authority in evaluating its Early Intervention strategy, and therefore the questionnaire was repeated after three years of early intervention. Below is a summary of the information obtained from the survey. Data are only reported in brief as Early Intervention was not the focus of this study. Further analysis which compared schools which were funded for Early Intervention with those which were not were reported to the local authority.

Table 2. Brief summary of responses from parents from literacy survey (obtained from questionnaires sent to parents 1998 and 2001).

Question	% Yes 1998 N=1165	% Yes 2001 N=1116	Mean %
Does your child like books?	99.4	99.5	99.4
Do you take child to the library regularly (at least once a month)?	57.3	55.6	56.4
Do you take child to the library regularly (at least once every two months)?	59.8	58.0	58.8
Do you buy books for your child regularly (at least once a month)?	64.6	66.0	65.3
Do you buy books for your child regularly (at least once every two months)?	76.8	75.0	75.9
Do you read with your child at least daily?	87.3	88.0	87.6
Did you teach your child nursery rhymes?	95.3	95.5	95.4
Did he/she learn them well?	95.8	96.2	96.0
Did you involve your child in counting activities at least daily?	74.5	76.1	75.3
Is there a family history of dyslexia?	5.2	5.1	5.1
Has your child ever received speech therapy?	10.6	9.5	10.0
If yes, is speech therapy continuing?	38.7	42.4	40.5

Analysis which considered the literacy habits of those who reported a family history of dyslexia with those who did not, gave some additional information which was relevant to the study.

Table 3. Summary of parental responses to literacy survey (obtained from questionnaires received from parents who said there was a family history of dyslexia 1998 and 2001).

Question	% Yes 1998 N=60	% Yes 2001 N=57	Mean
Does your child like books?	98.3	100.0	99.1
Do you take child to the library regularly (at least once a month)?	66.7	43.8	55.2
Do you take child to the library regularly (at least once every two months)?	66.7	49.1	58.0
Do you buy books for your child regularly (at least once a month)?	68.3	50.9	59.6
Do you buy books for your child regularly (at least once every two months)?	78.3	70.2	74.3
Do you read with your child at least daily?	86.7	78.9	82.8
Did you teach your child nursery rhymes?	90.0	96.5	93.2
Did he/she learn them well?	81.7	87.7	84.7
Did you involve your child in counting activities at least daily?	70.0	77.2	73.6
Has your child ever received speech therapy?	18.3	10.5	14.4
If yes, is speech therapy continuing?	12.5	4.3	8.4

Because the number of children receiving speech therapy from families with a history of dyslexia was small (11 out of 60 in 1998 and 6 out of 57 in 2001), the children whose speech therapy was continuing was necessarily even smaller (6 out of 11 continued to

receive speech therapy in 1998, and 2 out of 6 in 2001), these statistics will have minimal relevance.

Comparison of means was carried out between families who reported a family history of dyslexia and those who did not, with the result shown in Table 4.

Table 4. Comparison of means from parental responses to literacy surveys with reference those who reported a family history of dyslexia and those who did not.

Question	Mean % Yes Fam hist N=117	Mean % No fam hist N=2164	χ^2	df	*p*
Does your child like books?	99.1	99.3	.34	2	N.S.
Do you take child to the library regularly (at least once every two months)?	58.1	59.0	.03	1	N.S.
Do you buy books for your child regularly (at least once every two months)?	74.4	76.0	.17	1	N.S.
Do you read with your child at least daily?	82.9	87.7	13.69	2	<.01
Did you teach your child nursery rhymes?	93.2	95.5	1.52	2	N.S.
Did he/she learn them well?	84.6	92.1	12.28	2	<.01
Did you involve your child in counting activities at least daily?	73.5	75.5	.23	1	N.S.
Has your child ever received speech therapy?	14.5	9.8	2.69	1	N.S.
If yes, is speech therapy continuing?	8.4	4.0			

Thirty-three children whose parents had returned questionnaires were later found to be dyslexic at the Primary 3 and 4 stage. Twenty-four of these questionnaires had been returned by Primary 1 children's parents and 9 by nursery children's parents. Only 1 of these children had data in the 2001 questionnaire with the rest coming from the 1998 survey. This was due to there being very few children with dyslexia recognised as early as Primary 1 when the statistics for the 2001 survey were originally obtained, and

reluctance on the part of educational psychologists to investigate children for dyslexia at this early stage. The researcher considered this one child to be dyslexic, and it has since been confirmed at the Primary 2 stage by an educational psychologist. The questionnaire data related to 19 children assessed as dyslexic by an educational psychologist who were at the Primary 4 stage in 2000 – 2001 session, and 5 who had been assessed by the Network Support teacher and were awaiting a psychologist's report. Five children had been assessed by an educational psychologist at the Primary 3 stage and 4 were awaiting reports, preliminary assessment having been completed by the school's Network Support Teacher.

The ratio of boys:girls was 4.5:1 for the questionnaires relating to dyslexic children compared to 1:1 ratio of boys:girls for the returns overall. Table 5 shows the numbers involved with very slightly more girls than boys overall.

Table 5. Returned questionnaire data relating to gender of children assessed as dyslexic and children not assessed (1998 and 2001).

	Boys	Girls	Ratio
Dyslexic (N=33)	27	6	4.5:1
Not assessed (N=2248)	1094	1154	1:1

$\chi^2 = 14.3$, df = 1, $p<.001$.

The 33 questionnaires were further analysed and the results are displayed in Table 6.

Table 6. Summary of responses from parents from literacy survey (obtained from questionnaires of children later assessed as being dyslexic 1998 and 2001).

Question	% Yes N=33
Does your child like books?	100.0
Do you take child to the library regularly (at least once a month)?	63.6
Do you take child to the library regularly (at least once every two months)?	63.6
Do you buy books for your child regularly (at least once a month)?	60.6
Do you buy books for your child regularly (at least once every two months)?	78.8
Do you read with your child at least daily?	93.9
Did you teach your child nursery rhymes?	97.0
Did he/she learn them well?	78.0
Did you involve your child in counting activities at least daily?	78.8
Has your child ever received speech therapy?	21.3
If yes, is speech therapy continuing?	71.4

Comparison of questionnaires from parents of children not assessed as dyslexic, and those who had been assessed was completed. A total of 24 of the children had been assessed by an educational psychologist with 9 who had received preliminary assessment by a Network Support teacher. Because the data were taken from two separate groups of children's parents and the questions were identical in both years, a mean percentage could be calculated from the 2281 questionnaires received from the two surveys. These data were compared with the questionnaire data from the parents of the 33 dyslexic children, and the results are shown in Table 7.

Table 7. Comparison of data from questionnaires received from parents of children later assessed as dyslexic and those not assessed.

Question	Mean % Dyslexic N=33	Mean % Not Dyslc N=2281	χ^2	df	*p*
Does your child like books?	100.0	99.4	.63	1	N.S.
Do you take child to the library regularly (at least once a month)?	63.6	56.4	.31	1	N.S.
Do you buy books for your child regularly (at least once a month)?	60.6	65.3	.15	1	N.S.
Do you read with your child at least daily?	93.9	87.6	1.31	2	N.S.
Did you teach your child nursery rhymes?	97.0	95.4	.19	2	N.S.
Did he/she learn them well?	78.0	96.0	11.24	2	<.01
Did you involve your child in counting activities at least daily?	78.8	75.3	.003	1	N.S.
Is there a family history of dyslexia?	18.2	4.9	11.72	1	<.001
Has your child ever received speech therapy?	21.3	10.0	4.62	2	<.1
If yes, is speech therapy continuing?	71.4	40.5	10.14	2	<.01

A number of schools received additional funding for Early Intervention from 1997 due to deprivation factors. See Appendix 4 for details of literacy questionnaire returns from schools. Early Intervention schools were compared with those who did not receive additional funding to establish if dyslexic children were evenly distributed across social class areas. The results are shown in Table 8.

Table 8. Returned questionnaire data relating to Early Intervention and schools of children assessed as dyslexic and children not assessed (1998 and 2001). N = 2248.

	From Early Intervention Schools		Not from Early Intervention Schools	
	N	%	*N*	%
Dyslexic (N=33)	8	24	25	76
Not assessed (N=2248)	487	22	1761	78

$\chi^2 = .13$, df = 1, N.S.

There was found to be no difference between schools which took part in Early Intervention and those which did not with respect to the identification of dyslexic children.

Of the dyslexic group 81.8% had no medical concerns. Of those who did have concerns, 15% of these concerns related to hearing – glue ear, ear infections, adenoids and grommets. This compared with 94% of those not assessed who had no medical concerns with only 1.8% mentioning hearing-related problems. Of the dyslexic group 78.8% reported no concerns as opposed to 89.2% overall. Six percent were already concerned about reading at this early stage compared to 0.8% overall.

Mean age of starting to teach nursery rhymes was 16.8 months (S.D. 12.03) when 32 of the 33 dyslexic children were considered (1 case missing data). For the group of 2085 children not assessed who had given data, the mean age was 15.63 months (S.D. 12.01). Of the parents of dyslexic children, 72.7% made no additional comments. Comments included remarks about pencil control, handwriting difficulty, or speech. One parent of a dyslexic child said that the child enjoyed school.

Table 9. Differences between mean age of starting to teach children nursery rhymes for those questionnaires returned from children assessed as dyslexic and children not assessed (1998 and 2001). N = 2117.

	Mean age in months	t-value	*p*
Dyslexic (N=32)	16.80		
		.60	N.S.
Not assessed (N=2085)	15.61		

Table 10. Comparison of means of boys: girls for combined literacy surveys from parents in 1998 and 2001.

Question	Mean % Boys N=1121	Mean % Girls N=1160	χ^2	df	*p*
Does your child like books?	99.1	99.5	1.17	2	N.S.
Do you take child to the library regularly (at least once every two months)?	58.7	59.1	.05	1	N.S.
Do you buy books for your child regularly (at least once every two months)?	74.1	77.7	3.91	1	<.05
Do you read with your child at least daily?	86.9	87.9	.72	2	N.S.
Did you teach your child nursery rhymes?	94.4	96.4	5.83	2	<.1
Did he/she learn them well?	88.7	94.6	26.28	2	<.001
Did you involve your child in counting activities at least daily?	75.1	75.6	.07	1	N.S.
Has your child ever received speech therapy?	14.8	5.5	55.02	1	<.001

Table 11. Comparison of mean age of starting to teach nursery rhymes to boys and girls for combined literacy surveys from parents in 1998 and 2001.

	Mean age in months	t-value	*p*
Boys (N=1026)	16.03		
		1.46	<.1
Girls (N=1091)	15.26		

Table 12. Comparison of dyslexic boys to boys generally for combined literacy surveys from parents in 1998 and 2001.

Question	Mean % Dyslexic Boys N=27	Mean % Boys generally N=1094	χ^2	df	*p*
Does your child like books?	100.0	99.1	.25	2	N.S.
Do you take child to the library regularly (at least once every two months)?	70.4	58.4	1.55	1	N.S.
Do you buy books for your child regularly (at least once every two months)?	74.1	74.1	.00	1	N.S.
Do you read with your child at least daily?	92.6	86.7	.81	2	N.S.
Did you teach your child nursery rhymes?	96.3	94.3	.20	2	N.S.
Did he/she learn them well?	70.4	89.1	9.27	2	<.01
Did you involve your child in counting activities at least daily?	77.8	75.0	.11	1	N.S.
Has your child ever received speech therapy?	18.5	14.7	.32	2	N.S.

Mean age of starting to teach nursery rhymes to dyslexic boys (N=26, 1 missing data) is 16.29 months compared to 16.03 months for boys generally (N=1026, 68 missing data).

Table 13. Comparison of mean age of starting to teach nursery rhymes to dyslexic boys and boys who are not assessed as dyslexic for combined literacy surveys from parents in 1998 and 2001.

	Mean age in months	S.D.
Dyslexic Boys (N=26) Missing cases = 1	16.29	9.43
Boys (N=1026) Missing cases = 68	15.83	11.36

Discussion

Planning is integral to any effective system of support, and research is vital if the support system is to work effectively (Rutter, Tizard & Whitmore, 1977). One aim of this survey of parents was to establish if and how social circumstances and reading habits in the home affect the development of dyslexia in young children. Findings can then be taken into consideration with a view to aiding future planning.

Bearing in mind the likely hereditary link which may occur in cases of dyslexia (De Fries, Alarcón & Olson, 1997; Pennington & Lefly, 2001), there was a possibility that the parents of dyslexic children might not reply, as a result of their own reading difficulties. While this could have happened to a minor extent, it appeared that parents of possible dyslexic children were likely to have responded in the same way as those whose children were unlikely to be dyslexic. It was also impossible to know at the start of the study which parents might have difficulties themselves as in 1998 none of the current dyslexic children had been identified as dyslexic. However, when returns were received, 6% of respondents in the 1998 survey declared a family link with dyslexia. The statistic found by Miles in his 1991 research concluded that the incidence of dyslexia is at least 2%, and recommended that local authorities should work on an estimate of slightly more than this 2% figure (Miles, 1991). Bearing in mind that the question referred to a family history, it was unlikely that many dyslexic parents had not responded. Because of the low rate of returns from the 1998 survey (58%), it was quite possible that questionnaires which might have been investigated would not be available

for scrutiny. At time of writing (November, 2001) the total number of returns from parents of children identified as dyslexic is approximately what might be expected (i.e. 32 out of 1165 questionnaires returned – 2.75%). When compared to Miles' figure of over 2%, it would appear that a fairly representative sample had been achieved. Miles' figure however is for the incidence of dyslexia in children in general, not those identified by Primary 3. As not all dyslexic children will have been assessed by Primary 3, it is likely that the East Renfrewshire figure will eventually be greater than the 2.75% identified here. It was however decided that enough time had been left for a representative sample to be achieved. Only the most severe cases of dyslexia are likely to have been identified by Primary 3. However, as this current research project has had an influence on awareness of dyslexia and early identification, it is quite possible that the figures identified would previously have been much lower. Incidence however is totally dependent on definition as is determined by the assessment process. Only 2.1% of the children had already received a report from an educational psychologist. The involvement of the Network Support Teacher however is a part of the Stepped Process to formal identification of dyslexia, and it is likely that the other children suspected to be dyslexic would in time be assessed by an educational psychologist as dyslexic. See East Renfrewshire Dyslexia Policy document in Appendix 3 for details of stepped approach to meeting the needs of children who may dyslexic.

Because data were categorical and numbers varied considerably between groups, it was appropriate to compare percentages using a crosstabulations procedure. In attempting to establish if there was an association between categories, the Chi square statistic was used. While there can be problems in the use of the Chi square test, especially where in circumstances as complicated as the current study (Gray & Kinnear, 1998), it was nonetheless considered an appropriate test to use on this occasion.

Numbers of questionnaires returned may have meant that data cannot be considered representative of the education authority as a whole when the number of returns is not near to 100%. In any survey where so many people are concerned however, there is little opportunity to pursue information from those who do not respond, and therefore a significant number of non-respondees might have been anticipated. The number of non-returned questionnaires was not excessive in view of the number of non-respondees encountered by the Scottish Office survey run one year later. In this survey which was

conducted by Her Majesty's Inspectors (HMI) (SEED, 2001), the total numbers were considerably smaller. The HMI survey gained responses from a total of 118 parents, a response rate of 65%.

Tables 3 and 4 appear to show a decline in literacy habits between 1998 and 2001 as fewer parents stated that they took their child to the library regularly or bought books regularly. While most of these results were not statistically significant, the trend seems to have been worse in families where there was a family history of dyslexia where parents also read to their children less frequently. Enquiry into possible reasons revealed that the libraries were involved in industrial action in the period immediately before the 2001 survey which must have affected library usage. However, parents did not make up for this by buying more books as there was a decline here too. While most parents still read to their child at least once a day, for those who stated that there was a family link with dyslexia, fewer met this standard. This might be partly explained by the ratio of nursery to primary children having increased between the two surveys though it might be expected that early reading habits would be laid down at an early age, certainly prior to school attendance. Another possible explanation would be that in 1998, the initial impact of the early intervention campaign was having an impression on reading habits, while by 2001 the enthusiasm was waning somewhat due to less targeted parental intervention. Various theories can be put forward including the possibility that computers and television occupied more of children's time and books therefore occupied less of their time, however these can only be speculations and while interesting are not directly relevant to the intent of the study. As most of the figures are not statistically significant, it is quite possible that they simply happened by chance. Counting activities improved though only slightly. More children from families with a history of dyslexia had trouble learning nursery rhymes and also attended speech therapy more than those who came from families with no history. Although it was found that literacy habits were less well established in families with a known history of dyslexia, it is only the finding on frequency of reading to children that is the main concern, as the others may have been due to chance.

Of the 33 children whose parents had returned questionnaires and were later assessed as dyslexic at the Primary 3 and 4 stage, 24 of these questionnaires had been returned by Primary 1 children's parents and 9 by nursery children's parents. Considerably more

children therefore have been identified with dyslexia by the Primary 4 stage than at Primary 3. Only 1 of these 33 children had data in the 2001 questionnaire with the rest coming from the 1998 survey. When the statistics for the 2001 survey were first analysed in the summer of 2001, educational psychologists had not assessed any Primary 1 children for dyslexia. However, 1 child from the 2001 survey was drawn to the attention of the researcher who considered the child to be dyslexic. This has since been confirmed at the Primary 2 stage by an educational psychologist and the child's data were then included in the analysis. It is likely that questionnaires from a few additional parents will be able to be analysed in 2002 as further children are assessed. It will be possible to augment the current survey data over the next few years with the identification of additional dyslexic individuals as they progress through school.

The Early Intervention Programme which commenced in 1997 granted funding to Scottish Local Authorities aimed at raising standards in literacy (SOEID, 1999). In the school session 1997 - 1998, East Renfrewshire funding was directed at schools in areas of deprivation. In investigating social factors in the identification of dyslexia, if indeed dyslexia is rightly perceived as a middle class problem, then more dyslexic children should be identified from schools not involved in Early Intervention. This was not in fact what happened. From the current information, there was no significant difference between schools in areas of deprivation (as determined by the allocation of Early Intervention funding) and those in more middle class areas. There may be a counter-argument that Early Intervention funding actually focused attention on children with difficulties and as a result dyslexic children were identified from areas of deprivation. This would suggest that the funding for Early Intervention had been beneficial in areas of deprivation. The claim that dyslexia is a middle-class disease however is given no credence in the findings as the percentages of children identified in middle-class areas is no different from those identified in areas of deprivation.

The 1998-2000 evaluation of Early Intervention in Scotland (Scottish Executive Education Department (SEED), 2001) used a questionnaire which was not unlike the writer's, and asked several questions which were similar in nature. The group which they studied however was limited to 5 schools, and although they obtained a 65% response rate, the total was only a tenth of the East Renfrewshire figure. The SEED study's return of 65% compared with 58% in East Renfrewshire in 1998 and 51% in

2001, but the survey size was roughly 181 compared to 1888 in East Renfrewshire in 1998 and 2420 in 2001. The Scottish Executive report however found that 97% of children in Primary 1 and 2 classes liked books compared with over 99% of East Renfrewshire children in Nursery and Primary 1 classes. Dyslexic children and those from dyslexic families were no different from other children in that they too liked books. Motivation to learn to read in the early years does not appear to be a relevant factor in whether or not children are later assessed as dyslexic.

The HMI survey enquired about children's access to their local library, not about whether parents actually took their child to the library, or about the frequency of visits. Having access to a library and taking children there are two different matters so cannot be compared. While the East Renfrewshire figures suggest that habits of taking children to their local library decreased between the two surveys, when dyslexic families are compared with those who do not have an identified dyslexic child, there is no difference in habits in this regard. There is also no difference in habits of buying books for children. Frequency of parents reading with their dyslexic child too showed no difference.

The main conclusions here support the hypothesis that parents who know there is a family history of problems and parents of dyslexic children do not treat their children differently in the early stages with regard to literacy habits and appreciation of books. Social factors seem here to have little influence on the development of dyslexia, at least at the surface level. It is possible that there may have been some underlying subtle differences which the questionnaire was not sophisticated enough to tease out, but this seems unlikely.

The notion that dyslexia is caused by underlying phonological deficits has been given considerable credence over recent years (Hulme & Snowling, 1992; Lundberg & Hoien, 2001; Scarborough, 1990; Stanovich, 1988b). These phonological deficits could have been caused or at least exacerbated if parents treat their children differently with respect to encouraging the development of phonological awareness. Goswami (1990) believes that rhyming skills are indicative of phonological awareness in young children. The question on teaching nursery rhymes and age of starting was designed to elicit responses to the relevance of this factor for the development of dyslexia. There was found to be no difference between families with a dyslexic child and those who did not have an

identified dyslexic child. With respect to the age of starting to teach nursery rhymes it was found that there was no significant difference. See Table 9. Parents of dyslexic children, it seems, treat their children no differently from other parents. However, there is a difference in the success which the dyslexic children had in learning the nursery rhymes, and this was reported before the children had been identified as dyslexic. There was also a difference for the children who came from a family where dyslexia had previously been identified in another family member, $p<.01$, suggesting that both factors together could be indicative of future dyslexic difficulties.

While various theories have been proposed on the reasons for there being more dyslexic boys than girls, no one factor has been positively identified as the cause. In this study, the ratio of dyslexic boys to girls was 4.5:1, N=33, $p<.0001$, suggesting that investigation of this area was warranted. If parents treated their boys differently from their girls in literacy matters, then this could influence children who may have a predisposition to the development of dyslexia. Girls do seem to have been favoured to boys in terms of parental support for literacy, although statistically this had little significance. See Table 10. However the finding that girls did better at learning nursery rhymes suggests that overall girls' phonological awareness is likely to be better than boys. This is given added weight in the finding that boys have a much greater incidence of requiring speech therapy, suggesting possible phonological confusions may lead to difficulty in speech production as well as understanding and memory. This may be indicative of chemical or genetic reasons for the difference in incidence of dyslexia between boys and girls. Social factors however seem to be of only minimal importance. The finding that girls receive favourable treatment in every aspect of literacy investigated, even though only slight and insignificant, may have some bearing when considered overall on development, but certainly cannot explain any reasons for dyslexia.

While there was a tendency to favour dyslexic boys for attention in literacy matters when they were considered alongside boys generally, there was no significant association statistically. Dyslexic boys, while slightly favoured, had difficulty with nursery rhymes when compared to those who were not assessed as dyslexic. The fact that the children were not known to be dyslexic at the time of the surveys increases the validity of this finding. Although dyslexic boys were slightly later in starting to learn

nursery rhymes compared to boys generally, this amounted to only a few days of difference and certainly could not be considered to be significant. Any explanation in terms of dyslexic boys coming from homes where literacy was impoverished have absolutely no credence in this study.

Coming from a family where there is a history of dyslexia was clearly an important element, suggesting that this is a factor which parents are willing to share with the education authority which could provide an indication of the possibility of dyslexia, a factor which research by geneticists and biochemists had previously established to be important in the clinical setting (De Fries, Alarcón & Olson, 1997; Grigorenko et al., 1997; Pennington & Lefly, 2001). Snowling (1981; 1995) had found that dyslexic children are more susceptible to speech and language difficulties than others at an early age. From the surveys, it was confirmed that children who continued to require speech therapy for some time too were more likely to be dyslexic, suggesting that here too close monitoring may lead to earlier identification, particularly if children had difficulties in a group of areas – phonological, speech, and had a family history. Social factors such as reading habits in the home and the school attended however are likely to have little importance to whether or not dyslexia will be identified.

This chapter has concluded that while social factors are important to the early development of children generally, they are unlikely on their own to cause dyslexia. It is much more likely that genetic factors are the cause, and that this knowledge can be put to use in the early stages of a child's education to ensure that children at risk of school failure due to dyslexia are given appropriate early teaching and support.

CHAPTER 7

The Bilingual Dimension

This chapter will consider the influence which being bi- or multi-lingual may have on the development of dyslexia. It will consider ethical and rights issues and possible reasons for the low recognition rate of dyslexia in the bilingual population.

Introduction

The United Nations' Convention on the Rights of the Child (1989) states that every child's right to education should include the right to literacy (Article 28). With respect to special needs, Article 23 of the same document states that the child should receive education "in a manner conducive to the child's achieving the fullest possible social integration and individual development including his or her cultural and spiritual development" (United Nations, 1989, p. 1465).

The Commission for Racial Equality (CRE, 1996, p. 7) reported that in the Strathclyde Region of Scotland, there was significant under-representation of bilingual children among pupils assessed as having dyslexia. They also reported that procedures for assessment of dyslexia failed to take account of cultural and language factors which might have an influence on a child's development. They concluded that there was "no objective reason why ethnic minority children should be ... under-represented ..." (CRE, 1996, p. 7). This confirmed the findings of a study done by Curnyn (1991) which found bilingual learners to be significantly under-represented among pupils assessed as being dyslexic. Curnyn's findings challenged educational policy, practice and provision for bilingual dyslexic children. Because of the difficulties bilingual dyslexic children have, it is essential that teachers can "identify such children in the early stages and provide appropriate support with literacy development which recognises their linguistic, cultural and individual differences" (Deponio, Landon & Reid, 2000, p. 52).

These equal opportunities issues were highlighted as early as 1994 by Cline and Reason who proposed five concrete objectives to guide progress:

1. the formulation of unbiased criteria for access to any scarce special provision in the field;

2. development of guidance on methods of assessment in which sources of bias could be minimised;
3. regular auditing of equal opportunities regarding provision;
4. awareness and skills training for those involved in the work;
5. further research. (Cline & Reason, 1994)

At national level, there was little evidence of any substantial progress towards these ends between 1993 and 1999 when the first International Multilingualism and Dyslexia Conference again highlighted the need for more and better systems of identification, assessment and support (Cline, 1999; Collins, 1999; Crombie, 1999; Deponio, Landon, Mullin & Reid, 1999; Kelly, 1999). Prior to1999, searches for literature on dyslexia and bilingualism revealed a dearth of such material (Peer & Reid, 2000; Sunderland & Klein, 1999). There was however some literature on literacy and bilingualism. Reference will be made to this material where appropriate.

To omit or neglect to identify children who may be dyslexic because of problems of uncertainty as to whether the child's difficulties are due to lack of knowledge of the English language or to dyslexic problems therefore would be to treat that child unfairly, and, as has been seen, would be an infringement of that child's civil rights under the U.N. Convention. Coelho (1998) warns of the dangers of assessing bilingual children too early before they have reached competence in English or are aware of the cultural differences. Cultural bias of much of the psychometric test material is given as a reason for caution in reaching conclusions. First language assessment by a person who is in tune with the cultural background of the child's home country is advised to discover if the child is proficient in their own language.

East Renfrewshire is an area with a growing bi- and multi-lingual population. Between 1998 and 1999 the number of different languages spoken rose from 38 to over 50 in the Authority area. The total number of bi- or multi-lingual children in East Renfrewshire schools rose in this time from 7% to just under 10% of the school population as a whole.

In 1998 in East Renfrewshire, there were four bilingual school pupils who had been assessed as dyslexic (Crombie, 1999) out of a total bilingual school pupil population of 1136. Incidence of dyslexia is estimated to be around 3-4% of the school population (Crombie, 1997a; Miles & Miles, 1990; Tansley & Panckhurst, 1981). Miles (1991)

recommended that local authorities should work to a figure of just over 2%. This means it might have been expected that in the same year, there would be a bilingual dyslexic population of between 40 and 50. While there are currently no national figures produced on bilingual dyslexic school pupils, it seems from discussion with colleagues at the First International Conference on Multilingualism and Dyslexia (British Dyslexia Association, 1999b) that this is not atypical of education authorities as a whole throughout the United Kingdom and the United States of America. However the importance of identifying dyslexia early is as important for bilingual and multilingual children as it is for those who are monolingual. Policy, practice and provision can then be structured to ensure that early identification of needs leads to appropriate support for learning for all (Peer & Reid, 2000).

Because of cultural factors, and the fact that a language other than English was being spoken in the home, it was hypothesised that bilingual children would differ from those who are monolingual. The languages spoken by the bilingual children were mainly of Asian origin, as opposed to Gaelic and other European languages. Perceived lack of books available for ethnic minority children being less than for English speaking children, it was hypothesised that there would be differences between the bilingual and the non-bilingual populations, with the bilingual children receiving less exposure to books and libraries and other public services than the monolingual population. Because of cultural factors and the fact that fewer bilingual children had English-speaking parents who could verbally ensure their rights to public services, it was hypothesised too that access to services such as speech and language therapy would be less than for the monolingual population.

Method

The method used has been described in the previous chapter. From the wording of the questionnaire, bilingual was taken to mean being brought up to speak a language other than English, while speaking English as an additional language. Any factors in bilingual homes which were significantly different from monolingual homes were noted. Factors such as reading habits, access to books and family history of learning difficulties are relevant to the dyslexia and bilingualism field, and were therefore considered.

The questions which were investigated were 1 (Does your child like books?), 2a (Do you take your child to the library regularly?) and 2b (Do you buy books for your child regularly?), 3 (How often do you read with your child?), 4 (Did you teach your child nursery rhymes?), 7 (Is there a family history of learning difficulties (e.g. dyslexia) in your family, or does any family member have difficulty in learning?) and 8 (Has your child ever received speech therapy?). See Chapter 6 and Appendix 4 for full details of survey and questionnaire.

The term "bilingual" has been used as a term of convenience to describe children brought up to speak a language other than English because it has been necessary to categorise children for purposes of analysis of data. It does not mean however that these children only speak one other language. Some of the children may in fact speak, or be learning, two or more languages other than English. The term "monolingual" is here used to describe children who have been brought up to speak only English. It does not mean they do not hear another language or have not begun to learn another language.

Results

A total of 140 responses were received from parents of bilingual children, 62 in 1998 and 78 in 2001. In 1998 there were a total of 64 bilingual children in nursery education in East Renfrewshire. According to East Renfrewshire statistical information, in the school year 1997 – 1998, 6.9% of the East Renfrewshire school population were bilingual with 38 different languages being spoken (East Renfrewshire, 1998). Although no survey was conducted in 2001, according to recent estimates, bilingual learners now account for around 10% or the school population with approximately 50 different languages being spoken.

The gender of the children was considered for both survey years. For the East Renfrewshire Primary 1 and pre-school year population as a whole in 1998 there were 50.8% female to 49.2% male - a fairly even balance of responses overall. In 2001, the percentage responses overall were 50.9% female to 49.1% male. Data for bilingual children however were not evenly distributed between the sexes.

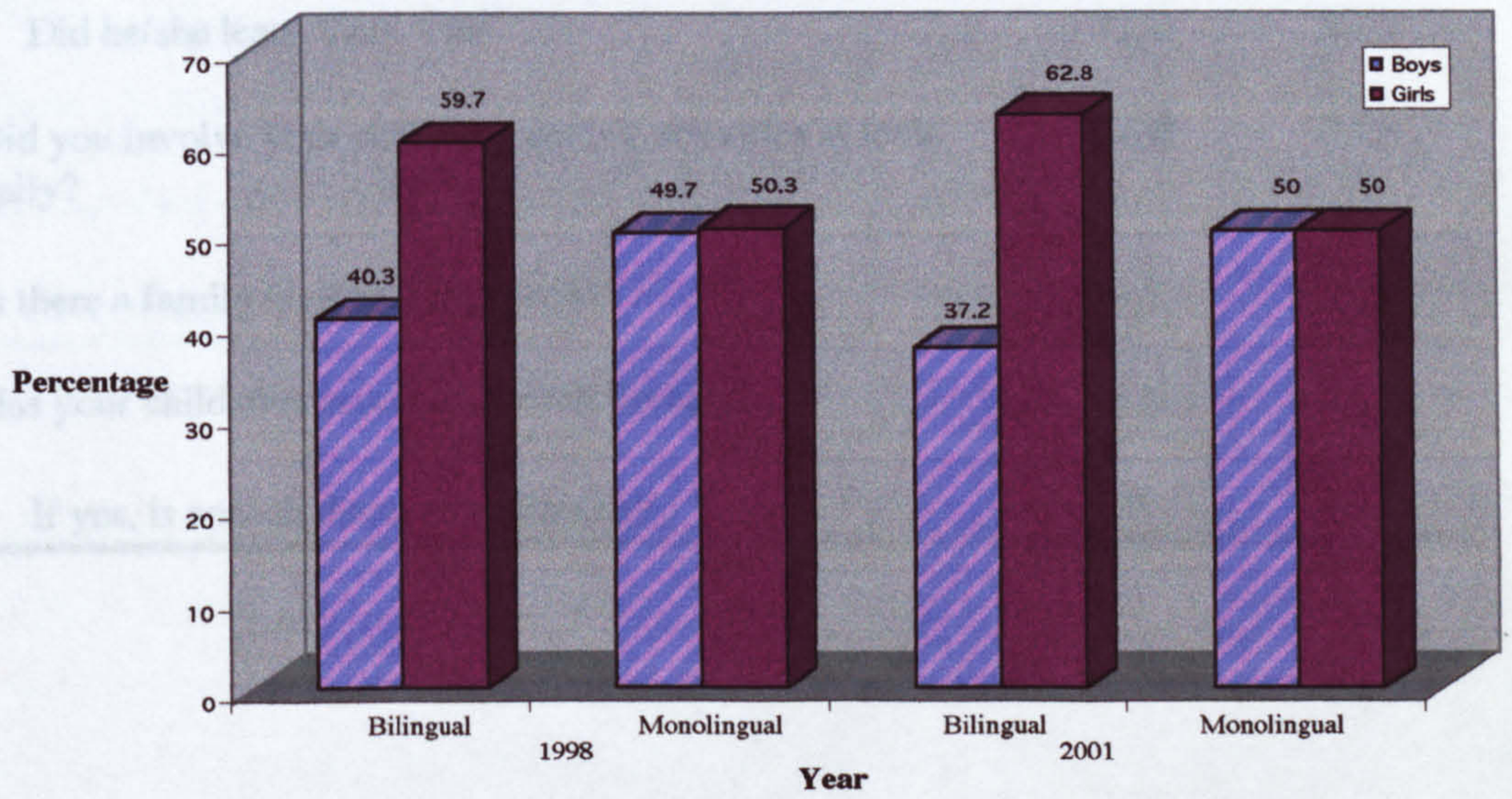
Table 14. Survey data relating to gender of bilingual and monolingual children, N=1165 (1998) and N=1116 (2001).

	Boys		Girls	
	1998	2001	1998	2001
Bilingual	25 (40.3%)	29 (37.2%)	37 (59.7%)	49 (62.8%)
Monolingual	548 (49.7%)	519 (50%)	555 (50.3%)	519 (50%)

For data relating to bilingual population N=62 (1998), N=78 (2001)
For data relating to monolingual population N=1103 (1998), N=1038 (2001).

The difference in the parental responses relating to bilingual girls and bilingual boys is clearly represented in Figure 4. Where monolingual parents responded in almost equal numbers, bilingual parents responded much more if they had female children than male.

Figure 4. Returns of questionnaires relating to gender for bilingual and monolingual children in 1998 and 2001.



In order to establish if there had been any change in literacy habits, data were compared for both survey years, then taken together to establish if there was any difference between the ways in which parents with bilingual children responded and how parents of monolingual children replied. Responses to the questions were as follows:

Table 15. Summary of responses from parents of monolingual and bilingual children from 1998 literacy survey.

Question	% Yes Bilingual N=62	% Not Bilingual N=1103
Does your child like books?	100	99.4
Do you take child to the library regularly (at least once every two months)?	46.8	60.6
Do you buy books for your child regularly (at least once every two months)?	67.7	77.3
Do you read with your child at least daily?	64.5	88.4
Did you teach your child nursery rhymes?	74.2	96.5
Did he/she learn them well?	71.0	92.5
Did you involve your child in counting activities at least daily?	54.8	75.8
Is there a family history of dyslexia?	3.2	5.3
Has your child ever received speech therapy?	1.6	11.2
If yes, is speech therapy continuing?	0	4.4

Table 16. Summary of responses of parents of monolingual and bilingual children from 2001 literacy survey.

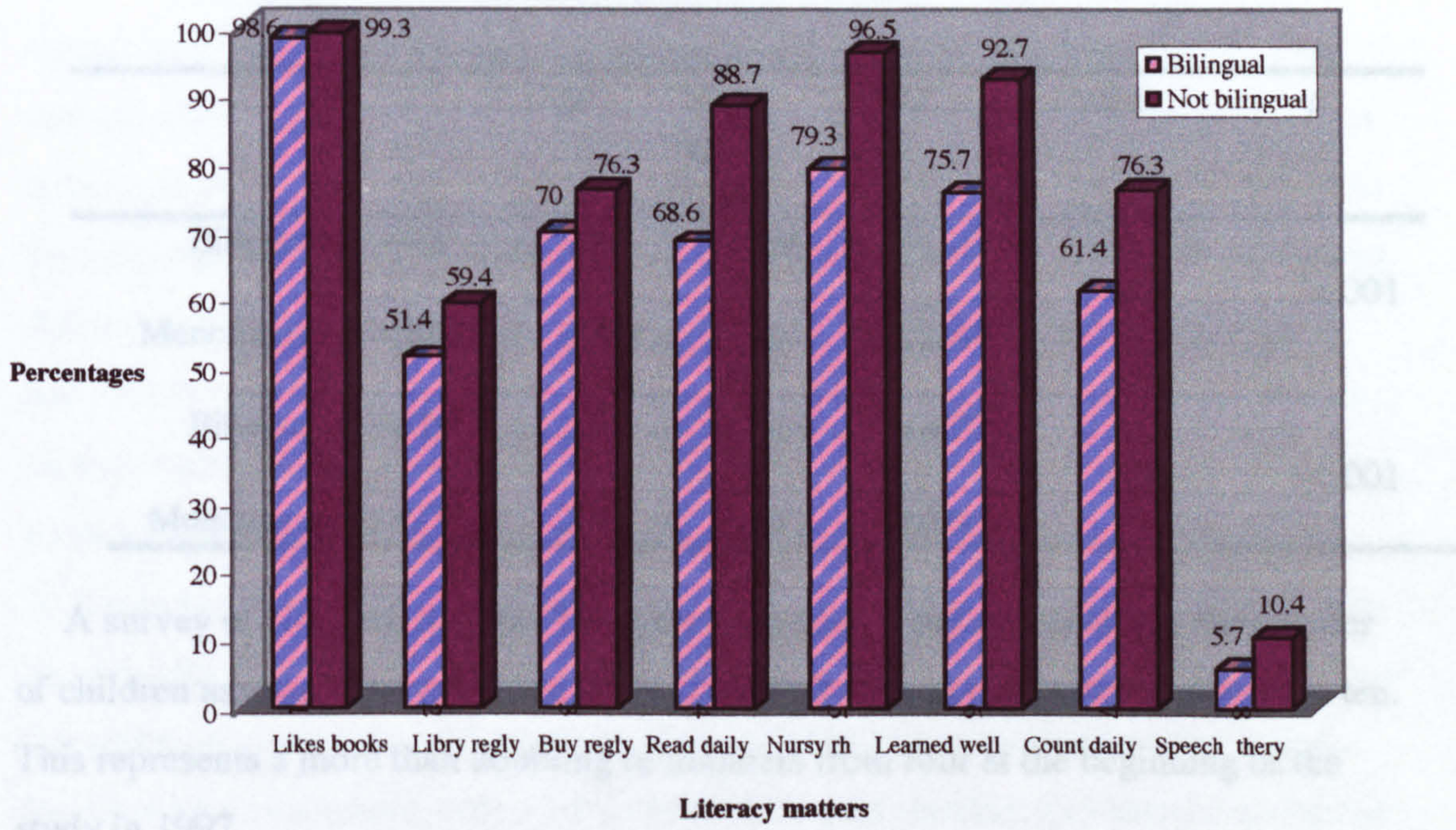
Question	% Yes Bilingual N=78	% Yes Not bilingual N=1038
Does your child like books?	97.4	99.4
Do you take child to the library regularly (at least once every two months)?	55.1	58.2
Do you buy books for your child regularly (at least once every two months)?	71.8	75.2
Do you read with your child at least daily?	71.8	88.9
Did you teach your child nursery rhymes?	83.3	96.4
Did he/she learn them well?	79.5	93.0
Did you involve your child in counting activities at least daily?	66.7	76.8
Is there a family history of dyslexia?	1.3	5.4
Has your child ever received speech therapy?	9.0	9.5
If yes, is speech therapy continuing?	3.8	4.2

Table 17. Comparison of means from parental responses to literacy surveys (1998 and 2001) with reference to bilingual and monolingual children.

Question	Mean % Yes Bilingual N=117	Mean % Not Bilingual N=2164	χ^2	df	*p*
Does your child like books?	98.6	99.3	2.13	2	N.S.
Do you take child to the library regularly (at least once every two months)?	51.4	59.4	3.46	1	<.1
Do you buy books for your child regularly (at least once every two months)?	70.0	76.3	2.87	1	<.1
Do you read with your child at least daily?	68.6	88.7	50.24	2	<.0001
Did you teach your child nursery rhymes?	79.3	96.5	89.5	2	<.0001
Did he/she learn them well?	75.7	92.7	50.73	2	<.0001
Did you involve your child in counting activities at least daily?	61.4	76.3	15.59	1	<.0001
Is there a family history of dyslexia?	2.1	5.3	2.73	1	<.1
Has your child ever received speech therapy?	5.7	10.4	3.43	2	N.S.
If yes, is speech therapy continuing?	2.1	4.3			

From the comparison of percentages in Figure 5, the differences between the literacy habits in the homes of bilingual children and those who are not bilingual can clearly be seen. The number of bilingual children who received speech therapy was very small (8), and only 3 of those continued to receive speech therapy after the initial visit, therefore statistical analysis of these data would be of no value. Table 17 however clearly shows statistical differences. In spite of these differences all the children – bilingual and monolingual - liked books.

Figure 5. Literacy factors which may affect bilingual and monolingual children. Data taken from 1998 and 2001 surveys.



The mean age of starting to teach nursery rhymes was calculated for both bilingual and monolingual children. Here too there was a significant difference in age of starting. While the age of starting to teach rhymes became younger between the two surveys, this occurred for both bilingual and monolingual children, so a significant gap remained.

Table 18. Differences between mean age of starting to teach children nursery rhymes for those questionnaires returned from bilingual children's parents and those of monolingual children's parents (1998 and 2001). N = 2281.

	Year	Mean age in months	SD	t-value	*p*
Bilingual (N=48)	1998	25.98	16.00		
				4.3	<.001
Monolingual (N=1029)	1998	15.91	12.44		
Bilingual (N=63)	2001	22.76	14.77		
				4.43	<.001
Monolingual (N=977)	2001	14.37	10.65		

A survey of Network Support Teachers in January 2002 revealed that the number of children assessed as dyslexic in the bi- and muli-lingual population has risen to ten. This represents a more than doubling of numbers from four at the beginning of the study in 1997.

Discussion

While the purpose of the original survey was not to investigate bilingualism in East Renfrewshire, it became apparent in the course of the study that all factors including bilingualism would require consideration in order to achieve as full a picture as possible on early factors which might affect dyslexia, and which the local authority might be able to do something about. The East Renfrewshire statistic for bilingual children in the school system in the year of the initial survey was just under 7%. Because the 7% figure was not achieved at exactly the same time as this literacy survey, there cannot be an exact comparison. The number of responses from bilingual children's parents was 62 bilingual:1103 monolingual – under 6%. Assuming that distribution of bilingual children was fairly consistent across age groups, it is likely that there is some under-representation of the bilingual population. However, it would be likely that some of those who did not respond were those whose English was less accomplished than those who did reply. The non-responses therefore are likely to

have been more affected by the points emerging than those who did reply. Returns from each school were scrutinised separately. Schools such as 19P and 10P where there are high numbers of bilingual children showed a reasonably high return rate overall with returns of 81% and 55% respectively in 1998. See Appendix 4. The schools which submitted low returns were in fact those in areas of social deprivation rather than those with a high bilingual population. Undoubtedly a home interview in the language of the home would have accomplished a higher return, but as the survey did not initially set out to consider bilingualism, this could not have been foreseen. Also as the prime purpose was to consider dyslexia, it is unlikely that ethnic minority parents whose children were learning English as an additional language would have considered dyslexia as a priority on which they would wish to be interviewed.

It was however clear from the findings of the surveys that bilingual children were treated quite differently with respect to dyslexia from the pre-school year and Primary 1 population as a whole. When this was considered alongside that fact that in East Renfrewshire as a whole, only four dyslexic bilingual children had been identified as dyslexic in 1998, investigation of likely reasons for this was warranted. It was possible that there was a factor in the upbringing of bilingual children that disposed them not to be dyslexic. Possible reasons may lie in their genetic makeup, but other studies have suggested that it is a fear of misdiagnosis that leads teachers and educational psychologists to err on the side of caution, and not assess bilingual children as dyslexic, particularly at an early stage (Curnyn, 1991; Deponio et al, 2000). However four children identified throughout all age groups in the whole of East Renfrewshire – a school population of 16500 approximately at the time of the 1998 survey – leads to an assumption that perhaps more than caution is concerned.

From the questionnaire data it was hoped that indicators of likely cause may be found. Bearing in mind the fact that some of the bilingual population came from cultures with mainly oral language traditions, the finding that the bilingual children did not have as much access to books through libraries or through parents buying books was not unexpected, but did not in any way explain the under representation of dyslexic bilingual and multilingual children in the Authority. It is possible however that libraries and book shops are not stocking the types of books and/or the languages which the bilingual population find appealing for children. English language books

may not be sufficiently appealing, either in terms of cultural bias or because of the difficulty of accessing full meaning. This would confirm the findings of Carrasquillo & Rodriguez (1995) that children and adults require to have a social context which motivates them to read. In addition, monolingual parents who did not go to the library or buy books, often made a supplementary comment as to why they did not buy books (e.g. "His brother had lots of books bought when he was a baby so we don't need to buy many for Johnny."). This was not the case with the bilingual parents whose command of English may not have been so great, or for whom the importance of books may have been less.

The use of the survey technique of gathering information is recommended by Robson (2000) as being as quick, reliable and easy to analyse as any method of gaining information for evaluation. He also recommends that analysis is then completed using simple averages, percentages and mean scores which are considered through a cross-tabulation procedure. In this study, with one researcher only to complete the analysis, numbers would have had to be considerably limited if any other method had been used. He suggests the method as ideal for comparing groups, such as those "from ethnic minorities" and for comparing "boys to girls". (p. 117)

While the Chi-square test may not have been particularly sensitive due to the large difference in numbers between bilingual and monolingual children's questionnaires, nonetheless the differences found were large, as is shown in Figure 5. While all the children liked books, their access to books was clearly quite different with the bilingual parents going to libraries less and buying fewer books than the monolingual parents. Nursery rhymes in some cultures are not a part of the language heritage, and this is reflected in the numbers of children learning rhymes, though most nurseries emphasise the benefits of playing rhyming games with children. As the children who have difficulty in learning rhymes may later be the ones who would have difficulty, it is important that children are taught, so that it can be ascertained whether they are able to retain these or not. Coelho (1998) recommends a "test-teach-test approach" to assessment in order to find out how pupils respond to the teaching and learning situation. (p. 67) As this is a factor which may be less important in bilingual homes, it is an area which nursery schools and early years teachers can promote and actively teach to bilingual children in an enjoyable way. While the teaching may already take

place in many early years classrooms, there may be little recording of actual responses to the teaching. Rhymes in the child's home language may also be important, and this was a factor which a few bilingual parents acknowledged. Some children were taught rhymes in their home language, though this was only mentioned by two parents. According to recent research radical improvements in reading and spelling achievements can be made through teaching of early phoneme awareness and phonics to English additional language learners (Reason & Morfidi, 2000; Stuart, 1999).

Speech therapy services are underaccessed by the bilingual population. This may require further investigation, as the uptake of services falls below expectation. The 2001 survey however shows an increase in the number of children accessing speech and language therapy, so it is likely that there has been an increased openness on the part of the health services through awareness of the underrepresentation of ethnic minority children receiving treatment. While the current figure for bilingual children is only just below that of monolingual children, it is possible that the needs of the ethnic minority population are greater due to difficulties in producing the wider range of sounds, some of which they may not have been exposed to in infancy (Czerner, 2002). There may still be some reluctance to refer bilingual children due to difficulties in knowing whether the child's speech problems are due to language difficulties or to articulation problems. There may also be a possible reluctance by ethnic minority parents to attend for appointments.

No judgements can be made from the survey of the quality of the reading support which the children were given. It can be assumed however that for most, the reading done in the home at this early stage in the child's development was a positive experience. From the survey's statistics on children who like books, this is borne out.

Possible reasons for there being more returns from parents of bilingual girls than parents of bilingual boys were considered:

1. Bi or multi-lingual boys might have been educated more in the private sector.
2. Parents of girls responded more than boys due to the pressure from girls to return the questionnaire being greater than from boys.
3. There may be more bilingual girls than boys.

Though there were very few children assessed as dyslexic, there was clearly a knowledge of dyslexia, as bilingual parents did acknowledge in some cases that there

was a family history of dyslexic difficulties. This was less than for the monolingual population. A number of possibilities were considered:

1. Families may have come from a country where dyslexia is not recognised.
2. Culturally, it may be a sign of inferiority to accept that there are learning difficulties within the family.
3. There may a combination of genetic and cultural factors which favours bilingual children with respect to dyslexia.
4. There may be a reluctance to label bilingual children as dyslexic because of the complexities of assessing children who may have a poor command of English when the assessor lacks information on the level of literacy in home language.
5. The respondents to the questionnaire might simply not have replied if they did not want acknowledgement of the fact that a family member was dyslexic.
6. The parents concerned may not have replied due to having insufficient English to understand the questionnaire.
7. There could be a factor in bilingualism that predisposes children not to have dyslexia. There is something in the very fact that these children are learning two or more languages which actually prevents dyslexia emerging. While the initial purpose of the research was not particularly aimed at looking at the bilingual population, it was possible to investigate whether there were factors in bilingual homes which did influence reading development, and whether it then meant that bilingual children had less reading problems than monolingual families.
8. There are a number of features of dyslexia which could be confusing. Checklists for dyslexia all contain factors which might readily be ambiguous in a child learning to speak English. One example of this is directionality problems which affect dyslexic monolingual children in learning to read. A Hebrew speaking bilingual child may also become confused due to Hebrew script not proceeding in a consistent left-right direction. Hebrew and/or dyslexic children therefore may read in the wrong direction in English, and say for example *saw* for *was* and *god* for *dog* .

Further probing of teachers on why there are very few dyslexic bilingual children reveals a lack of confidence in class teachers to identify what may turn out to be a slowness in English language development as difficulties could be confused. It is likely too that this lack of confidence in dealing with bilingualism will explain the under-representation of bilingual children who attend for speech therapy.

A survey of Network Support Teachers in January 2002 however found that the number of bilingual dyslexic children had more than doubled from the 1997 figure of four to ten. This suggests that while a combination of factors may have been at work, the programme of staff development which ensued from the original finding has been effective in highlighting greater awareness of the possibility of bilingual children being dyslexic and therefore greater assessment leading to acknowledgement of dyslexia in ethnic minorities especially. It is probable therefore that bilingual children are just as likely to be dyslexic as monolingual children and that although there is still some under-representation of dyslexia in the bi- and multi-lingual population, the gap has narrowed significantly and is likely to continue to do so.

Possible means of avoiding misdiagnosis and underidentification or lack of identification would be to consider other factors as described by Sunderland, Klein, Savinson & Partridge (1998). See Appendix 5a. In addition, the checklist of Crombie (1997a) will give indications for younger children but must be treated with caution. Points which require particular caution are underlined in Appendix 5b. Teachers are currently unsure of what to look for in the bilingual population as so many of the features of dyslexia are also common in children who are in the process of learning English. A suggested improved checklist which takes account of both the previous lists has been drawn up in Appendix 5c.

There is some evidence that dyslexic bilingual children will mix their languages a lot at the early stages, and not always be aware of whom they should speak to in their different languages. The language mixing also seems to go on for longer than it would for non-dyslexic bilinguals, but more evidence is required to support this theory.

Currently teaching methods generally acknowledged for bilingual children differ from those used for dyslexic children and this presents potential for conflict: whole language/language experience approaches versus structured cumulative teaching

methods. This requires further investigation which goes beyond the scope of this study.

It would seem however that for the dyslexic child who is bilingual, we require to bring in elements of both teaching styles and look at the needs and the learning style of the child (Sunderland et al., 1998). To do that we need the skills of both dyslexia trained teachers and of those who are skilled in methods of teaching those who have English as an additional language. Previously discussed research by Stuart (1999) and others seems to emphasise the need to investigate more thoroughly exactly how bilingual children who fail to acquire literacy should be managed.

If specialist support is available from outwith the school, then it must be considered whether the dyslexia specialist or the EAL teacher is the most appropriate person to give the additional support. Considered decisions may require to be made based on the greatest needs of the child: language or dyslexia. The philosophy that children cannot be assessed in English until they have had at least two years instruction in English language, however, is no longer accepted (Gholamain & Geva, 1999), and new proposals need to be made which will best accommodate the needs of bilingual children for literacy whether they are dyslexic or not.

Children whose first language is English generally come to the reading and writing process with an oral language proficiency of some thousands of English language words. Children who have been brought up to speak another language in the home may have acquired a considerable vocabulary, but if that vocabulary is not English, then reading and writing will not have the same meaning for them as it does for English first language children (Carrasquillo & Rodriguez, 1995). Motivation is likely therefore to suffer if children's level of understanding of what they are reading in English is limited by cultural experience. This may in some ways explain the findings from the research that bilingual children's experiences of books are significantly less than for monolingual children.

Recent research findings by Czerner (2002) stresses that the critical time for bilingualism lies in the first twelve months of life, as that is when early visual input shapes the wiring of the visual cortex and the auditory cortex is stimulated by input from the ears shaping the neural pathways which are laid down at this time. He concludes that if the necessary auditory input is not available during the first 12

months, the child is unlikely ever to speak the second language as a "native" speaker. There will always be telltale signs that the language has been learned later. This has importance for advice given to parents who wish to bring up their children to be bilingual.

Bilingualism is a small but important part of research into policy, practice, provision and management of dyslexia from pre-school into primary in East Renfrewshire, but education authorities must ensure that bilingual children who are dyslexic are granted the same rights to appropriate provision that are given to the monolingual population.

While bilingualism has been an area of focus for some time as awareness of likely confusions between language difficulties and learning difficulties have received greater consideration, especially from specialist English as an Additional Language (EAL) teachers, little has been known about the differences between the various home languages of the children. For example, teachers are often unable to say if a child who has Chinese as a home language is likely to find English easier to learn than a child who has Italian or French or Urdu as the home language. Little is also known about how this will affect reading and writing in English (Mumtaz & Humphreys, 2001). This research has however established that there is a need for more appropriate books, access to libraries and confidence in speech and language therapy services, as well as a much greater consideration to the possibility of dyslexia in the bilingual population. These are areas which will require to be addressed in a local context. While this study has found considerable differences between the literacy habits in those who come from bilingual backgrounds when compared to monolingual, reasons for these can only be surmised. There can however be no complacency on the part of the local authority and further investigation will be required to establish the areas which require intervention to enable further inclusion of the bilingual community which now constitutes 10% of the East Renfrewshire population. In particular there requires to be further investigation of why the rate of dyslexia is still as low as has been found.

This chapter has found that many early literacy habits in bi- and multi-lingual homes vary from those of the monolingual population of East Renfrewshire. As bilingual children seem to use books less than monolingual children this offers no explanation for the low assessment rate among the bilingual population. More likely explanations lie in the fear which teachers seem to have of mislabelling children. This has implications for human rights, disability legislation and the development of the child.

CHAPTER 8

Individual Case Studies

This chapter will consider nine individuals who all show early signs of possible dyslexia. It will consider tools used for the early assessment of dyslexia and evaluate their usefulness. Further consideration will be given to the efficacy and practicalities of the various means of support given.

The use of individual case studies offers an alternative means of interpreting and validating data obtained by other sources. While it is to some extent interpretive and subjective, it is a useful way of complementing information from other sources (Cohen & Manion, 1994). It also presents opportunities for reflection on current practice.

> Case study data, paradoxically, are 'strong in reality' but difficult to organize. In contrast, other research data is often 'weak in reality' but susceptible to ready organization. This strength in reality is because case studies are down-to-earth and attention holding, in harmony with the reader's own experience, and thus provide a 'natural' basis for generalization. (Adelman, Jenkins & Kemmis, 1980, cited in Cohen & Manion, 1994, p.123)

Neumann and McCormick (1995) consider that an advantage of single case studies is that they allow for personalised evaluation of data with repeated follow-up to consider the intervention being used. While much has been written on the early identification of dyslexia, it is important that this can be illustrated in specific examples of practice and provision within East Renfrewshire at various points throughout the study. This will hopefully show how policy within schools can be affected and changed, and how open schools are to dyslexia research, and specific intervention. It will also serve to illustrate how dyslexia may manifest itself at the early stages, and how effective current assessment and intervention procedures might prove in specific cases. It should also address the question of whether or not there are effective instruments to reliably identify dyslexia at an early stage.

"Case studies are 'a step to action', they begin in a world of action and contribute to it" (Adelman, Jenkins & Kemmis, 1980, cited in Cohen & Manion, 1994, p.123).

Case study methods, according to Reason & Morfidi (2001) can "generate a wealth of descriptive information, across a small number of learners" (p. 228). These, they claim, can be used in a constructive way to alter teachers' views on approaches to learning and teaching. Standardised norm-referenced tests are not sensitive to instructional changes over time, and do not link to curriculum content. While they may offer a snapshot of severity of difficulties, they are not the best tool for planning teaching intervention (Reason & Morfidi, 2001). Through a case study approach, it is hoped that the weaknesses of quantitative procedures can be weighed up with the strengths of qualitative information to provide a balanced overview of possible early methods of identification and intervention.

A range of different children from various schools and backgrounds are illustrated. The criteria for selection of the children was simply that they were brought to the researcher's notice because either parents or school staff had reason to belief that they may be showing early signs of literacy difficulty which might indicate dyslexia. From the following case studies, and the information gained from these, pointers as to how best to proceed in terms of policy, practice, provision and management of dyslexia may become more apparent, and contribute to appropriate "action".

Integral to any theory of dyslexia is the importance of how it is to be defined:

- at the earliest stages, and
- when it can definitively and reliably be identified.

A previous study (Crombie, 1997b) considered the main identifying features of dyslexia in an older age group of children (10-16 years) to be the identification of a significant gap between chronological age and reading accuracy age and spelling age, resulting in weak reading and written work. This gap was taken to be at least two years for a child of average intelligence quotient (80 - 85 minimum Full Scale IQ) when assessed by local authority educational psychologists. The test used was most often Wechsler Intelligence Scale for Children (WISC-R or WISC-RS) (Wechsler, 1981; 1992). Reading was measured using an individual reading analysis, most often Neale Analysis of Reading Ability (Revised, 1989), and a standardised spelling age score was also obtained. The use of the lower threshold on IQ was to rule out children who might have had a degree of more *general* learning difficulties which would affect performance. This was not to deny the existence of a group of such children

who have dyslexic indications while at the same time having more general problems in learning. Low IQ could have been considered a confounding variable in the previous study. In order to minimise complicating and confounding factors therefore, low IQ children were not included in the dyslexic group. In this study no such compromise could be reached, and issues such as these had to be addressed.

Identification of dyslexic children at an early age is problematic because there is no recognisable discrepancy between the child's chronological age and the child's reading age. For nursery children and those early in Primary 1 it is too early for reading development to be measured. Indeed most standardised tests of reading require children to have been in formal schooling for some time. IQ testing, while still considered by some psychologists to be important in the assessment of dyslexia, is not considered by the researcher as being particularly important in this study as there is no logical reason that dyslexia would affect only children whose measured IQ is average or above. IQ testing at the early stages of a child's education would not be reliable in indicating dyslexia. It may, however, indicate specific areas of strength and weakness.

The purpose of studying individual children's profiles from an early stage was to establish:

- if pupils who come from families with a history of dyslexic difficulties can be identified earlier than those without such a family history;
- if tools which claim to assess dyslexia at an early stage really do,
- if early help can alleviate or eliminate later problems, and
- if so, to establish how schools adapt and accommodate to ensure that early help is given.

The pupils identified here have parents or teachers who raised concerns about the progress which their children were making. The education authority was made aware of concern at an early stage. All of the children either had a family history of dyslexia identified by parents or were identified by the school as showing early signs of dyslexia.

Pupil 1 (Male) - (referred to here as R) - Code C41S11P (DoB: April 22, 1993)

Initial assessment by writer: 13, 18, 19 November, 1998

Pupil 1 (R) was identified through a local authority parents' night because of parental concern initially about reading progress. R was a Primary 1 pupil, aged 5 years, 7 months when first brought to local authority notice. Mother voiced considerable concern, that R was not progressing in reading or in the early stages of writing. In view of the fact that both the elder brother (aged 10 years, 5 months) and sister (aged 13 years) had previously been assessed as dyslexic, it was considered appropriate that this case should be followed up immediately by the writer. Both the earlier children had not been identified until the age of eight years with initial concerns having been expressed earlier by the parents. In the case of the second child, who also has a hearing impairment, it was the teacher of the deaf who confirmed the problems.

R was assessed using the CoPS1 computer program, and the Dyslexia Early Screening Test (DEST) (Nicolson & Fawcett, 1996). See Appendix 6d for profiles of performance on both assessments. R showed no clear signs of dyslexia on either of the tests used. The only indication on CoPS1 was the Letters subtest which was slightly below what would have been expected. On the Rhymes subtest, R adopted a strategy of naming each item singly before attempting to answer. This was an effective strategy which showed an effective way of tackling the task, but which resulted in slow but accurate performance. Concentration throughout remained good, even though there was considerable background noise from dinner ladies, and a piano playing. An interesting additional observation on the CoPS1 test was that R swapped between hands when using the computer mouse.

On the DEST, the only positive indicator of dyslexia was that R's shape copying was weak. On letter naming R got eight out of ten correct, with one of his errors being d/b confusion. Subtests such as Rapid Naming, Bead Threading, Digit Span and Digit Naming all showed no indication either in a positive or negative direction. See Appendix 6d.

R was also asked to write his name. He wrote with his left hand. In this task, he missed out a letter of his first name and ended it with a capital letter even though there were only four letters in his name. Letter formation was weak, and one of the three

otherwise correct letters was reversed. His second name was unrecognisable except for the initial letter. When asked to write his name again, he made considerable effort, and this time wrote the reversed letter as a capital, even though he clearly knew it should not be a capital. He then knew he had the right letter.

R attempted to read from his class reading book. While R made what seemed to be a good attempt, more detailed investigation revealed that he was in fact able to decode very little, and had merely learned the pages off by heart. Word and letter identification were extremely poor, and word attack skills had not yet been established.

R was attempting to read from material which was well beyond his ability, and it was recommended that R move to a group which received extra help from a Support for Learning teacher on a regular basis. Further regular monitoring of progress was recommended. This was to be carried out by the school's Support for Learning teacher. Neither individualised intervention nor Network Support from a specialist teacher was considered appropriate by the Head Teacher.

Difficulties were ongoing, and mother formally requested assessment by an educational psychologist in December, 1999. This was carried out over two sessions 23 December, 1999 and 18 January, 2000. As a result of these assessments, R was considered to be dyslexic and an individual structured multisensory programme of intervention from a specialist Network Support teacher recommended by the educational psychologist with the additional recommendation that an "Individual Educational Plan" also be put in place. See Appendix 6d.

These recommendations were carried out, and Network Support from a specialist teacher was introduced in May 2000. By this time, at a chronological age of just over 7 years, R's reading accuracy age on a standardised test of word recognition (Burt) was less than the minimum scoring age of 6 years (SCRE, 1974). Although the Burt Word Reading Test is somewhat dated, it is relatively quick and easy to administer. It does however determine children's reading ages on a fairly small sample of words (Pumfrey, 1985). Because of this however, it can be used speedily without causing stress to the child. It is sometimes used to give an approximation of reading age and give an indication of ability to tackle words without the aid of context.

Progress was reviewed by the educational psychologist in January 2001 and by the Network Support teacher in May 2001. After one year on the highly structured multisensory Letterland programme, R had increased his word recognition score to 7 years, 3 months. He was however coping well with reading material with a reading age of between 7 years 6 months and 8 years. Mother's written evaluation was that R had "really come on in the last year".

In an attempt to track back and investigate pre-school factors which might have affected R's attitude to reading and subsequently his approach to reading, motivation and reading development at the early stages, East Renfrewshire questionnaires were investigated. Because R did not attend an East Renfrewshire authority nursery at time of issue, this was not available for scrutiny.

In summary, for this child neither the DEST nor CoPs1 gave a reliable indication of dyslexia at the age of 5 years, 7 months. However a lack of knowledge of phonics, difficulty in writing his own name and a positive family history of dyslexia did give cause for concern at this stage. Group support up to the age of 7 years had limited benefits, but undoubtedly had given some help. Individualised (in this case individual) support for half an hour per week supported by class teacher and parents at home resulted in an increase in reading age of more than would be expected by the increase in chronological age alone.

Pupil 2 (Female) – (referred to here as M) – Code C43S14P (DoB: July 4, 1993)

Initial assessment by writer: 4, 18 February 1999

Pupil 2 (M) was initially assessed over two sessions due to slow progress in reading and number work, and was drawn to the writer's notice by M's class teacher. Pupil 2 was a Primary 1 pupil, aged 5 years, 7 months when first brought to the writer's notice. In view of the fact that an elder brother (aged 9 years) had previously been assessed as dyslexic, it was considered appropriate that this case should be followed up immediately.

M was assessed using the CoPS1 computer program, and the DEST (Nicolson & Fawcett, 1996). See Appendix 6d for profiles of performance on both assessments. While time taken for the Rhymes subtest of CoPS1 was slow, the acccuracy score was good and there were no other apparent difficulties, and performance was average to above average on all the subtests tackled. Friends, a test of visual sequential memory,

was however weaker than might be expected for a child who presented as being very bright otherwise.

On the DEST, while the Digit Span, Rhyme and Sound Order subtests showed problems, other areas such as Discrimination, Bead Threading and Shape Copying were all good, giving a score which did not indicate M to be "at risk". Balance however was poor when asked to stand on one foot and say a rhyme although she could do each task separately. On Letter Naming, there was evidence of b/d confusion, saying /b/ for /d/ and /d/ for /b/. Her profile on the test overall was extremely spiky, showing some strong indications in dyslexia sensitive areas. See Appendix 6d.

M was also asked to write her name. Her first name was fairly neat and completely legible, but M could make no attempt to write her surname, even though it was pointed out to her that her second name began with the same sound as her first name. M attempted to read from her class reading book. M made a very reasonable attempt at this and detailed investigation revealed that she could recognise quite a few of the words in isolation. She could not decode any words, but had learned the ones she knew through a look-and-say technique. This did not apparently tie in well with the finding from CoPS1 on visual memory, however M was not compared with others in the class on word recognition of words from her reading book. On reflection and bearing in mind that the level of parental intervention was probably high, she may not have compared favourably with her class mates on this task.

Letter identification was weak. M was unsure of many letters, and could not begin to blend letters together. She could count to ten, but wrote the numbers 2, 3 and 5 reversed. She also wrote 6 for 9, though she was able to count to 9 quite reliably. She did not know how to write the number 7 and could make no attempt at this. Appendix 6d gives further detail of the assessment.

M's reading scheme, Story Worlds, was considered to be appropriate even though word knowledge was purely through look-and-say methods. M was able to read from previously prepared material and achieve 98% accuracy. On unseen material however, accuracy was only 90%. As M was enjoying the content and presentation of the reading material, it was recommended that M continue to read from her current

scheme, while phonics would continue to be taught in a multisensory way. Further regular monitoring of progress was recommended.

Concerns regarding progress continued and in February 2000, after referral by M's Head Teacher, full psychological assessment was completed. The report from the educational psychologist stated that M was indeed dyslexic. A highly structured multisensory programme of teaching was started immediately. Progress was good and by January 2001, M's reading ability had increased significantly, and spelling was said to be "progressing well".

M will continue to be monitored by Psychological Services.

Pupil 3 (Male) – (referred to here as S) C42S23P (DoB: February 11, 1994)

Initial assessment by writer: April 29, 1999

Pupil 3 (S) was identified through concerns in school. The writer was asked to assess him as his older brother had shown early signs of difficulty which had persisted and had apparently become quite intractable. It was not known whether the older brother was dyslexic as difficulties appeared to be wider than dyslexia and affect communication. S was aged 5 years, 1 month when assessed on April 29, 1999.

While S is left-handed, there was a lot of uncertainty about which hand to use for specific tasks. The DEST (Nicolson & Fawcett, 1996) was used by the writer in school. S was responsive and understood all the tasks with relative ease. The only areas which were problematic were Rhyme and Shape Copying. Rapid naming was very good. Overall S showed an "at risk" quotient of 0.5 which was not showing S to be the subject of concern. See Appendix 6d for profiles of performance on assessment.

On the CoPS1 computerised assessment, S scored at the first percentile on Rabbits (visual perceptual skill - sequential memory), and at the fourth percentile on Zoid's Letters - also a test of sequential memory. On Names - an auditory/verbal test, he scored at the fifth percentile. Rhymes were at the second percentile, and Wock at the seventh percentile. On all tests other than Toybox, speed of response was not a cause for concern. Performance scores in almost all areas though showed significant difficulties. Races - a test of auditory/verbal working memory - was the only test where S showed a reasonably good performance with a score at the fifty-second percentile.

S knew only eight of the twenty-six single letter sounds, and could read only the word 'in' from a list of very basic phonically regular words. He could not read the title of the reading book he was using in class, and had considerable difficulty with the content, and with writing,

To give an indication of overall comprehension of vocabulary, the British Picture Vocabulary Scale was used, and S was found to be at the 90th percentile rank. While S was demonstrating problems in responding to the teaching of reading, there were no clear signs of dyslexia in the general use of the word. The CoPS1 program however did indicate that there were significant all round problems.

Regular monitoring of progress was recommended, and a phonics programme was suggested for the whole group of children of which he was a member. The others in the group were also showing considerable difficulty with phonics. In addition an exercise programme (Brain Gym) was given with specific exercises to improve fine motor coordination, particularly for handwriting (Blythe, 1992). These support strategies were all carried out in the class context with additional small group help for phonics.

S was reviewed on December 5, 2000 and January 16, 2001 though his class teacher was now reasonably happy with progress. He was seen as part of a group of three as two others seemed to also be having difficulties. S read from his class reading book. Reading was quite fluent, but on material which was reported to have been prepared earlier, he scored only 84% accuracy. On unseen material at the same level however he scored 92% accuracy with one of his errors being repeated twice. This unexpected difference could have been due to lack of familiarity with the researcher, but an additional factor of text difficulty for the latter assessment (even though the pages read were from the same book) seemed more likely. Word recognition on a Burt Word Reading Test (SCRE, 1974) was 6 years, 10 months at a chronological age of 6 years, 11 months. Spelling assessment (Vernon, 1997) revealed a spelling age 5 months behind his chronological age of 6 years, 10 months. However the interesting finding from the assessment of the group was that S showed fewer dyslexic indications than one of the other group members. More time was therefore spent with the other group member to establish the exact detail of his problems with literacy.

In summary, for this child neither the DEST nor CoPS1 showed indications of dyslexia at the age of 5 years, 7 months, though S had an overall extremely poor score on the CoPS1 profile. There did however appear to have been an accuracy/speed trade-off. The lack of knowledge of phonics along with early reading difficulties did mean that there was concern at this stage and early signs could well have indicated likely dyslexic problems. However, bearing in mind current performance in both spelling and reading, along with recent reports from the school which indicate no undue concerns, it does seem that S was a slow starter and is not dyslexic. Group and class strategies for support had positive effects, and it seems reasonable to assume that progress will continue. If there are further difficulties, the writer will be contacted.

Pupil 4 (Male) - (referred to here as P) C44S6P (DoB: March 25, 1994)
Initial assessment by writer: May 17, 1999 at home prior to school entry.
Initial CoPS1 assessment in school by Assistant Head Teacher February 25, 1999 and March 1, 1999, also prior to school entry.

Pupil 4 (P) was brought to local authority notice through parental concerns expressed to the Director of Education and passed to the Head of Service. Pupil 4A (the elder brother) had been assessed at the parents' request as mother was dyslexic and saw similar signs in her son. Pupil 4A was seen by the educational psychologist who in a letter to the parents, gave the results of his assessment without saying whether or not Pupil 4A was dyslexic. As mother was not satisfied with this she requested that the Authority should state whether indeed 4A was dyslexic. On considering the assessment, the Head of Service stated in a letter that indeed this appeared to be the case. The writer became involved when parents requested that the younger brother should then be assessed on the CoPS1 program. The younger brother, P, attended a private nursery. It was suggested that P should be assessed on the CoPS1 computer program by a member of the school staff. This was done by the Assistant Head (Early Stages) on February 25 and March 1, 1999, and viewed by the researcher. P was aged 5 years, 2 months when assessed by the writer. Mother voiced considerable concern that progress seemed to be slow. In view of the fact that the elder brother (aged 8 years, 2 months) was considered to be dyslexic, it was judged appropriate that this case should be followed up by the researcher.

On the CoPS1 computer program, auditory skills were found to be considerably higher than visual but none of the tests showed P to have serious problems. However Zoid's Friends, a test of visual sequential memory, was particularly slow (1st percentile) even though reasonably accurate (43rd percentile). On Rhymes, a test which might have been expected to reveal some weakness, P scored at the 99th percentile, even though the speed score was only at the 19th percentile. Although on the whole accuracy scores reflected no serious problems, scores for visual skills were below average. This however was not a strong indicator of dyslexia.

The DEST (Nicolson & Fawcett, 1996) was used by the writer at the family home. P was very responsive and seemed to catch on to all the tasks with relative ease. The only areas which were problematic were Digit Span (short term memory), Letters (knowledge of letter names or sounds) and Rapid Naming (ability to name familiar objects speedily. Bead threading was quite slow. See Appendix 6d for profiles of performance on both assessments.

Regular monitoring of progress was recommended once P went to school, and P was seen again in December 1999 when P had been in school for four months. The class teacher had concerns that P was not recognising words in his reading book, in spite of obvious practice at home. P was able to guess words from context, and most of his reading book had been learned to the point of memorisation. However when individual words were assessed in a miscue analysis outwith the reading book, P had considerable difficulty. Letter recognition was weak with only 11 out of the 26 letters recognised. There was confusion over b/d and p, with P also saying /n/ for /u/. P could only write 4 letters to dictation. One of these 4 letters was reversed (ɑ). Auditory discrimination skills were weak, as was recognition of alliteration. P had learned using the Letterland method, and could generally remember characters when he could not remember sounds.

Assessment was discussed with P's mother at a meeting in the school. Techniques of paired and shared reading were recommended. Multisensory teaching of the letter sounds using plastic or wooden letters was advised, along with daily practice of letter cards with and without Letterland characters to gain automaticity.

A date was arranged to meet with Mother again six weeks later to discuss progress, and P was seen by the writer in early February, 2000. In the meantime, P was seen

three times a week by the Assistant Head Teacher for extra phonic work which was further supported by a classroom assistant. These additional supports were planned in such a way as to offer additional help in the classroom situation within a small group. When seen, P had made good progress in the interim, and although exhibiting many classic difficulties such as b/d confusion, p/q confusions and sounding out from the last letter of a sequence first, he knew almost all his single letter sounds (except v). He had gained quite a few words by a look-and-say approach, though phonic blending was still very weak, and P made little attempt to blend simple letter sequences for either reading or writing. P was obviously a happy child at school and had no apparent inhibitions about writing. P's class teacher who had a very positive approach further helped progress. Drawings were excellent. Mother was encouraged to continue with the present model of help at home, as this was proving successful and motivating.

P was again seen in May 2000 to assess progress. There had been measurable improvement in phonics, and P knew all his single sounds, and was beginning to blend. P was using the Link-up reading scheme. Although he did not always recognise the words his word attack strategies were good and he tried to sound out words which he did not immediately recognise. This strategy was reasonably successful though there were still some words he could not decode.

While this was good progress for P, he was not making the type of progress in dealing with written literacy skills which might have been expected for a pupil of his verbal ability. Numeracy skills were considered, and P was confused about some of his number recognition, saying for example 50 for 15 and 33 for 13.

By December 2000, P had increased his phonic knowledge. Ability to blend had improved, and simple consonant/vowel/consonant words (cvc) such as 'met' could be blended though there was a lack of automaticity. On a standardised test of word recognition – Burt Word Reading Test (SCRE, 1974) - P got only 22 words right. To reach the minimum reading age score of 6 years, 4 months, a score of 27 would have to have been achieved. P's reading age at a chronological age of 6 years 8 months was therefore less than 6 years, 4 months. While because of its age, norms may not be completely accurate, nonetheless P's score had to be considered as giving concern. Although P showed an improvement over previous monitoring visits, it was apparent

that he was not making the progress which might have been expected in view of the additional intervention he was having. Mother felt that it may be an appropriate time to seek psychological service assessment. In view of the likely wait to see the school's educational psychologist, the researcher agreed that referral should be made. Further recommendations were made to continue with previous suggestions, with an emphasis on maintaining self-esteem which was still high.

P was followed up some months later, when it was discovered that, "Mother had changed her mind and no longer wished P to "go through" psychological assessment as he was already getting support. While P still has some difficulties with reading and spelling, these difficulties have been minimised and should not prevent him accessing the curriculum fully. Additional support is continuing, and the school's knowledge of family problems have reassured the mother that any further difficulty will be dealt with effectively by the school.

Pupil 5 (Male) - (referred to here as F) C11S10P (DoB: February 16, 1991)
Initial assessment by writer: November 4, 1996 in school using DEST.

Pupil 5 (F) was brought to the writer's attention by both the school and the parents as both father and an older sister were both dyslexic and F had made poor progress in reading in Primary 1. He was seen in Primary 2 and initially tested using the DEST material. His attention was good throughout and from this test, there was little indication that F was experiencing dyslexic difficulties. However, because of the poor progress reported in phonic work, assessment was made of reading and phonics.

F had adopted strategies of guessing words from context and was able to make very reasonable sense of the material read. However in decoding out of context, he had very little word knowledge and poor word attack strategies. Phonic knowledge was weak and F was still unsure of several single sounds and was unable to blend those he did know. Intervention strategies were recommended and further monitoring agreed. See Appendix 6d for report.

He was seen again in April 1997 by which time he was attempting to use the phonics he knew in order to blend words and there were clear signs of progress in all areas of his work though by now there was a clear gap in literacy skills between F and the rest of the class. F was clearly bright, though no formal assessment of IQ had

been done at this point. Referral to the educational psychologist was made, and confirmation of dyslexia was received.

Further monitoring by the writer revealed that in spite of progress, on a Neale Analysis of Reading Ability, F's reading accuracy by the age of 7 years 7 months was still less than 6 years 1 month, though his comprehension measured 7 years and would have been more had he been able to decode further (Neale, 1997).

The psychologist's recommendations included the intervention of specialist Network Support which was then put into place. F was placed on a structured multisensory programme of teaching for half an hour once a week with daily backup from class teacher and parents. The SEN assistant who was in the class also helped provide reinforcement work. The most recent report from the Network Support teacher in June 2001 indicates that F is now reading material at the 8 to 8.5 years level, still 2 years behind his chronological age. See Appendix 6d for Network teacher's report.

In view of the support which has taken place, F's literacy difficulties must be considered "persistent", and in terms of the British Psychological Society's (1999) definition would constitute fairly severe dyslexia. F would also require accommodations to be made in order to be able to demonstrate attainment in story writing and understanding of written material. Chapter 18 will describe some of the accommodations which may be required to enable F to be able to demonstrate attainment.

Pupil 6 (Male) - (referred to here as A) C46S5P (DoB: July 7, 1994)
Initial assessment by writer: February 16, 2000 in school using DEST.

Pupil 6 (A) was identified through parental concerns expressed to the researcher while A was in Primary 1. A had an elder brother who had been assessed as dyslexic. Mother felt that he had suffered through late assessment, and that self-esteem and motivation had been lost before the difficulties were recognised. She did not wish this to happen with A. Mother too considers herself to be dyslexic. As mother was adamant that she wished early assessment, the school was approached and the suggestion made that assessment be carried out. At this point, no concerns had been noted in school, and there was a little reluctance to comply with mother's wishes. However, with reluctant agreement, the Dyslexia Early Screening Test was used by

the researcher in February 2000, and results were a clear negative. See Appendix 6d for assessment profile. Mother was informed of this along with the recommendation that A should continue to be monitored to ensure progress continued appropriately. A was a chatty, happy child who seemed to have no major problems, though was a little slow to catch on to some phonic skills. His class teacher was aware of this, and was making an effort to ensure that he kept up by giving extra practice in class and encouraging some extra input at home in the evening.

Although East Renfrewshire were no longer using the CoPS1 test for screening at the time of A's assessment, the test had already been used by a private educational consultant. The graphical profile was not considered until after the initial assessment had been completed. However, consideration of A's CoPS1 profile revealed some concern over visual sequential memory with a score at the 18th percentile. Low scores were recorded for both Toybox and Rhymes, though these were not low enough to indicate cause for concern. Toybox is a test which is reputed to be able to indicate a child "who has difficulty with visual 'whole word' (look and say) methods which can lead to early discouragement and frustration" (Singleton, Thomas & Leedale, 1997, p. 2 – 26). It can sometimes identify children who have difficulty in applying verbal labels and holding them in working memory. The Rhymes test looks at skills of phonological awareness. All other subtests fell within the average band except Wock (auditory discrimination) which was excellent. No scores were found in the "risk" band.

In summary then, the CoPS1 profile showed no significant cause for concern though for an outwardly bright child higher scores, it seemed, might have been expected.

In September 2000, parents were still expressing concern about rate of progress, and A was again seen by the researcher. At this point, A had a chronological age of 6 years, 2 months. Assessment of phonic skills revealed that A confused p, d and b. He knew all his other single sounds well. He could blend simple letter combinations, but said pa for ba, pi for bi, be for pe. In words, A said dap for dab, pe for be. These confusions were clearly affecting his overall ability to decode, but he could on occasions self-correct when the meaning was clear from the context. On reading from his class reading book (Ginn 360, Level 3, Set 3) A scored 92% accuracy though it

was clear that he had practised the material. On unseen material, he scored only 66%, revealing that the material was frustrating for him and required an excessive amount of practice for him to commit the pages to memory, the strategy he employed to convince his teachers and his peers that he could read. On a Burt Word Reading Test (SCRE, 1974), albeit with considerably dated standardisation, A did not score enough to meet the minimum requirement. It was therefore recommended to Mother and to the school that A should be seen by an educational psychologist though it was also explained that there might be some time to wait as there would be other children to be seen who would already be on a waiting list. Mother was pleased as she felt that she would now know if her son was dyslexic.

By February of 2001, A was still waiting for assessment and mother was again becoming anxious. On taking advice from a friend who works for the local Dyslexia Support Group, she wrote to the Head of Service to attempt to move matters to a more acceptable stage from her point of view. She also telephoned the researcher to ask what she could do to support A at home. She was advised to telephone the school for an appointment but with the proviso that the researcher would be present to help identify any strategies which could be put in place. Following this, A was assessed by the educational psychologist who stated that the difficulties were of a dyslexic nature, but were not severe. He was discharged from the psychologist's care. Mother continues to be concerned.

Pupil 7 (Male) - (referred to here as K) C47S1N (DoB April 2, 1995)

Initial assessment by writer: May 15, 2000 at home prior to school entry.

Pupil 7 (K), a boy, was identified by the nursery as giving cause for some concern. His mother had reported to the nursery head teacher that his father was dyslexic. The reason for the initial concern was that K had been developing well until half way through his pre-school year at nursery when he started soiling himself. There were worries that this would not only affect his time remaining at nursery but would also affect his schooling. K was extremely anxious about the situation, and his anxiety appeared to be exacerbating the situation. The writer agreed to see K at home after nursery. DEST was used to give an initial profile. K was not particularly attentive, and was simply not interested in two of the tests which referred to phonology –

Rhyme and Phonological Discrimination. The writer could not be sure whether this was due to the difficulty K felt or to the fact that there were more interesting things to do. However, attention for the other subtests was fairly good, and scoring seemed to be indicative of ability. The fact that these two subtests were started but not completed was regarded as indicative of some problems in these areas, although some reservations were noted on the score sheet. See Appendix 6d.

During the summer of 2000, before K started school, the "bowel problems" settled. Achievement at school was reported as fine and by Easter 2001, mother was "pleased with progress so far" (East Renfrewshire questionnaire to parents, spring 2001). A few reservations were however reported by the school, and as K's older brother had been assessed as having "a mild difficulty of a dyslexic nature" in October of 2000, a further visit by the writer was arranged to see K and discuss with mother the plans for ensuring appropriate provision.

Mother stated that as K's brother had been seen by an educational psychologist subsequent to the visit by the writer the previous summer because of spelling difficulties. A mild dyslexic-type of spelling problem was assessed by the educational psychologist and recommendations were made to the school. Possible special arrangements for Standard Grade or Higher Grade exams may be needed and mother has been assured that this will be arranged if necessary.

Due to family history, K had also been seen by the school's educational psychologist who had assured mother that there were no signs of specific problems of a dyslexic nature, though it was too early to say that there would not be any spelling problems later. Word recognition skills however were developing as would be expected and K seemed to be progressing well. In phonic work, K was able to decode 2 and 3 letter blends. General knowledge and word recognition were reported to be good. The class teacher's report confirmed this though there were a few concerns over lack of eye contact, flapping and difficulties with turn-taking. The Social Use of Language programme had been put in place and all were happy with progress.

Pupil 8 - (referred to here as Z) C45S15P (DoB: August 16, 1995)

Initial assessment by writer: 11 September 2000 at home using DEST

Pupil 8 (Z), a girl, was assessed after concern was expressed by the Nursery Head Teacher. Although the Nursery were not aware of any real learning difficulties, Z's grandmother had stated that she and her daughter (Z's mother) were both dyslexic. Z did however lack concentration for tasks in the nursery. As it was known that the writer was researching dyslexia at the early years, Z was considered suitable for further investigation, with a view to intervention if required. As referral was made at the end of the nursery session, arrangements were made to see the mother and child at home immediately after Z had started school.

Z was seen at the end of the school day. This was not a good time, because Z was tired and uncooperative and was using the occasion to obtain sweets from her mother. However the four subtests of the DEST which were conducted satisfactorily did show Z to be highly "at risk". See Appendix 6d. The opportunity was taken to discuss the matter of the family's history of dyslexia with mother.

Both mother and grandmother were self-diagnosed and had never had a formal assessment. The reasons given for suspecting that they were dyslexic did however seem quite acceptable, Mother reported that she could now read, but often had to reread to ensure that what she had read was accurate.

It was decided that as Z was still settling into school life, she should be left to see how she progressed in the more formal environment, and monitoring of progress in school would ensure that any difficulties experienced were not neglected. The use of the CoPS1 program had been discontinued by the time Z was seen so was not appropriate. However Primary 1 screening was in place using the writer's Screening Programme. This was completed in January of 2001, with intervention thereafter, and further follow-up screening undertaken in May 2001. Phonic knowledge, look-and-say word recognition, and writing progress were all areas of continuing concern which were noted at the first stage of the screening. On repetition of polysyllabic words, 'spaghetti' was said as 'subetti'.

Intervention was put in place with additional time being given by the school during early intervention time. Progress was made and noted. See Appendix 6d for detail. It is the writer's opinion that further monitoring will be required as word knowledge is

still relatively weak in view of the intervention which has taken place. It is likely that an educational psychologist will see Z in 2002 with a view to confirming dyslexia.

Pupil 9 (Male) - V - Not an East Renfrewshire pupil (DoB: July 27, 1992)
Assessed December 5, 1998

V is the third child in a family of four children. There are two older girls and one younger. V is the only son. V was brought to my notice by his father, a fellow student at University of Strathclyde. The family had come to this country from Brazil and both parents were studying in Scotland. Through listening to discussion of the content of this study, father thought he recognised many of the signs of dyslexia in his own son.

Mother had also been experiencing difficulties in her studies since coming to this country some two years previously. She has now been assessed through the university system, and is reported as dyslexic. She considers that dyslexia is not generally recognised in Brazil, certainly not in the area from which she comes.

Both parents speak Portuguese as their first language, though they now both speak English to the family at home. The eldest three children all learned to speak in Portuguese, though V was reported by his parents as being very slow to learn to speak. When V was four the family came to Scotland and V started to learn English. V's English is now (at the age of six and a half) excellent, speaking with a slight Scottish accent. V no longer spoke Portuguese, though when older family members were visiting and speaking in Portuguese, it was clear that he understood what was being said. There are also a few Portuguese words which father reports that V confuses with their English equivalents, and uses instead, thinking them to be English words. V receives support in school from a teacher of English as an additional language (EAL teacher).

V, not being a child in my own local authority, was assessed at home. I saw him on a Saturday morning, on the day on which the first snow of the winter had just fallen. V was not unexpectedly more interested in the world outside than he was in being assessed. The CoPS1 computer program however managed to capture his attention initially, and he agreed to play some games on the computer. This led to some further investigation of reading and writing. The use of the CoPS1 program

however also revealed some very interesting insights into the use of the program with children from different cultural backgrounds, for example V had never seen a goat before and did not know what it was. As part of the task he had to remember the animal though not name it. As he had no word to help him retain the animal in memory, he could only use a visual strategy to picture the animal in his mind, making his processing different from children from an English speaking background who would be likely to have the advantage of naming the animal as an aid to memory.

From this brief and curtailed assessment, it was clear that V was having difficulties in reading and writing. Coordination for handwriting was poor, and V had quite severe difficulty in writing his own name though he managed his first name successfully. Word recognition of vowel-consonant-vowel (vcv) words, such as cat, man, out of context was extremely weak, and mother reported that reading from his reading book where the words were in context, was problematic too. There was clear evidence of work having been done to improve V's phonic knowledge, and V could recognise some of the letters of the alphabet, though he said /d/ for /p/, /t/ for /q/, and occasionally confused letter names with sounds.

Recommendation was made to the parents that V should have a full psychological assessment, as he was certainly exhibiting many of the signs which would be expected for a child at risk of literacy failure due to dyslexia. This recommendation was followed up by a phone call to the Head Teacher of V's school to explain what had been done. A referral had already gone to Psychological Service for assessment but was likely to take some time as V was not seen as a major priority "in view of his age".

V returned to Brazil the following year. Although he had been seen by an educational psychologist in Scotland, as dyslexia is not recognised in Brazil, he receives no specialist help there. His parents however are now knowledgeable about the difficulties he experiences and treat him with considerable understanding.

Discussion

This section of the research was carried out mainly to investigate the usefulness of early assessment instruments which claim to be reliable in identifying dyslexia at an early stage. It was hoped that it would also indicate ways forward for the Local

Authority with regard to both identification of dyslexia and intervention. While the literature accompanying both the DEST and the CoPS1 program claims both reliability and validity for these instruments, their use needed practical evaluation in a real world context. Parents of children who have dyslexic family members bring their concerns to local authority personnel often at an early stage, and therefore this was an appropriate group to follow up. The main instruments studied were the CoPS1 computer program (Singleton,Thomas & Leedale, 1996, 1997), the DEST material (Fawcett & Nicolson, 1996a) and the writer's own early screening tools.

From the above case studies it can be seen that neither the CoPS1 computer program nor the DEST could be said to assess dyslexia dependably. While in some cases they did give cause for concern, certainly in the case of the CoPS1 program, some children who might be described as "bright" found strategies for coping with the program and achieving reasonable degrees of success throughout, even though they later went on to be assessed as dyslexic by an educational psychologist.

West (1991) and Hercules (2001) suggest that creativity and artistic skill in dyslexic individuals may be superior to that of non-dyslexics. However early attempts to establish if creativity in young children who were likely to be dyslexic could be used as a positive indicator of dyslexia were found to be of little benefit in the age group studied. This does not mean that in the dyslexic population as a whole, there is not greater creativity, but in early years dyslexic children superior creativity was not found. The first few attempts to assess creativity were unsuccessful using the tool devised, an adaptation of an original idea for creativity assessment developed by Verduin and Jellen (1996) and varied by this author. Therefore, these were discontinued after the pilot stage. Case study children found the task very difficult, and very little sign of creativity was apparent at this stage. See Pupil C43S14P in Appendix 6d. It is likely that the age group of children being studied was too young for creativity to have developed. As the current study related to pre-school and Primary 1, further investigation of this area with an older age group was not relevant, so no further work was done on this particular aspect. A simple "draw-a-man" task gave indications of early art ability and pencil control skills for art work, and seemed to be of more general use, but there was not enough research evidence to establish if it

might have been a useful tool in the early assessment of dyslexia. See Pupil C45S15P in Appendix 6d.

As the findings of Snowling (2001) suggest, it does not seem useful to classify dyslexic children into subgroups, or indeed those who may be dyslexic, into subtypes because "all taxonomies leave a substantial number of children unclassified". From the above descriptions, it can clearly be seen which children are having difficulties and which were not. To have attempted to subcategorise when there was still uncertainty as to whether the children were dyslexic or not would have had no benefit to the local authority at this stage. A main point however was that not all children who were struggling with early literacy skills were receiving special help, and in some cases this is what brought their difficulties to the notice of the researcher. What is clear from the case studies however is that not all children were making good progress, even when special support was in place. This is what was found by Reason & Morfidi (2000). Dyslexic children by definition (BPS, 1999) have persistent difficulties in acquiring literacy. In Reason & Morfidi's study, specialist help and phonological teaching was put in place for the children, and overall, "the children's standardised scores remained very low" (p. 239).

In the local authority context, subcategorising at an early stage is unlikely to prove helpful to the teaching of most class teachers, however in the hands of a few specialists who have studied the implications of such teaching, at a later stage it is possible that certain sub-classifications may be useful (Reid, 1997). What can however prove useful is to have a knowledge of children's strengths and weaknesses, not to categorise, but to enable the use of the child's strengths to develop skills at which they are weak. Hence the child who is a good visualiser may well benefit from being encouraged to use her strong visual skills to enhance memory.

In carrying out this section of the research, the researcher has come across great variation in the level of cooperation from school management. Initial assessment by the researcher was in all cases carried out without resistance, but from the point of assessment onwards, attitudes towards intervention and further psychological assessment have varied considerably. Recommendations of referrals to educational psychologists at an early stage have met with extremely mixed responses from both school management and educational psychologists themselves. In some cases, levels

of cooperation have been extremely high, in others much less so. In all cases, attempts to maintain partnership have been pursued.

Reluctance to schools intervening for young dyslexic children were often attributed to the fact that there were children with more serious difficulties who needed support. Management and educational psychologists sometimes felt that children with more apparent difficulties such as Down's Syndrome and severe autism, should receive priority over children who were struggling for less obvious reasons with literacy. School management in some cases too were citing difficulties in distinguishing between children who were dyslexic and those who had more general learning difficulties, as a reason not to intervene. "If we do it for one, we have to do it for all!"

The reasons for resistance and reluctance to intervene on what parents and the researcher considered the children's best interests become more easily understood through a systems view which takes in the perspectives of all concerned – teachers, educational psychologists, parents and the young people themselves. This will be discussed in ensuing chapters when the various perspectives have been explored further. The case studies however must be regarded as a "step to action" as advocated by Adelman et al., 1980 (cited in Cohen & Manion, 1994, p. 123).

This chapter has considered a group of 9 children who all showed indications of possible dyslexia at an early stage. Through a process of intermittent monitoring, their progress has been charted. For those who were later assessed as dyslexic, though it could not prevent literacy difficulties developing, support was beneficial in maintaining motivation and self-esteem. For those who have not been assessed as dyslexic, the support has for the most part helped avoid entrenched literacy problems.

CHAPTER 9

Structured interviews with head teachers, dyslexic pupils and their parents

This chapter uses a process of triangulation to investigate the perspectives of dyslexic pupils, their parents and head teachers. Some implications for policy, practice, management and provision are considered here and further discussed in Chapter 17.

Introduction

Traditionally dyslexia has only been identified once a child has been in school for a considerable time. Recent research evidence however suggests that delay is unnecessary, and early intervention could prove much more beneficial if screening were implemented before school entry (Glascoe, 2000). In order to establish and draw conclusions on appropriate management and provision for any early difficulties with subsequent implications for policy, it is important to find out exactly what those who are affected and those who carry influence think about such matters. It was with this in mind that questionnaires for structured interviews were drawn up and administered by the writer to dyslexic children, their parents and their head teachers. All East Renfrewshire schools, including nurseries, were represented in the head teacher survey. Every school which had at least one child identified as dyslexic was included in the survey of parents and young people.

"Triangulation has special relevance where a complex phenomenon requires elucidation" (Cohen & Manion, 1994, p. 239). Because of the likelihood that parents', children's and teachers' views would differ considerably, one specific method of gathering data would not give a true reflection of East Renfrewshire views. It was therefore considered appropriate to consider dyslexia from the perspectives of the children themselves, their parents and their teachers. Similar questions for each of these three groups, would reveal areas of commonality as well as areas of difference. In addition quantitative data would give further validity to the process of establishing how "dyslexia" is viewed in East Renfrewshire, and to determine possible ways in which management, policy, provision and practice might alter to suit the needs of the various groups. Triangulation was therefore considered an appropriate method of study for this purpose.

As educational psychologists are the group most involved with assessment and labelling of dyslexia (Paradice, 2001), their views are also taken into account. Because the methodology used was slightly different, this part of the research is described separately later in this chapter. Effectively this resulted in a process of quadrangulation where questions were the same or similar. When this was the case, results are reported alongside the others. The interview data are enhanced with additional questions, mainly relating to assessment, being asked of the educational psychologists and these are reported separately in the next chapter.

Background

The title and content of this study concerns "dyslexia". Similar studies and books by the present author have been entitled "specific learning difficulties (dyslexia)" Crombie (1990; 1997a; 1997b). The change in terminology reflects a wider acceptance of the word "dyslexia" in common usage (Poustie, 1997). As has been seen, the use of terminology has been a contentious issue over the years (Pumfrey & Reason, 1991; Riddell, Duffield, Brown & Ogilvy, 1992), and this remains the case (BPS, 1999; Woods, 1998). Various descriptions and definitions have been discussed in previous chapters. Pumfrey and Reason state that quite clearly "specific learning difficulties" refers to "a variety of conditions" whereas "dyslexia" appears "unitary in character" (Pumfrey & Reason, 1991, p.6). Poustie (1997) feels that, "some people believe that specific learning difficulties is the same as dyslexia others believe that it is not" (Poustie, 1997, p. 3). In seeking to establish the views of parents, teachers and the children themselves, it is first essential to discover what their understanding of the term is, and if they share a common perspective. It was considered important too to establish if there was felt to be a difference between dyslexia and other difficulties which children might have in developing literacy. As early as 1979, the Fish Report considered it important to distinguish between children whose backwardness in reading, writing and spelling might have been caused by social, environmental, cultural or emotional factors from those who had specific learning difficulties (DES, 1979). It seems quite illogical to the present author however that policy should be developed on matters which concern teachers, pupils and parents without a common understanding of the terminology in use. Questions designed to elicit responses to

issues of terminology were therefore presented first in the interviews to discover if there are areas of general agreement.

Often parents seem to feel that not enough is being done by education authorities for their child's dyslexia (Nance-Dewar, 2000). However without a common understanding of what dyslexia is, it is difficult for this author to imagine that meaningful policy can be developed, or that there can be a true partnership between parents, pupils and professionals. Without that common understanding too, provision will also remain at the mercy of local authority budgets, changing in line with changes in local authority personnel and their beliefs as to what dyslexia is, or even if it exists at all (Paradice, 2001). As a starting point in developing local authority policy on early stages dyslexia provision for East Renfrewshire, it was decided to investigate the main points of agreement and disagreement between professionals, parents and their children on their understanding of the terminology and follow this by investigating other related factors. These will later be reported and discussed in detail.

The interviews

While acknowledging that head teachers and class teachers may well differ in their views, head teachers were considered by the writer to reflect the ethos of the school. Individual class teachers were not interviewed as it was felt that each child would encounter many class teachers in the course of their schooling. Head teachers, having responsibility for the implementation of authority policy and management within the school context, it was hoped, would generally (most accurately) reflect the ethos and attitude towards dyslexia which characterised their schools. In legal terms too, it seems head teachers are considered to be responsible for decisions on identification and appropriate teaching for dyslexic pupils. In considering an appeal to the House of Lords for failure to identify and make provision for dyslexia, Lord Nicholls of Birkenhead stated:

> A teacher must exercise due skill and care to respond appropriately to the manifest problems of such a child, including informing the head-teacher or others about the child's problems and carrying out any instructions he is given. If he does not do so, he will be in breach of the duty he owes the child, as well as being in breach of the duties he owes his employer, and

> his employer will be vicariously liable accordingly. (House of Lords, 2000a, p. 8)

This statement carries an assumption that the head teacher will be able to recognise and advise the class teacher when there is a problem of a dyslexic nature. The head teacher was therefore considered the most appropriate person on the school staff to be interviewed.

A central issue, perhaps the central issue, in the dyslexia debate is that of terminology. It was highlighted in Chapter 1 that definitions and understanding of dyslexia are by no means agreed. There are some who view dyslexia as clearly distinct in nature to poor reading on its own, and there are those who view dyslexia as part of the continuum of reading ability (Riddell, Duffield, Brown & Ogilvy, 1992).

To obtain the views of dyslexic children, it would have been inappropriate to use methods other than interview due to the reading difficulties which dyslexic young people experience. Because of the likely hereditary nature of dyslexia, it could have caused unnecessary difficulties for parents who themselves have reading difficulties if they had been asked to read and complete written answers to questions. It was therefore decided that the most effective and reliable method of obtaining information was through a structured interview, and although this was not entirely necessary, the benefits of this method were considered desirable for obtaining head teachers' views as well. In addition to the need to take account of possible reading and writing difficulties, the interview method of obtaining information could ensure:

- 100% returns,
- opportunities for probing and asking for further elucidation.

Information could then be reduced by the coding of the data obtained.

These are some of the advantages which Tuckman (1972) stresses and which in a small local authority context seemed important. The disadvantages which he also stresses, time and limited numbers, were not considered to be important to this study as a representative sample of parents and young dyslexic students could be obtained in the time available, and due to the small numbers of schools and nurseries (37), all head teachers could be interviewed. While Cohen, Manion & Morrison (2000) point out that some people may show more inclination towards complete honesty through the questionnaire technique, the advantages of obtaining a 100% return without the

need for respondents to read or write outweighed any disadvantages. The opportunities for probing for further information added considerably to the quality of the data. To try to obtain as unbiased information as possible, respondents were interviewed on what was considered to be their own "territory": head teachers in their own schools (Dowling, 1985) and parents and pupils in their own homes. There was no reason to believe that respondents would not be honest, and had questionnaires been sent, there was the possibility, if not likelihood, that the respondents would obtain a dictionary definition of the terms before replying rather than giving their own views.

Parents, head teachers and children were all questioned about terminology. In addition, there was a question to establish if dyslexia was considered as another term for literacy problems in general. In view of the controversy surrounding the term "dyslexia", a question was asked to ascertain if there was any desire to avoid the term altogether.

The writer wished to ascertain if on reflection parents were aware of their child's dyslexia at an early age. A question was therefore asked to elicit the age when parents became aware of differences and/or difficulties in their children. The children were asked when they became aware that they were experiencing difficulties. In order to understand if children's awareness of their difficulties at an early age helped or hindered them, the children were asked if it would have helped to have their difficulties acknowledged earlier.

Children were asked to say if there was a particular difficulty which they now associate with dyslexia which they felt was present at the early stages. This was to establish if there was any one particular indication which parents or children felt could identify dyslexia at an early age.

Young people were asked if they felt that there was anything which had helped them to cope with their difficulties or anything which had hindered them. This was to establish if there could be any generalised strategies which might be put in place early to help young dyslexic children.

Bearing in mind the visuo-spatial strength which seems to be present often in dyslexic people (Hercules, 2001; West, 1991), questions were asked to establish if this would be identified as a strength by the parents and/or the young people, or if there

were any other common areas of strength which are relevant to dyslexic children and could be used to aid children's learning.

Parents were asked if there was any known family history of dyslexic problems, to establish if the heredity factor in dyslexia might be worth exploring as a means by which an authority might be able to identify children at an early age "at risk" of later failure in literacy learning. The writer also wished to deduce if parents and all head teachers were aware of the likely heredity factor in dyslexia as had been established by studies such as De Fries, Alarcón & Olson (1997).

Questions were also asked of parents, children and head teachers to ascertain whether they felt that the authority could do more to identify and provide for dyslexia in the context of the school. Parental perceptions of children's development has been found to be a reliable indicator of ensuing difficulties on school entry, although reliance on parental concerns alone could result in some children being missed. Parents are often the initiators of concern about their child as was seen in the last chapter. According to Glascoe (2000), parents' views therefore are important as a cost-effective means of detecting any likely problems in school.

"Perceptual, behaviour and self-esteem problems are found to co-exist from school entry, and subsequent reading failure is likely to reinforce rather than cause reading failure" (McMichael, 1977, p. 125). Children with low self-esteem were found to have immature performance on reading readiness tests. It is not clear whether the low self-esteem is likely to be caused by associated difficulties, such as poor short-term memory and poor co-ordination or whether there may be other factors unassociated with difficulties in learning to read. Early failure and the accompanying low self-concept, McMichael postulates, are difficult processes to reverse. To determine if self-esteem was considered by the dyslexic young people to be a problem and was affected by the knowledge that they are dyslexic, the young people interviewed were asked how they felt about themselves.

Head Teachers' interviews were very similar to those of parents and children, but the Heads were asked about their perceptions of their abilities to recognise dyslexia, or ensure that it was recognised in their schools. In addition, Heads were asked about the nature of their catchment area and the number of dyslexic children in the school. For a full picture of the content of the structured interviews, see Appendix 7.

Additional information on many of the issues was obtained through a questionnaire to local authority educational psychologists. Though some parts of the psychologists' questionnaires were different a few concerning the nature of dyslexia were the same.

Method

Pilot

A structured interview was carried was out with one Head Teacher from outwith East Renfrewshire. This was to ensure that the comments of all East Renfrewshire head teachers could be counted in the final evaluation. Comments from this head teacher were taken into account and minor amendments were made to the text of the questions. In the same way, a structured interview was carried out with one parent, this time with an East Renfrewshire parent who was not to be counted in the final results. No changes were recommended, but as a result of this first interview, the parent suggested that her child should also be interviewed as it would be important to take children's views into account. It was this suggestion that originally gave the writer the notion of using a process of triangulation. This suggestion was very much appreciated by the writer and and a similar, though more simply worded interview text was drawn up and administered to a dyslexic child as a pilot. It became apparent that the age of the child would be important to level of understanding, and language might need to be altered slightly to suit the age of the interviewee. This could be done by the interviewer at time of interview without altering the meaning of any of the questions. See Appendix 7 for samples of structured interview texts.

The Interviews

The majority of the interviews were carried out between the Autumn of 1998 and the Spring of 2000 with head teachers, parents and the children themselves. A few further interviews were carried out at a later stage to increase the validity and reliability of the data. Through increasing the total number of interviews conducted it was hoped to ensure that the sample was truly representative. In order to make the interviews acceptable and non-threatening to both parents and children, these interviews were carried out in the family homes in the evening. This was to avoid any inconvenience and to ensure that both parents and children felt at their ease in answering questions without any identifiable influence or pressure from the school.

The Interviewees

Initially, at a Local Authority evening meeting for parents on helping children with reading difficulties, parents of dyslexic children were asked if they would volunteer to be interviewed, and these parents were interviewed first. At the same time they were asked if they would have any objection their child being interviewed with similar questions. As all schools were not represented in the original sample a further sweep of schools was made to ensure that schools which had at least one dyslexic child were given a voice. Schools from which there was no interview data from the first round of interviews were telephoned and Head Teachers asked to identify any dyslexic parents and children who might be willing to be interviewed. The only schools which are not represented are those who stated that they had no dyslexic children in the school. Members of school management were asked to provide the names and phone numbers of parents of children who had been assessed as dyslexic, and to make the initial approach by explaining that the researcher, the Network Support Manager, was involved in research into dyslexia, asking if they would be prepared to assist in this research. A follow-up phone call was then made by the researcher to arrange a convenient time to visit. The researcher thus sought to ensure that there were representatives from every school in the Local Authority area, and allowed for the procedure of triangulation to take place - head teachers, parents and children were interviewed and their responses considered.

Head Teachers of all schools – nursery, primary and secondary -- were contacted by phone and asked for an appropriate time for the researcher to visit, asking for around 20 minutes of the Head Teacher's time to be set aside. All Head Teachers willingly agreed to be interviewed.

The texts of the interviews were all typed into the NUD*IST (Non-numerical Unstructured Data Indexing Searching and Theorizing) computer program for further analysis and coding. To ensure anonymity, each person interviewed or who had completed a questionnaire was given an identification number so that data could be cross-referenced between schools, children and parents. The following code information was assigned to each interviewee:

C = Child or young person

PF = Father

PM = Mother

S (+ number) = School

N (+ number) = Nursery School

P (as suffix) = Primary

S (as suffix) = Secondary

NI = School outwith East Renfrewshire.

Thus PM20S15P refers to a parent (a mother) of a pupil (numbered 20) from School 15 which is a primary school. While schools and pupils could be associated, they then could not be identified by name.

Results

In total 35 pupils were interviewed (28 boys and 7 girls) and 30 sets of parents. The reason that there were fewer parents than children was due to the fact that some families had two dyslexic children, one at primary school and one at secondary. When this was the case, both pupils were interviewed as being representative of each of the two schools. Where both parents were present, their views were noted. If there was any variation between the two views, this was noted, but no significant disagreements did in fact occur. In total, there were 4 instances when both parents were present and in all others the mother was the one to respond to the interview, although there was no deliberate intention to exclude fathers. It seemed that fathers were happy to leave answering of questions to the mother, although in a few cases it did become apparent in the course of the interview that fathers were not living in the same home.

The reason for there being significantly more boys than girls was not deliberate, but is indicative of the overall distribution of boys: girls (approximately 4:1) in the dyslexic population as a whole (Crombie, 1997; Pumfrey & Reason, 1991). Although head teachers were interviewed for every nursery, primary and secondary school, no nursery children had been identified as dyslexic, so no dyslexic nursery pupils could be interviewed. The youngest child interviewed was age 7 at time of interview with the ages of the young people varying between 7 and 20. The reason for the 20 year-old was that he was the brother of an existing pupil. As he too had been an East Renfrewshire school pupil two years earlier, rather than interview only the one young

person, the views of both were noted. All other young people were current school pupils.

Two of the children interviewed were being brought up bilingually, one in an Urdu speaking home and the other in a Punjabi environment though both these children's mothers spoke good English. A third pupil had lived with her parents in South America in a Spanish-speaking community, and had spoken two languages as a young child up to the age of 4 years when her parents returned to Britain. All other pupils were considered to be monolingual although many of them were learning another language as part of their curriculum. Additional questions were presented to the parents of the bilingual children. See Appendix 8b. There were not enough data from the bilingual families to draw any conclusions, other than that all were now happy with the provision which was being made.

Data were coded, indexed and searched using NUD*IST software for the Macintosh computer. While this software is intended for asking questions and building and testing theories with mainly qualitative data, it was also possible to see a pattern of more quantitative information emerging as the study progressed. Where this was the case, this information was used to add weight to the arguments already created by the qualitative research process. The value of considering quantitative data alongside qualitative is recommended by several authors (Cohen & Manion, 1994; Cohen, Manion & Morrison, 2000; Robson, 2000).

Table 19. Age and sex distribution of pupils interviewed.

Age at time of interview (to nearest year)	No of pupils interviewed (n = 35)	Male (n = 28)	Female (n = 7)
7	1	1	0
8	2	2	0
9	3	3	0
10	8	7	1
11	6	3	3
12	5	4	1
13	4	3	1
14	3	3	0
16	1	0	1
17	1	1	0
20	1	1	0

Note. *Mean Age 12 years.*

Pupils were asked for their date of birth. 21 of the pupils knew their date of birth, and 11 did not, with 3 unsure. Dates were checked for accuracy with parents after the interview. 8 of those who did not know their date of birth were aged under 11 years-old with one pupil in this age group unsure.

Question 1. *What does the term dyslexia mean to the respondent?*

A wide range of responses was received to this question. In view of the British Psychological Society (1999) working definition which refers to dyslexia as a problem with "fluent word reading and/or spelling", it was considered appropriate to consider just how many of the respondents mentioned these areas, hence Table 20 shows the numbers of respondents who mentioned either word or words, reading or spelling, or a combination of the three.

Table 20. What does dyslexia mean?

Group	*n*	Reading	Word/s	Spelling	At least one of three	At least two of three	All three
Nursery heads	6	2	2	0	3	1	0
Primary heads	24	8	9	5	13	6	3
Secondary heads	7	4	1	1	4	1	1
Psychologists	8	5	1	4	6	4	0
Parents	30	16	8	9	21	11	1
Pupils	35	17	5	13	22	13	0

Note. *Table shows numbers of each group interviewed who mentioned each of the three factors.*

Almost all respondents attempted to answer this question though some of the answers were clearly wrong, some were questionable, and others (even those who did not use any of the BPS terminology) had a clear idea of what dyslexia is for those involved. Writing however was a factor which many considered to be important with 28 of those interviewed mentioning writing (9 parents, 4 primary head teachers, 9 pupils, 2 secondary head teachers and 4 psychologists). Only one person (a pupil) stated that he did not know what it was. A discrepancy of some sort was suggested by 13 respondents (1 nursery head teacher, 4 primary head teachers, 3 parents, 1 pupil and 4 psychologists. Pupils and parents mentioned a variety of other factors, such as being poor at remembering multiplication tables, having coordination difficulties, sequencing problems, organisational difficulties, difficulties learning another language and physical problems. "It's different problems with the brain!" responded one pupil. One secondary head teacher felt that the word should not be used by teaching staff as nobody really knew what it meant. He felt that the term "communication disorder" was more appropriate. One nursery head, one parent and one psychologist mentioned words to the effect that dyslexia was on a continuum and covered a range of difficulties and varied in severity. Four pupils described dyslexia as being "dumb" or "stupid".

Investigation was given to whether pupils, parents and head teachers mentioned that dyslexia and specific learning difficulties were the same thing. Four parents, four head teachers and two educational psychologists mentioned that they felt that the two

were the same. Consideration was given to the points referred to in the BPS definition of the term "dyslexia" – reading, word(s) or spelling.

Table 21. What does specific learning difficulties mean?

Group	*n*	Reading	Word(s)	Spelling	At least one of three	At least two of three	All three
Nursery heads	6	0	0	0	0	0	0
Primary heads	24	2	1	2	4	1	0
Secondary heads	7	1	0	0	1	0	0
Psychologists	8	3	0	2	3	2	0
Parents	30	3	0	0	3	0	0
Pupils	35	5	1	1	6	1	0

Note. *Table shows numbers of each group interviewed who mentioned each of the three factors.*

Three parents admitted they had no idea what the term "specific learning difficulties" meant. Five parents and one nursery head teacher thought that it referred to children who were globally slow, and 17 of the pupils said that the term meant nothing to them. One nursery head teacher thought "specific learning difficulties" might apply to a "lack of stimulation" or it might be "a slow child who will always struggle". One parent thought it meant a child who was "not mature enough for his class". One parent and four pupils made a good attempt to answer, but said that they really did not know what it meant. One pupil happily answered, "Well there's the Specific Ocean!". He was not joking.

Four parents, four primary head teachers and three psychologists mentioned that they felt dyslexia and specific learning difficulties were synonymous. Four primary heads, three psychologists, and one parent mentioned that they would expect there to be a discrepancy or that the difficulties would be unexpected in the light of other abilities.

Interviewees were asked whether dyslexia could be distinguished from other literacy difficulties. Three parents, three primary head teachers, one secondary head teacher and one pupil thought that the main difference was that dyslexia would not go

away ("It is lifelong!") whereas other literacy difficulties could be remediated. Some said that other difficulties could be "due to background", not "genetics".

Table 22. Would you say there is a difference between dyslexia and other difficulties with literacy?

Group	*n*	Yes	No	Not sure
Nursery heads	6	6	0	0
Primary heads	24	23	0	1
Secondary heads	7	7	0	0
Psychologists	8	7	0	1
Parents	30	22	5	3
Pupils	35	22	10	3

Typical of the type of response which parents who answered "Yes" gave, was, "Dyslexic children are often quite intelligent but maybe children with other difficulties, there's not the intelligence. They can maybe read but can't understand" (Parent PM22S23P). A parent who gave a "No" response stated, "I'm not sure you should class anything which picks out certain people from others" (Parent PM23S24P). The majority however felt that there was a difference between dyslexia and other literacy difficulties, and that this difference could be established by assessment.

Table 23. Should we use the term dyslexia?

Group	*n*	Yes, use dyslexia	No	Not sure
Nursery heads	6	6	0	0
Primary heads	24	19	3	5
Secondary heads	7	5	1	1
Psychologists	8	4	3	1
Parents	30	25	4	1
Pupils	35	16	16	3

Note: *Although most gave definitive answers, a few answers were modified with "But I'm not sure."*

Discrepancies can be observed between Tables 22 and 24 below due to some interviewees being unsure of the answer. When forced to make a decision, they did so, but added that they were unsure. With regard to the use of the term "dyslexia", one primary head teacher and two educational psychologists said their preferred term would be "specific learning difficulties". One secondary head teacher preferred the term "communication disorder". Two primary head teachers who preferred the term "dyslexia" to anything else, mentioned that there were degrees of difficulty, and acknowledged that dyslexia existed on a continuum.

Table 24. Would you say there is a difference between dyslexia and other difficulties with literacy?

Group	*n*	Yes	Sometimes	No	Not completely the same	Don't know
Nursery heads	6	6	0	0	0	0
Primary heads	24	22	1	0	0	1
Secondary heads	7	7	0	0	0	0
Psychologists	8	7	0	0	0	1
Parents	30	20	0	5	0	5
Pupils	35	21	0	10	1	3

In an attempt to establish whether early identification of dyslexic difficulties would be supported among school staff and educational psychologists, and to discover whether parents felt this would be possible, all were asked if they believed it possible to identify dyslexic difficulties prior to the child going to school, and who should be responsible for this. Four nursery, four primary head teachers, eight parents and one educational psychologist thought that dyslexia could be identified as early as 3 years of age. All nursery head teachers, 13 primary heads, one secondary head, 13 parents and two educational psychologists felt that it is possible to identify dyslexia before children go to primary school. There was no agreement however on who should take responsibility. Answers varied from network support staff to SEN assistants to health professionals to educational psychologists to parents. Several respondents mentioned that it should be a collaborative effort with Network and school management coordinating.

Of those who felt that pre-school identification of dyslexia was not possible, most felt that the earliest dyslexia could be assessed was dependent on the child's maturity, ability and exposure to reading. A primary head teacher felt that dyslexia could be identified from signs as early as 1-year-old. Some mentioned the importance of awareness training which would help recognition.

Table 25. Do you believe it is possible to identify dyslexia before children go to school?

Group	*n*	Yes	No	Not sure
Nursery heads	6	5	1	0
Primary heads	24	16	3	5
Secondary heads	7	1	5	1
Psychologists	8	4	4	0
Parents	30	18	9	3

Interviewees were asked what they would consider as early indications of dyslexia. Answers varied between organisation, sequencing, phonological problems, to lack of concentration, inability to follow instructions, memory, speech and baby talk.

Interviewees were asked to give only one factor. See questions in Appendix 8a to 8d. The reason for asking for only one factor was to minimise the time taken for interviews. However, some interviewees mentioned more than one. When this happened, the other factors were recorded. The most popular answers which might affect pre-school children concerned phonological difficulties and signs of discrepancies. Fifty percent of psychologists mentioned phonology as being particularly pertinent. Reading problems, which could be viewed also as a phonological difficulty, are seen by almost half the young people themselves, as having been associated with their earliest recollections of dyslexia.

Table 26. Particular factors which seemed to indicate dyslexia at an early stage.

Group	*n*	Reading	Writing	Phono-logy	Spelling	Discrepancy	Memory
Nursery heads	6	1	1	3	0	0	2
Primary heads	24	2	3	2	1	7	1
Secondary heads	7	3	6	0	1	1	0
Psychologists	8	1	1	4	0	2	0
Parents	30	5	3	5	2	2	4
Pupils	35	15	5	0	14	1	0

The gap between initial difficulties having been identified, and the confirmation that dyslexia was present is often highlighted to the education authority by parents who feel that there is an unnecessary lapse in time between concerns being expressed and assessment being completed (Glascoe, 2000). Perceptions of parents and pupils on the extent of this gap was pertinent to the study. Pupils were asked when they became aware they were having difficulties and parents were asked when dyslexia was formally confirmed. Qualitative data on this point consisted of children becoming aware of their perceived problems. Pupil C27S6HS reports, "In Primary 1 I started to notice. The teacher shouted at me. In P2 I had a nice teacher, but wasn't keen on school". His mother also felt that there were problems in Primary 1 too, and had gone through a medical neurological assessment before having difficulties labelled at the Primary 4 stage. Pupil C25S7HS stated "I realised in Primary 1 when I

couldn't read the words on these stupid wee cards". Even though Mother had no idea of what her child had said, Mother stated separately, "There was a problem at Primary 1 when the word tin came home". As can be seen from this example, parent and child perceptions tied in with considerable similarity, both in time and type of memory.

Pupils' memories of the time lapse between becoming aware they had difficulties and these difficulties being assessed as "dyslexia" were compared with parents' memories, and overall parents perceived a longer gap than their children, on average 2 years, 1 month as compared to 1 year, 5 months. Tables 22 and 23 illustrate in more detail how these gaps were perceived.

Table 27. Gap between being notified of difficulties or suspecting difficulties and dyslexia being confirmed (Parents).

Time lag	*n*
1 year or less	10
1 to 2 years	10
2 to 3 years	5
3 to 4 years	6
4 to 5 years	3
5 to 6 years	0
6 to 7 years	1

Average: 2 years 1 month

Table 28. Gap between becoming aware of difficulties and dyslexia being confirmed (Pupils).

Time lag	*n*
No lag	4
1 year or less	14
1 to 2 years	6
2 to 3 years	8
3 to 4 years	1
4 to 5 years	1
5 to 6 years	0
6 to 7 years	1

Average: 1 years 5 months

In view of the genetic linkage which recent research has established in family members with dyslexia, a question was asked to establish if parents were aware of any connection in their own family, and also to ascertain if professionals were aware of the likely linkage.

Table 29. Awareness of hereditary nature of dyslexia.

Group	*n*	Yes	No	Don't know
Nursery heads	6	5	0	1
Primary heads	24	22	2	0
Secondary heads	7	3	2	2
Parents	30	24	4	2

Of the parents who recognised a family history of dyslexic difficulties, 12 stated that these were only recognised on the father's side and 9 on the mother's side. In order to establish if earlier recognition would have affected the pupils themselves, a question was asked. Responses would help establish when the children themselves felt that they were old enough to understand the nature of their difficulties.

Table 30. Would it have helped if you had known and understood what your difficulties were at an earlier age? and If yes, in what ways? (Pupils).

Group	*n*	Yes	No	Not sure
Pupils	35	23	9	3

Most pupils felt it would have helped if they had understood the nature of their difficulties at an earlier age. Some said that they had felt "stupid" or "different" and an earlier explanation would have helped them understand why they were unable to complete tasks in the same way as their peer group. Some of those who had received assessment at an early age felt that they would have been too young to understand any earlier. However, the majority were in favour of their difficulties being recognised earlier than they had been. While some young people merely said "Yes" that it would have helped, a typical explanatory answer came from Pupil C9S9P, "I could have asked for more help. I would have felt better about myself."

It seemed important to establish if factors which alleviated children's dyslexia were perceived to be the same between the different groups, or indeed if there was agreement as to the likely factors which helped to make the difficulties easier to deal with.

Table 31. Key factors which might help alleviate dyslexia.

Group	*n*	Support (NST/CT)	Individ. help	Under-standing	Self-esteem	Strategies/ Technology	Staff develmt
Nursery heads	6	0	0	1	1	1/0	0
Primary heads	24	5	3	1	4	6/2	5
Secondary heads	7	1	1	0	1	1/2	1
Psychologists	8	2	3	0	0	1/0	0
Parents	30	10(10/4)	2	6	3	0/2	0
Pupils	35	24(14/5)	3	7	0	1/6	0

Where particular mention was made of support from the Network Support Teacher or Class Teacher, this is shown in brackets. Two nursery head teachers and two primary head teachers could not name any alleviating factor, and three pupils said

they could not name one factor which alleviated their difficulties. Most however felt there were a number of factors which would help, including specialist support. It was the pupils who most expressed appreciation for specialist support, closely followed by their parents. Pupils and parents felt too that understanding contributed to alleviation of their difficulties. Technology was mentioned by only a few. A typical pupil response was given by C17S16P, "Yes, learning how to read. Mrs B (NST), Mrs Bl (class teacher) and Mrs Blank (S for L teacher) all help me if I'm stuck." Head teachers gave very varied responses from "Build self-esteem, praise, one-to-one phonic teaching" (Head teacher S21P) to "Key factor has to be staff development. Teachers need to know what it is and what to do" (Head teacher S20P).

In contrast to this, all were asked if there were factors which hindered their development. Table 32 show some of the main points identified.

Table 32. Factors which hinder the development of children with dyslexia.

Group	*n*	Insufficient Support	Lack of Under-standing	Inappro-priate Teaching	Non-recognition	No/ Don't know
Nursery heads	6	1	1	1	0	0
Primary heads	24	4	2	6	11	0
Secondary heads	7	1	4	3	2	0
Psychologists	8	2	0	0	5	0
Parents	30	1	11	11	11	6/0
Pupils	35	1	3	3	1	16/2

While pupils had stressed "understanding" as a positive motivating factor, they were less forward in mentioning "lack of understanding" as holding them back. Parents however did mention this, and along with "non-recognition" of difficulties, these were seen as the most inhibiting factors for dyslexic pupils with educational psychologists, primary and secondary heads and parents all stressing the importance of lack of recognition being a deterrent to progress. Half the pupils did not mention any factors which were holding them back.

Awareness of strengths of dyslexic children can be important to their development 33 shows the most common responses to this question.

Table 33. Main strengths of dyslexic children.

Group	*n*	Oral skills	Artis-tic	Social skills	Physical skills	Bright	Maths	None/ Don't know
Nursery heads	6	1	0	0	2	3	0	0
Primary heads	24	15	7	4	1	10	6	1
Secondary heads	7	0	2	2	0	0	1	4
Psychologists	8	4	0	1	0	2	0	1
Parents	30	10	11	19	6	2	3	1
Pupils	35	4	11	1	13	0	4	0

While parents felt that social skills were strong, pupils stressed that they were artistic or physically able. Primary heads and parents thought that dyslexic children were often bright or good orally. Half the psychologists mentioned oral skills as being strong while half the nursery heads felt that dyslexic children are often bright. All of the pupils however felt that they had strengths of some kind.

In order to establish if there were factors which the Education Authority could do to improve matters for dyslexic pupils, questions were asked about the role of the Education Authority and about current provision. These two questions could be considered together to establish points which those interviewed wished to highlight. Again there was wide variation, but for the most part there was agreement on the point that East Renfrewshire was making a considerable effort to meet the needs of pupils. Responses included:

> "I think the area is well served." Educational psychologist 7Psy
>
> "I think it is amazing what you have done already. There has been support – the fact that you cater for people all the way up." Parents PMF8S7P
>
> "I thought it was good how they done the lap-top course at our school with two other people who are dyslexic with Mrs Blank (Network Support Teacher). I got quite fast." Pupil C26S26S

"Any parent would have confidence in East Renfrewshire that their child will get the support." Nursery head S33N

"East Renfrewshire have it in place." Primary head S22P

"I'm quite impressed by what happens." Secondary head S26S

While responses were generally very positive, there were also comments that there was not enough support or that not enough money was being spent on dyslexia in budgetary terms. These comments were made by a mix of professionals and parents. Table 34 gives a brief summary of the areas that interviewees stressed as being important.

Table 34. Authority's role.

Group	*n*	More support to parents	More support to staff	More support to pupils	Staff Training	No	Don't know
Nursery heads	6	0	0	0	1	4	0
Primary heads	24	0	3	5	7	11	0
Secondary heads	7	1	1	1	2	2	0
Psychologists	8	1	0	0	1	4	1
Parents	30	13	0	6	8	1	0
Pupils	35	0	10	10	6	9	5

Pupils were asked questions about the way dyslexia affected them in school and outwith to establish if the knowledge that they were dyslexic affected the way people treated them, and also if motivation and self-esteem were affected.

Table 35. Treatment of dyslexia at school.

(Are you treated differently because you are dyslexic at school? If yes, by whom? In what ways?)

Group	*n*	Yes	No
Pupils	35	24	11

Pupils were treated differently for a variety of reasons:

C3S2P stated, "Yes, pupils treat me differently because I'm slower. My friends understand. Others think me dumb, stupid, slow. I know I'm not dumb or stupid."

C1S1P "You get taken out of class. That's fun.

C21S22P "Yes, (I'm treated differently) by the teachers. They cut my work down and I feel different from everybody else. I would rather everybody got less work."

C26S26S "Yes. Not in art and design or science, but I can use my laptop in class there. English and French teachers where there is a lot of writing and technical. They say if something is for homework they ask, "Can you manage?" Also give me extra time for tests."

Table 36. Treatment of dyslexia outwith school

(Are you treated differently because you are dyslexic outside of school? If yes, by whom? In what ways?)

Group	*n*	Yes	No
Pupils	35	9	26

Again there were a variety of responses, some good and some bad.

C4S3P stated, "Yes, mum helps me more."

C5S4P "Yes, sometimes by a friend. I'm teased about my writing."

C12S11P " Sometimes Mum and Dad treat me differently. I don't like it – people assuming you can't do it."

Pupils were asked whether dyslexia affected the way they felt about themselves in an attempt to investigate if pupils were aware of dyslexia affecting self esteem.

Table 37. Self esteem.

(Does dyslexia affect the way you feel about yourself? In what ways?).

Group	*n*	Yes	No
Pupils	35	14	21

C22S23P "It used to when I didn't know what was wrong."

C34S30S "If we're reading everybody can read out. If I have to read I stutter to say the words."

C19S19P "Yes, I feel different. People make a fool of me."

Interviewees were asked for any additional comments they wished to make. There were no outstandingly common elements to answers. Three mentioned difficulties of identification and dealing with dyslexia in bilingual children. Others took the opportunity to mention the role the Authority must play in dealing with dyslexic pupils with the proviso that expectations must be realistic.

Parents of three dyslexic children who had been brought up bilingually were asked additional questions (see Appendix 8b), but no points of commonality were found in the three questionnaires. The only indication of difference might have been in the longer time that language mixing lasted compared to bilingual children who are not dyslexic. Three structured interviews were insufficient for any conclusions to be drawn.

Additional questions were asked of head teachers regarding the number of dyslexic pupils and the nature of the catchment area in which the school lay. Most of the nursery heads were able to identify a few children who might turn out to be dyslexic and knew of some in whose family there was some history of dyslexic problems. Just over half of primary head teachers could give an approximate number of dyslexic children in the school. A few primary heads and the majority of secondary heads could not give an approximation of the number of dyslexic pupils in the school. One secondary head however thought, "Possibly three or four. Varies year to year. Number shoots up getting towards Fourth Year. There's more openness now" (S29S). Answers given by primary head teachers varied between "None"(S23P) and "50 out of a roll of 300" (S19P).

In spite of East Renfrewshire's middle class image, only nine heads reported that they felt their schools had a mainly middle class catchment (two nurseries and seven primaries). The majority felt their schools were mixed with four nurseries, 18 primaries and all seven secondaries falling under this description. Five head teachers mentioned deprivation as being a significant factor in school life, one nursery, two primaries and two secondaries.

Educational psychologists were asked some additional questions and responses were received through questionnaire data. When information received from educational psychologists was relevant for comparison with other information from schools, children and their parents, this has been referred to in the current chapter. Where there are factors which are particularly pertinent to educational psychologists as a separate group these have been dealt with in the following chapter.

Discussion

From the interviews there was a considerable amount of data and a large volume of rich information. Excessive curtailing of the nodes at which responses were coded would have resulted in degradation of the data. There was therefore a considerable number of nodes and a considerable amount of coded data. See Appendix 12. These data could not be reduced much further or the quality of information would have been lost. It was also impossible to know when there was no new information to be received, as often new points would be mentioned for at least one answer in each interview. All interview answers were therefore taken to be relevant and coded as such. Data are therefore a mix of the qualitative and quantitative. No statistical analysis of the quantitative data however would be relevant, as most of the information was given in response to open questions, and a positive response did not indicate that other interpretations would not be relevant. For example, because a head teacher felt that recognition of difficulties was important to alleviation of the effects of dyslexia in the classroom would not mean that they did not consider staff development was also important, even though they made no mention of this. No attempt was made to classify elements in order of importance. That would have meant limiting answers and leading respondents to a restricted set of outcomes. These interviews were instead a genuine attempt to discover in an open way how dyslexia was perceived by professionals, parents and young people in the East Renfrewshire context.

There were no areas where all were entirely agreed, but there were many points where common themes became apparent through the triangulation process. Through the use of NUD*IST to code the interviews, these themes started to become apparent (Cohen & Manion, 1994).

One of the last interviews which took place with children and parents served to highlight a number of different points which are particularly pertinent to the whole

study. The family had been identified by the Principal Teacher of Support for Learning in a secondary school. She had approached the parents stating that research was being carried out into dyslexia, and asking permission to interview. At the interview to which the parents had readily consented, they stated that they had never been told that their son was dyslexic and they wondered why they had been selected. After a brief discussion when the parents were asked to describe the difficulties that their son had, it was explained that it did sound as if there were problems of a dyslexic nature. Parents were invited to get in touch with the child's educational psychologist with a view to determining whether or not their son was dyslexic. However it was established during the course of the interview that they had been informed that their son had specific learning difficulties. When asked what they had understood by that phrase, the parents stated, "When they're not sure they use that term." When the child was asked what he understood by the term "specific learning difficulties", he simply said, "I don't know what it is!" There are implications in this case for staff development for educational psychologists and for policy. The young man being interviewed was a teenager who was well able to understand the nature of his difficulties.

Clearly the fact that a specific group did not mention an item does not indicate that they did not consider it worthwhile. For example, no psychologist mentioned that staff development made the most worthwhile contribution to alleviating dyslexia. However they may still have considered it worthwhile, though perhaps not the most worthwhile factor in the alleviation of the dyslexic problems.

When telephoned and asked for the name of parent who could be contacted for interview by the researcher, three head teachers stated they had no dyslexic pupils in the school. At a later date, but still in the same school session, when these three head teachers were interviewed and asked the question, "Roughly how many dyslexic children are there in the school?" only one replied that there were none. Another said there were "roughly 30", and the other said, "Four or five"! While there may be more than one reason for the two contradictions, the researcher has interpreted the two head teacher's who would not give the names of parents who could be contacted as being due to a fear of their school being put in an unfavourable light. No further approaches

to these schools were made to investigate the researcher's hypothesis, and from the responses from other schools, there was no foundation for such a fear.

Burden (1981) suggests that if change is to be brought about in schools, then an alliance with the head teachers is essential. Head teachers' perceptions were therefore important as their support would be instrumental in carrying forward new projects. Head teachers' perceptions, although they all varied, were not totally different from those of parents and young people. Head teachers were concerned to some extent about raising expectations to a point where they may not be able to meet them. The parents consulted however were very happy for the most part. However all of the young people who were interviewed and all of the parents related to dyslexic pupils who had been identified and labelled. It is likely that there may have been some dissent from parents of young people who had difficulties which had not been labelled. It is likely then that the very act of labelling children, and giving accompanying support, does in itself bring credit to the Authority, and appreciation of parents. A number of parents made the point that the education authority should, "Listen to parents!" This generally referred to a struggle at the point of identification. Some parents who had first suspected difficulties felt that their school was initially unresponsive and slow to respond. There is no real evidence that this was the case, but acceptance of the set procedures did mean a delay in labelling of dyslexic children. It did not however necessarily mean a delay in support. Many children were already receiving support when parents received the educational psychologist's report and confirmation of dyslexia.

The ratio of dyslexic boys interviewed to dyslexic girls was not unexpected and was representative of the ratio of boys to girls in the population as a whole (Crombie, 1997; Ott, 1997). The difficulty which some of the children, especially the younger ones, had in remembering their birthday was also anticipated in the light of findings on short-term and working memory difficulties in dyslexic people (Poussu-Olli, 2001). Poussu-Olli testifies to the lasting nature of early memory problems which in dyslexic people often persist throughout adulthood.

Issues around the terminology used to describe dyslexia were extremely problematic. In view of the definition recently published by the British Psychological Society (1999), it was important to establish if there was a common understanding of

the word "dyslexia", and if understandings tied in with what BPS had produced. As BPS referred to a word reading difficulty and spelling problem, consideration was given to these elements – those who mentioned "word" or "words", "reading" and/or "spelling" were noted. The finding that no psychologist, only three head teachers and one parent mentioned all three of these elements showed that there was very little common understanding of the term. Pupils who considered dyslexia as being synonymous with "stupid" or "dumb" revealed a very negative perception of themselves and the likelihood of low self-esteem. A variety of other factors were mentioned by all groups showing that understanding was not restricted to the BPS categories but indicated a much wider perspective of the term "dyslexia". The views given were much more in line with Miles' (1993) pattern of dyslexic difficulties than they were with those of the British Psychological Society, indicating that factors such as sequencing, left-right knowledge, short-term-memory and phonological knowledge were also considered to be important. Very few (three in total) mentioned the various degrees of difficulty which dyslexic children might have or that there was a continuum of difficulty. Where Riddell, Duffield, Brown & Ogilvy (1992) had found that a continuum perspective was taken by professionals, with a more discrete perspective by parents, the East Renfrewshire population was much more balanced across groups with only 1 head teacher, 1 psychologist and 1 primary head teacher taking a clear continuum view. No clear pattern of distribution of views was discernible.

BPS (1999) found that 22% of educational psychologists viewed "dyslexia" as synonymous with "specific learning difficulties". Twenty-five percent of East Renfrewshire psychologists mentioned this even though the wording of the question left interpretation of terms open. Although roughly the same percentages of parents and head teachers also mentioned that the two terms were synonymous, there were a variety of other quite different responses. One parent and one head teacher stated that dyslexia was **not** a specific learning difficulty. One secondary head teacher thought that "specific learning difficulties" meant that there had been "damage to eye, speech chords or brain". A common response among parents, young people and head teachers was to say that "specific learning difficulties" referred to one aspect of learning - maths, modern language, gym, music or English. What became clear and

can be seen by the number of nodes which had to be developed using NUD*IST, was that there was very little agreement either among professional, parents and young people or between groups on what was meant by either the term "dyslexia" or "specific learning difficulties". There was however more agreement on the term "dyslexia" than there was on "specific learning difficulties". Psychologists and other professionals continue to use the term therefore without a common understanding of what is meant.

On the question of whether there are differences between dyslexia and other literacy problems, the majority in all categories thought there was. Pupils however were more uncertain of this than other groups. While BPS (1999) found no unanimity among psychologists on whether "literacy difficulties" could be used as a substitute term for "dyslexia", it is apparent from this study that all groups felt there is an identifiable difference between dyslexia and literacy difficulties generally. One primary head teacher felt that if children were dyslexic, then they "didn't have the keys to unlock the door, even though they had the capabilities". On whether or not the term "dyslexia" should be used, all groups felt that it should. Psychologists and pupils however were divided among themselves. Pupils who said, "No" to this question tended not to qualify their answers, whereas those who said, "Yes" tended to say that it helped explain their difficulties or it helped others to understand. Most of the children who gave negative answers were simply not bothered by what the difficulties were called. If the word "dyslexia" was not to be used then the term "specific learning difficulties" would be substituted by only two psychologists and one primary head teacher. Most of the other did not know what they might use instead, though two primary head teachers liked "dyslexia-type of difficulty".

On whether or not it is possible to identify dyslexia before children go to school, it seemed the nearer head teachers were to the pre-school age group the more possible they believed it to be. Secondary head teachers then did not feel that it was possible while nursery head teachers (those most involved with the pre-school group) felt it could be identified. Early indicators of dyslexia are given in most books on dyslexia (e.g. Crombie, 1997; Ott, 1997). Early signs of dyslexia which nursery heads thought they might look out for mostly concerned phonology, while primary heads mostly looked for a discrepancy and secondary heads looked for a writing difficulty. This in

itself explains why secondary heads did not think it possible to identify dyslexia before children go to school. Psychologists, like nursery heads thought phonology the main factor while parents too acknowledged phonology as well as reading and memory. Pupils felt reading and spelling were the main areas with writing too being affected. Two parents, 1 pupil and 1 primary head teacher were unsure of any early indications of dyslexia or could not name one.

Parents often feel that the time taken between dyslexia being suspected and assessment to give confirmation of difficulties is unacceptable. Perceptions of parents differed from the perceptions of their children on the amount of time that they were aware of difficulties before these difficulties were given the label "dyslexia". Parents perceived the time to be longer giving a mean time of 2 years, 1 month while children thought that the time between becoming aware of difficulties and their difficulties being confirmed was 1 year, 5 months. The main reason for this is likely to be that children were not aware of their difficulties much before Primary 2 or 3 whereas parents were often aware of their concerns as early as Primary 1. A primary pupil (C3S19P) stated that he realised he was having difficulties "when the work got too hard. In Primary 1 teachers thought I was slow and I was crying. I think my mum knew". Mother (PM3S19P) stated that she recognised difficulties about the age of six years, but that the nursery had suspected earlier. These findings were not unexpected, as young children may not become aware of their difficulties until they are aware of differences between themselves and other children. Parents on the other hand may see some of the difficulties children are having at an earlier stage. Memory too can be unreliable (Linton, 1986) and both parents and children may wrongly estimate the stage the children were at when they were assessed. Problems of ensuring accuracy of memory representations are exacerbated too by the fact that the memories are likely to be associated with an emotional response (Matlin & Stang, 1978; Sherer, 1984). However while there may be some exaggeration, parental perceptions of time were likely to be reasonably accurate, as these tied in well with dates of assessment.

The findings of DeFries, Alarcón & Olson (1997) on the importance of heredity for the dyslexic condition were acknowledged by the majority of nursery and primary head teachers, but not secondary. It seems secondary heads are more detached from specific knowledge of children than primary head teachers. Parents were aware that

there was a hereditary aspect to dyslexia and could often mention a family member who was dyslexic. This then gave potential to the use of knowledge of family problems to effect intervention at the earliest opportunity in the hope of avoiding later dyslexic difficulties (Bolstrøm & Elbro, 1997). Most young people did feel that it would have helped them cope with their difficulties if they had known and understood them at an earlier age. From the findings of this project illustrated additionally by the previous case studies, it would seem that there was a possibility of earlier identification and willingness to discuss the issues with parents and also young people at an appropriate level.

The finding that more of the parents felt there was a family history on the father's side as opposed to the mother's was not unexpected in view of the ratio of dyslexic males to dyslexic females in the population as a whole. The ratio of parents who said male side as opposed to female side was 4:3. "Mother's side" could of course have been a male relative, such as mother's brother.

In determining provision for dyslexic pupils, it is important to know the type of provision which might be most helpful. Questions on the alleviation of difficulties and any factors which might deter progress would elicit possible satisfactory provision from the professional and the family perspective. The importance of a range of support proved to be important to many with the pupils mentioning their Network Support Teacher often by name. Some, particularly the psychologists, felt that individual support was important. Several pupils and parents mentioned the importance of understanding, though it was difficult to ascertain whether comments such as "make them understand" were to be coded as understanding or staff development!

While recognition was considered important to some parents and primary head teachers in alleviating problems, non-recognition was considered a more important factor which hindered dyslexic children's progress. One parent said that recognition was important to child and parents alike as they had been "on the child's back" (Parent, PM30S30S). With the exception of the nursery heads all groups felt that non-recognition or late recognition of difficulties could be the most damaging factor. "If they had found out about it in P1, it would have been much easier" (Pupil, C26S26S).

In considering the strengths which dyslexic pupils have, all groups acknowledged some strengths. It is the strengths which can generally be used to motivate children and raise self-esteem. The research on artistic abilities in dyslexic people (West, 1991; Hercules, 2001) was supported by the evidence offered by both young people and their parents who felt they were strong artistically. While primary heads also mentioned art as a strength, none of the psychologists did, suggesting this may not be a factor which they investigated. Psychologists however, along with primary head teachers felt that oral skills were often superior. Parents mentioned social skills were often good, giving cause to be positive about prospects for later in life. It is interesting to note that none of the pupils perceived themselves as being bright. Although low self-esteem was apparent in many of the pupils and was being reinforced by reading difficulties, this was in concord with what McMichael (1977) had previously found. As McMichael concluded too, there was no evidence that low self-esteem actually caused reading problems.

Parental satisfaction with the local authority's response to their dyslexic child was gauged with a view to considering if expectations for support were realistic or feasible. This has relevance to the authority in determining the type of support which the system can sustain with implications for future policy. The parents and children selected for interview were often nominated by the head teacher, so it might be assumed that head teachers were unlikely to choose parents who were dissatisfied. Not all parents were nominated by the schools however and some did volunteer to be interviewed at a parents' evening. It might also be concluded that the parents most likely to be dissatisfied would be those who were struggling to establish the nature of their child's difficulties and did not yet have a label. No parents of children who did not have a label of "dyslexia" were selected.

In Nance-Dewar's (2000) view, it would be expected to encounter considerable dissatisfaction with provision. Parents however were generally fairly satisfied with local authority provision though they felt they needed more support. Communication between school and parents, while not always mentioned directly, was viewed as problematic by some parents. It was also an area which a primary head teacher felt was likely to hinder dyslexic children's progress if not in place. Pupils felt that they too needed more support. Pupils, parents and primary head teachers saw the

importance of staff development and pupils felt that teaching staff too needed more support. With regard to their treatment at school, pupils mostly felt that they were treated differently, some in a positive way, others negatively. There was evidence that where teachers were making an effort to accommodate pupils' difficulties and enable them to gain access to the curriculum, this was appreciated by these pupils. The majority of pupils felt they were treated no differently from other children outwith school. When asked if there was anything that people in the Authority who work with teachers could do to help pupils, one pupil replied, "Shoot them – make them understand!"

While pupils might not always have been aware of the effect that dyslexia had on their self-esteem, some recognised that it did make them feel different. For those affected it is possible the effects could be long-term and difficult to change.

This chapter has highlighted a lack of understanding of the terminology concerning dyslexia and the need to develop a more readily understood conceptualisation which is accessible to all. While there is justification for keeping the term, "dyslexia", there is little case for early (pre-school or Primary 1) labelling. A clearly defined system of early identification of associated difficulties with accompanying intervention is indicated. Any tools which will identify early difficulties and strengths at an early stage are justified. This will enable the education authority to put in place an appropriate system of support and development which is likely to be well received by parents, staff and pupils themselves. Communication with all interested parties is vital to progressing further developments in this area. The next chapter will investigate the educational psychologist's role in the system of support, consider how dyslexia is assessed, and how the assessment relates to terminology and support for young people and parents.

CHAPTER 10

The Educational Psychologists' Perspective

Currently it is the educational psychologist who accepts responsibility for determining whether or not a child is dyslexic. This chapter investigates educational psychologists' practice in the identification of dyslexia and questions policy for the future.

Introduction

All local authorities are required to fund an educational psychology service for children and schools in their area (Harker, 1997). The role of educational psychologists is key to the assessment of dyslexia. If a child is to be assessed as being dyslexic in Scotland it is the educational psychologist who will give the label. Unlike the situation in England where a specialist teacher may now assess a child as dyslexic with the Statement of Need being drawn up by the educational psychologist, in Scotland the role of the teacher is to recognise the signs of dyslexia while the psychologist will confirm the suspicions. The legal system too considers the role of the educational psychologist as vital in the identification of dyslexia. In July 2000, an appeal to the House of Lords on behalf of dyslexic Pamela Phelps was upheld on the grounds that her local authority educational psychologist failed to identify dyslexia several years previously. Lord Clyde ruled that the educational psychologist, Miss Melling, had a duty to both the local authority and the child (through her parents)

> ....the psychologist was in the circumstances in Phelps also advising the plaintiff through her parents. I consider that the judge was right to observe that "it does not accord with reality or common sense to regard her as owing a duty only to the defendants". On the evidence he was certainly entitled to reach the conclusion that the psychologist also owed a duty to the plaintiff through her parents. (House of Lords, 2000b, p. 7)

Burden (1996) considers that the move over recent years towards protecting the "rights" of children is in some ways dangerous in that "only that which can be measured will be considered worthwhile" (p. xi). He warns that psychologists should be aware of the major paradigm shift which has occurred from positivist to

constructivist and social interactionist ways of making sense of behaviours. He warns against overlooking systemic ways of understanding what happens in schools, and advocates that systemic and other "new paradigm" ways of thinking and writing can benefit the helping professions.

While psychologists are becoming concerned about the increasing role played by psychometric assessment in their work with children (Boxer, Foot, Greaves & Harris, 1998), this has for many parents and head teachers come to be considered a very important part of the psychologists' role in any assessment for dyslexia. In view of the key role and responsibility which educational psychologists have in the identification of dyslexia, it was considered important to elicit the views of educational psychologists in East Renfrewshire to establish if practice was in line with what the legal system might expect, and what the British Psychological Society in its 1999 report, recommends. Thus the educational psychologists' questionnaires had additional questions to those in the structured interviews which were conducted with pupils, parents and head teachers.

Educational Psychologists' Questionnaires

Assessment of dyslexia is entirely dependent on the criteria which are used. Criteria in turn are dependent on the definition of dyslexia used. In view of the vital role which educational psychologists hold in the identification of dyslexia, it was important to ascertain whether all educational psychologists in one education authority are working to the same definition or understanding of the term "dyslexia" and whether the same criteria are used to determine whether or not a child is dyslexic, and also to decide if there was commonality of practice among East Renfrewshire's educational psychologists. This would ascertain whether all parties concerned were acting on a common understanding of the nature of dyslexia, and possibilities for its amelioration and support for pupils, particularly in the early school years, and prior to the start of formal education.

It was clear from the British Psychological Society (1999) report that terminology was problematic among educational psychologists. Of 183 psychologists in England, Wales and Northern Ireland who responded to a British Psychological Society survey 71% supported the use of the word "dyslexia" and 15% did not. Twenty-two percent

considered "dyslexia" to be synonymous with the term "specific learning difficulties", and 60% did not, with 66% seeing "dyslexia" as a subset of "specific learning difficulties". In spite of this finding, the report proposes that educational psychologists use the word "dyslexia" synonymously with "specific learning difficulties". It states also that using "dyslexia" as a subset of "specific learning difficulties" concerning literacy is also acceptable. The issue of whether dyslexia is a subset of, or is the same as, "specific learning difficulties" is important and requires clarification. This was therefore investigated at the start of the questionnaire. It was also of interest to establish if psychologists felt there was a difference between dyslexia and other difficulties with literacy, or if the two were essentially the same. If they felt there was a difference, then it was important to investigate how psychologists were able to identify the difference.

Further questions reflected the debate, and sought to establish criteria for the assessment of dyslexia among educational psychologists, and materials used in the process. The high number of multi-lingual children in East Renfrewshire increased the potential for the identification of dyslexia to be problematic (Paulesu et al., 2001), and therefore the writer investigated if additional criteria were taken into account by educational psychologists at the assessment stage.

"It is now well established that in some - though not all - cases of dyslexia a genetic factor is at work" (Miles, 1994, p. 201). A Swedish study based on parental reports suggests a figure of 42% who admit to hereditary dyslexia problems in their families (Jacobson & Svensson, 1997). Other studies suggest higher figures (Grigorenko, 2001). Questions were posed to establish the level of psychologists' awareness of heredity as a factor in the East Renfrewshire dyslexic population.

Psychologists were also asked if they would tell a young person who had just been assessed that they were dyslexic. The question was posed: - "When you have determined that a child is dyslexic, do you tell him/her?" While it is acknowledged that telling a child that they are dyslexic, particularly at an early age, can be difficult, it seems to the writer that there may well be issues in this which relate to human rights, and are therefore important to recognise in local authority policy and practice. In the interests also of common practice among educational psychologists, explanations require to reflect a common understanding of what dyslexia is.

Other questions in the questionnaire would reflect individual views, beliefs and knowledge of dyslexia and were the same as those posed to head teachers, students and parents, referring to views on early identification, policy and practice. Many of these were reported in Chapter 9. In all, 19 questions were posed, though some questions had more than one part. See Appendix 8d for full version of questionnaire.

Method

According to Reason & Morfidi (2001) "educational psychologists have found qualitative research and interview-based approaches valuable in evaluating initiatives in particular local contexts" (p. 228). The interview-based data from the previous chapter are enhanced by the questionnaire data which were obtained from the team of East Renfrewshire psychologists. The whole team of 8 educational psychologists participated in answering questionnaires. At the time of the survey in spring 2000, this was a total of eight made up of one principal, three senior and four basic-grade educational psychologists. All psychologists had experience of the assessment of dyslexia, and experience ranged from just over one year to over twenty years.

Questionnaires were designed to elicit both quantitative and qualitative data. A number of the questions asked for "Yes" or "No" responses which could be analysed quantitatively, though greater elaboration and quality of information could only be obtained through the additional detail which was requested. These qualitative responses could be coded, and used to demonstrate the range of answers and commonality/differences between responses. Computer software would be used to help analyses and investigate common responses and views between the psychologists, the head teachers, the parents and the pupils' responses as was presented in the previous chapter. The computer program NUD*IST was used for the qualitative analysis of data obtained. Quantitative data were easily analysed due to the small numbers involved, though conclusions were necessarily limited to an East Renfrewshire context.

Procedure

Because the questionnaire was very similar to the structured interview questions which were given to students, parents and head teachers, it was not felt to be necessary to pilot the material on more than one psychologist. The questionnaire was

therefore given to one psychologist from outwith East Renfrewshire who answered the questions and discussed the content. Criticism was positive and no amendments were felt to be necessary as a result of the pilot, although some amendments had been made at an earlier stage when piloting the head teachers' version of the structured interview schedule.

All psychologists answered the questionnaires at the same time to avoid any collaboration or discussion of answers. This was done at the end of the psychologists' team meeting on April 5, 2000. 45 minutes were allocated to allow adequate time for consideration of responses. All answers were given as written responses to the questions, though no effort was made to coerce psychologists into answering questions they were unhappy about.

The principal psychologist had previously been approached and her permission sought to allow the educational psychologists some time in the working day to answer the questionnaires. The reason the questionnaire was chosen as the means of identifying psychologists' views instead of interviews was because it was felt that the psychologists, being in a small team, would be likely to discuss questions if separate times were chosen. As this would have affected the validity of the findings, the writer attended the latter part of the psychologists' team meeting and briefly introduced the questionnaire before the psychologists gave their written responses. All views were therefore presented at the same time and psychologists could not collaborate on responses.

It was stated that the questionnaire was about dyslexia, and was a part of much wider research being carried out within the education authority. The views of educational psychologists as a vital part of the assessment process were therefore being sought. Psychologists were told that although their answers to all questions would be appreciated, if they were unhappy about answering any questions, they should not feel under any compulsion. They were also asked to answer the questions without collaboration. They were assured that though the findings from the survey would be made known, individuals would not be identified and any individual answers which were reported would be done anonymously, so they could feel able to reply honestly with no pressure to adopt the "party line".

Results

Reading assessment is integral to any assessment of dyslexia, with almost every definition being reliant on reading or word reading as a part of its content (BPS, 1999). However, only 7 out of 8 psychologists mentioned that they would assess reading. The one who did not specify reading as part of the answer, mentioned teachers' reports, and it would therefore be expected that the teachers' reports would contain some information on reading. Others who did not mention the word "reading", did specify a particular test which contained assessment material on reading. Answers on this included "Neale Analysis", "Daniels and Diack", "WORD", therefore it could be concluded that these psychologists assessed both reading accuracy and reading comprehension. One psychologist also mentioned Aston Index, though it was not clear if the whole of Aston Index was considered appropriate. In view of the time that would be involved in the whole, it can be assumed that it would be used selectively. Tests of reading and spelling may therefore have been used also from this pack.

Table 38. What materials do you use in the assessment of dyslexia?

Group	*n*	Reading	Spelling	Writing	Phono -logy	Listening	Oral	Number
Psychologists	8	7	4	2	1	3	1	2

While only two mentioned number as a separate category and only one mentioned oral skills, it might be assumed that these skills could have been assessed within other tests. IQ tests were used by 5 out of the 8 psychologists. In terms of criteria, 6 out of the 8 were looking to establish a discrepancy before determining that a child was dyslexic, and another was looking to establish "differences". Four out of those 6 were the same as those who used IQ tests. It can be assumed that the IQ test would be used to establish at least some of the discrepancies. As criteria for determining dyslexia one psychologist wrote, "Poor visual and auditory memory difficulty processing info so that speed of mental operation is slow" (3 Psy).

On additional criteria for use with bi- or multi-lingual children, 1 psychologist stated not being "expert enough to answer that question" (1 Psy). Another said,

"Whether home language is most commonly used at home!...Check for hearing loss" (3 Psy). However 3 would check for cultural factors (1, 5 and 7 Psy), and 1 (7 Psy) mentioned the use of an interpreter if necessary.

All psychologists checked if there was a family history of dyslexia or other similar problems but 3 were unsure of a percentage of cases where this would be a relevant consideration.

Table 39. As a rough percentage of the cases you deal with, how often could you describe heredity to be an important characteristic in the identification of dyslexia?

Group	*n*	None	Less than 50%	51% to 85%	Over 85%	Not sure
Psychologists	8	0	2	1	2	3

Having assessed a child as being dyslexic, only one psychologist stated that the young person would probably be told. Another said that the young person would definitely not be told. All others gave qualified answers:

"Perhaps depends on age and understanding and family situation" (5 Psy)

"This depends on child's age, curiosity and appropriateness, may not use term though" (7 Psy).

"Often but only if I feel they are sufficiently mature" (8 Psy).

The type of explanation given to the young person also differed among psychologists. Three psychologists explained the difficulties in terms of how these could be helped by putting strategies in place. Four psychologists phrased it in terms of things that they are not good at: e.g.

> You know you are good at...well some people are good at some things and some need a bit of help with other areas. I am hopeless at... You say you find reading hard well that's because you don't find it easy to remember sounds etc. You aren't stupid or lazy. It's just something you don't find easy. We will help you...(7 Psy).

Discussion

Parents, young people and professionals do not currently have a common understanding of the most appropriate terminology to use and exactly what is meant by the various terms which have been discussed. Educational psychologists, as the

most important people in the labelling of dyslexia, do not have a shared understanding either. While professional questioning, debate and dialogue can be constructive, other professionals, parents and children are unlikely to fully understand the implications of dyslexia while psychologists are openly disputing what is meant, and what the implications might be. This inevitably leaves the subject open to the interpretation of the courts as was described in the introduction to this chapter. Instead of reducing litigation therefore, there could well be an increase as parents and young people themselves turn to the courts for clarification, and help in understanding what they view as a problem, or sometimes, a group of problems. As seen in the introduction, the courts then turn to their "expert witnesses" who will be educational psychologists, and so the situation will have turned full circle with no resolution which will settle matters for the future.

According to Bolton (1990),

> Educational Psychology presents as a discipline divided within itself. It has failed to reconcile its two purposes: to build educational practice on a theoretical understanding of the developing child, and to assist as an applied discipline with the management of individuals and groups in educational settings. For the academic study of child development relates only weakly to what actually occurs in classrooms, and those who are professionally committed to the application of psychology have their roles defined for them largely by whatever problems the system throws at them. In short, there is no unity of theoretical and practical understanding. (p. 165)

This research has shown that many of those involved with dyslexic children do not understand what the term "specific learning difficulties" means. Parents, young people and some head teachers are particularly unclear. The writer therefore feels that it cannot continue to be regarded as satisfactory to have an either/or situation as to whether dyslexia is a subset of "specific learning difficulties" concerned with literacy or is the same as "specific learning difficulties" as the British Psychological Society has left unresolved. There requires to be a common understanding not just among psychologists, but more widely among parents and the young people themselves. The public in general need to understand exactly what it means to be dyslexic.

> An important aspect of the educational psychologist's role is working with teachers on the curriculum, a task which involves the comparison of theoretical and practical understanding, since practice is not just a reflection of theory and theory is not just a matter of making explicit what occurs in practice. Teachers and psychologists have a common concern – the curriculum – but they necessarily have different things to say about it (Bolton, 1990, p.170).

The additional training which educational psychologists undertake will have prepared them for a greater role in curriculum planning for dyslexic children, making recommendations on what requires to be put in place to enable a young person to gain greater access to the curriculum. In an inclusive education system, access is required by all (SOEID, 1998). Dyslexic young people can gain access but require specific interventions and/or accommodations to be in place for them. Areas such as technology, thinking skills, metacognition, combining teaching and learning styles, visualising and verbalising, memory and organisation strategies and study skills are all areas which require additional support for dyslexic young people (Bell, 1991;Lindsay, 2001; Thomson & Chinn, 2001).

The finding that not all psychologists would tell the young person that they were dyslexic after assessment has considerable implications for the rights of the child. With the Children (Scotland) Act (1995) having established the principle that local authorities must have due regard to the views of the child when making decisions affecting that child, and also stipulating that parents must consult their children on all major decisions affecting them (Scottish Office, 1995), there are dangers here that in time a child or young person will enforce their rights under the Act.

Bolton (1990) warns that education professionals are liable to "take on the form required by the system" (p. 173). If this is the case therefore, it is essential that all parts of the system are well informed, and that educational psychologists as a vital part of that system along with head teachers, teachers and other professionals know what is required by the system. As this research has shown, currently the system does not have a common knowledge itself and this is a situation which requires clarification, and where possible, simplification, so that all parts of the system can work together inclusively as in any effective cybernetic system (Weiner,

It is now possible to have a child assessed as dyslexic over the Internet (Bradford-Burns, 2001). The cost of this test on 11 August 2001 was £85 for a child, considerably less than an educational psychologist would charge for a private assessment, and less than the cost to the Education Authority of employing an educational psychologist to assess a young person as dyslexic. It seems the function of the educational psychologist as the main assessor of dyslexia is becoming a redundant one, and that more appropriate and cost-effective solutions will require to be found (Cumming, 1971). Taking account of the depth and breadth of a psychologist's training, research knowledge and in-depth knowledge to support teachers seems likely to replace the role of dyslexia assessment in the future.

According to Bolton (1990),

> The political responsibility of educational psychologists is not simply a matter of coping with the political and administrative solutions imposed on the system, though that consideration has, naturally, to be met. It is ultimately a matter of how psychologists can work with colleagues from other disciplines and with teachers in fostering the administrative and political structures which will embody in practice the values of a jointly formulated and integrated educational theory. (p. 174)

Assessment tools were found to vary considerably among the East Renfrewshire psychologists. All were however using standardised assessment measures in addition to other more qualitative judgements. Five out of the eight psychologists used IQ tests. There was however little agreement on what would be necessary for a conclusion of dyslexia. Many assessment tools are not particularly sensitive and while giving a "snapshot" view of a child, do not indicate aspects of progress or ways forward for teaching (Reason & Morfidi, 2001, p. 239). Reason & Morfidi go on to argue that, "Standardised norm-referenced tests are not designed to link directly with curriculum content and are considered insensitive to instructional changes"(p. 239 citing Lovett, Warren-Chaplin, Ransby & Borden, 1990; Nicholson, 1997).

In educational psychology practice problems as complex as this are common and are due to the interactions between all the parties involved in the system (Frederickson, 1990). Change therefore is indicated for the role of the educational psychologist as it relates to dyslexia, particularly in the early years when assessment is problematic and uncertain. In 2000, a report by the DfEE on future directions for

practice in educational psychology indicated the situation in England and Wales. Much of it is however relevant in Scotland also. One of the recommendations of the report is that educational psychologists should change the balance of their work to establish a reduced involvement in statutory procedures and an increase in preventative work and early intervention (DfEE, 2000). In Scotland, a report is due in 2002 which should point the way forward for the role of educational psychology. This is unlikely to conflict with the English model and the changes recommended there. The new model recommended for England would seem to fit well with the current findings and indicate a way forward for the Scottish system.

This chapter has shown widespread variation in practice in the assessment and support of dyslexic pupils in East Renfrewshire schools. As there are considerable differences between parents, young people and professionals in their understanding of terminology, psychologists could be integral in promoting a common understanding of dyslexia and the issues involved. Policy in this area requires to be developed.

CHAPTER 11

Early identification

This chapter considers Baseline, CoPS1 and DEST and their potential to identify dyslexia at an early stage with a view to ameliorating later reading and writing difficulties.

Baseline Assessment

Baseline assessment grew out of earlier schemes to find a means of identifying children with difficulties in order to ameliorate the effects which difficulties might cause at later stages (Lindsay & Desforges, 1998). Initial versions of Baseline were determined by teachers and support staff, including educational psychologists, and were targeted to improve children's lives and enhance development. While early versions of the government's versions of Baseline still aimed to achieve these functions, the focus of interest has changed. Baseline is now a tool to measure "value-added" and to make schools "accountable" (p. v). This chapter considers the usefulness of Baseline as a tool, and looks at other tools which might contribute to effective intervention for dyslexic pupils at the earliest possible stages.

Appendix 6c gives a summary of East Renfrewshire's Baseline assessment material (Nutbrown, 1997). From this it can be seen that many factors mentioned previously which are dyslexia sensitive are not included. While the assessment looks at a number of factors which previous material by Clay (1985) considered as indicative of reading readiness, it contains little which according to research would be specifically indicative of dyslexia, especially critical factors such as automaticity (Nicolson & Fawcett, 1996), sequencing activities (Ott, 1997) and phonological awareness (Stanovich, 1988a). The material makes no claims to be sensitive to dyslexia, and exists as a means of establishing a level which children have achieved at time of school entry. Baseline material, as it now stands, is a group assessment tool for the purpose of comparing groups of children year on year, and can be used as a baseline from which to measure improving standards as might be expected as a result of the Early Intervention programme. It is unlikely then that children who are dyslexic would be indicated by the East Renfrewshire Baseline assessment material

though it is possible that there could be a few signs (e.g. letter knowledge). Children who have not been taught the tasks which are assessed, could not be expected to provide all the right responses. Dyslexic children would probably perform on the tasks in the same way in which children from deprived backgrounds would. There would therefore be insufficient dyslexia indications for teachers to have a clear picture which would lead to early intervention in the areas most required. Further detailed assessment of phonological skills would be required in addition to consideration of likely accompanying characteristics of dyslexia (Peer, 2002; Wright, Wood & Stackhouse, 2002).

As a means of ensuring "accountability" and measuring "value-added" therefore, Baseline can be a useful tool for gauging how much a school improves over what might have been expected. Information on a school's intake may allow judgements to be made on "reasonable goals for improvement" over a specified period of time (Lindsay & Desforges, 1998, p. 9). Schools can also be compared with other similar schools, and can also compare their results in one year with results in another year. There is an assumption here that differing rates of progress will be "attributable to school factors" and not to individual children who are making poor progress (Lindsay & Desforges, 1998, p. 8). Baseline assessment has not been designed to predict individual children's likely progress nor is it likely to be a useful tool in doing so. Some parts of the assessment however may have value in determining which children require additional teaching in specific areas. The interest of this study however lies in diagnostic information relating to individual children. If a tool is to be useful in the prediction of dyslexia, a significant correlation between that test and children later identified as dyslexic must be established. Investigation was therefore given to assessment material which claimed to have a significant correlation.

The CoPS1 program

According to literature from the University of Hull (1997) on the CoPS1 computer program,

> it can assist the teacher in identifying, at a relatively early age, children who are likely to experience literacy problems because of dyslexia or other learning

difficulties, even though such children may not yet have begun to learn to read or may not at the time have shown any apparent literacy problems. (p. 1).

In the spring of 1997, East Renfrewshire Council ordered CoPS1 programs for every primary school and nursery in the Authority area. This followed a demonstration of the PC version of the software. As all East Renfrewshire schools were at that point using Apple Macintosh hardware, a wait of a few months was anticipated before the appropriate software could be made available. During that time (25 September, 1997), the writer received one training day in Newark, at a Chameleon training centre. This day covered the theory involved in the development of the program, some "hands on" use of the program and a brief guide to interpretation of the results.

As part of East Renfrewshire's early literacy initiative, theoretical aspects of the computer program were introduced to Early Literacy coordinators from all schools and nurseries on October 8 1997. Delivery of the programs themselves did not take place until late 1997, and further training sessions were arranged for early 1998. "Hands on" training was given to Early Literacy coordinators over two sessions on 22 January and 9 February 1998. Here training was given on installation of the program, running of the program, some possible difficulties which might be encountered, and in the interpretation of the results. At these sessions, coordinators were given a copy of the program to be used in their establishment. No one was given a copy without having received the appropriate training in administration and interpretation.

A questionnaire (in Appendix 9a) was issued to school and nursery staff at the second training session to be kept in the CoPS1 manual and completed as appropriate, noting times taken at each session. Schools were then able to proceed as quickly as they felt was relevant in their establishments. A further training session which considered any difficulties being encountered with the program, or with interpretation of data, as well as management issues was carried out on 14 May 1998, as part of a full day programme on assessment at the early stages. At this stage, no major problems were evident with the program, though there were complaints about the amount of time being taken, and a few other issues mainly from a management perspective.

Shortly after this training session took place, a major problem was brought to the writer's notice. Children's profiles had been printed out in one school, and these were

being looked at and evaluated. The school's Early Literacy coordinator had occasion to be showing one pupil's results to a class teacher on the screen, and a discrepancy was noticed between the profile which had been printed the previous day, and the current child's profile as it was showing on the computer screen. The writer was telephoned, and advice was given to print out what was now in the computer's memory for all the children in the group to allow comparison to be made with previous printouts and discrepancies to be noted. See Appendix 9b for comparisons of profile sheets for four children labelled A, B, C and D. The computer program caused each child to present with a different profile on the different dates shown even though there had been no assessment in the intervening time. The program therefore had failed to operate as it should have, and the results which had been previously obtained were no longer stored accurately.

Discrepancies were significant and were apparent for several children. Out of a group of 50, 16 (32%) were noted to have significant discrepancies between present and previous, even though no testing had been carried out between dates. These were not consistently in any direction. On some occasions they were better, sometimes worse at the second printout. On the profile sheets of three children who showed no discrepancies, comments had been written by the class teacher who had assessed the children to the effect that the scores could not have been right, as these children who had been totally unable to do the tests, had shown high scores. These findings seriously cast into doubt the reliability, and thence the validity of the data, not just from this school, but from the others. No action was taken other than to notify Chameleon Software at this point, as it was hoped that this was a "one off".

On the following day the writer was called to look at the profile of a child who had just been tested on the CoPS1 program in a different school. This was the first child to have been tested in this school, and having been aware of difficulties experienced elsewhere with programs freezing, the school had installed the program onto a brand new Apple Macintosh which had only just been unpacked. This was to rule out possible interference from other existing software (unless the preloaded software) and also to rule out a lack of memory which had initially seemed a possibility in other schools. The one child who had been tested had a different profile from the day before though again no further testing had been done. This prompted the writer to put

"on hold" all of the testing in the Authority, and to complete her current evaluation on the data which had already been obtained. Further time could not be justified when the reliability and validity of the CoPS1 program were now so seriously in doubt. Chameleon Software were again notified, as were the research team at Hull. Further assessment with CoPS1 was not carried out beyond late May of 1998 unless specifically requested by a parent, and then only on a computer where the software and hardware had previously shown no problems.

Questionnaires which had been given to each of the schools involved at the initial training day were requested back. See Appendix 9a. After a reminder, sent in September 1998, full evaluation of the information provided was carried out.

The CoPS1 Questionnaire and Evaluation

A summary of the evaluation taken from questionnaires distributed to all CoPS1 users in East Renfrewshire is given in Appendix 9a. Samples of CoPS1 profiles are presented as part of case study data in Appendix 6d along with a brief description of the tests and the purpose for which they were intended. Of the thirty establishments which used the program, four schools and three nurseries did not respond to the questionnaire. In the case of two out of the four schools and one of the three nurseries, this was because the program failed completely at an early stage.

In almost all cases, the program was conducted outwith the classroom. Claims that the program could be run in the classroom were not found to be correct, as staff felt that children were very easily distracted. Those establishments which started by assessing in the classroom reported that they found this environment unsuitable. In total, 590 Primary 1 children were tested, and 204 children in their pre-school year. This represents over half of the Primary 1 children and less than 25% of the pre-school year children. This number would have been considerably higher had the schools not stopped testing when the reliability of the program came into doubt. Average time taken for the full test was 1 hour 15 minutes per child, and for the shortened version, QuickCoPS, it was 35 minutes per child. In total the time taken up was in excess of 608 hours.

Because of the early failure of the program a true picture of the potential of the program was impossible, and no firm conclusions can be drawn from the current research. In January 2002, the researcher's copy of the profile sheets for the children

who had been assessed were considered alongside a list of dyslexic children which had been supplied by East Renfrewshire Psychological Services. Where graphs were available for children who have now been assessed as dyslexic, these have been shown in Appendix 9c.

Names of children and schools have been deleted to maintain anonymity, and numbers with suffix M for male and F for female substituted for referencing purposes. While the weaknesses and strengths of the children will all be different, all have been assessed as dyslexic, and so the dyslexia sensitive subtests, such as Rhymes and Names, were considered. It can be seen that in some cases the CoPS1 program did indeed identify likely dyslexic patterns (See for example, Pupils 102F and 109M), however in others it did not (See for example, Pupils P100M and P101M). Had the software not failed, there are indications that for some children, it did give an indication. However, as shown in Case Study Pupil C41S11P (Appendix 6d) who though slow in dyslexia sensitive areas did not give cause for concern, it was possible for a child to devise strategies for mastering some of the dyslexia-sensitive subtests. While for some children it was worth using, as a screening device for a whole school, it was unlikely to be the best option. As a backup used to confirm findings, it could however be useful. As a screening tool for all children who came from a family with a history of dyslexia, it may also give an indication of areas of strength and weakness.

The costs of the exercise were estimated, so that if and when a valid and reliable version of the program became available, the viability could be assessed against other possible means of early identification of dyslexia. Costing time at approximately £20/hour for teachers' salaries means a cost to the Authority of around £12,160 in one financial year. Additional time taken to discuss and interpret results would add approximately a further £3000 in staff time. Taking into account the fact that in the majority of schools, the main person involved in the assessment was a member of the senior management team, a realistic estimate would be considerably in excess of this £15, 160. To this must be added the cost of training (4 half days per school - £6000) and the initial cost of the program for all schools (£8000). The cost of training the trainer and other sundry expenses, such as letters, phone calls etc., a first year set up cost would be over £30000 with annual running costs of £15000. Taking into account that this was the figure for the first experimental year with only 25% of the pre-school

and 50% of the Primary 1 population having been tested, it was not considered viable or desirable to continue into a second year on the same basis, even with a reliable version of the program which the PC version of the program claimed to be. Neither cost-benefit analysis nor cost-effectiveness analysis (Cumming, 1971) could justify the use of Co PS1 in East Renfrewshire schools. Criteria for determining future use of CoPS1 will be primarily the reliability and validity of the test instrument. It is unlikely however to be used as a full screening instrument due to the costs in staff time and uncertainty regarding results.

The problems encountered within East Renfrewshire were reflected in litigation between Chameleon Software, the producer of the program, and Lucid Research, the development company. The litigation was not settled until November of 1999, at which time East Renfrewshire were offered substitute programs on CD-ROM for the PC. Although not all East Renfrewshire schools have PCs, it was decided to accept this offer, as it was the only offer being made. At the present date in January 2002, East Renfrewshire schools and nurseries have taken receipt of CD-ROMs. These are now being evaluated on a much smaller scale and used to confirm information which has been achieved by other forms of observational assessment. Numbers are as yet too small to determine if future use on a larger scale could be justified.

While the writer's evaluation of the CoPS1 program revealed considerable weaknesses and concluded that the program could not be recommended in the form described for anything other than consideration of a few individual skills, it was nonetheless an illustration of how (with considerable development, work and appropriate piloting, the computer may be used as an assessment tool. It must always be considered whether or not the computer is in fact the most effective method of assessment. The future will determine the options available.

The Dyslexia Early Screening Test (DEST)

During the course of this study, a number of measures were considered as tools for the early identification of dyslexia. DEST however was not considered as a possible screening device, largely due to the problems which had been encountered with CoPS1 and a determination on the part of the researcher that future tools for the early identification of dyslexia would require to be valid and reliable, and give quality and value for money (Cumming, 1971). Evaluation of such material could be carried out

by the researcher before introduction to schools on a wide basis. The DEST therefore was used selectively and used only by the researcher in order to form an initial impression of its usefulness in a local authority context. See Appendix 6a for sample assessment score sheet. As can be seen, test items were quite different from the CoPS1 program though there were a number of items, such as phonological awareness which were assessed in both. Tests in DEST such as Rapid Naming, Bead Threading and Shape Copying could not be assessed by computer.

Postural Stability is a test of balance which involves the tester in pushing the child in the back with sufficient force for the dyslexic child to fall over. This test was not done, and advice given by the tester would be to avoid this test as pushing a child, whether it indicates dyslexia or not, cannot be justified. Instead a balance task was substituted. The child was asked to do a literacy task, such as saying a rhyme while balancing on one foot with eyes shut. This was done with a few children as a substitute for the pushing test, and proved to be an indicator of how well children could coordinate activities. For the children assessed, it did seem worthwhile though there was a lack of scientific means of measuring the amount of wobbling or lack of balance which the children exhibited. Appendix 6d shows a number of DEST scored test sheets for case study children. Where a score has been marked for Postural Stability, it was in fact the balance task described above which was carried out.

Evaluation of DEST

Evaluation of Fawcett and Nicolson's (1996b) Dyslexia Screening Test (DST) was carried out in a small study by Portsmouth University and reported in 1999 (Lawrence & Carter, 1999). The DST is similar to the DEST, but designed for the older age group from six and a half to sixteen and a half years. Class teacher interviews from teachers who had been involved in the study considered that it was a "useful" tool, though they too had considerable reservations regarding the use of the Postural Stability subtest which they found to be "ineffective". (p. 111) The DST provided "a possible solution to their problems" in identifying children who risked literacy failure due to dyslexia. They concluded however that the DST "was unlikely to be used for whole class screening in primary schools" (Lawrence & Carter, 1999, p. 111).

These conclusions were similar to those of the writer. The reservations and concerns over the use of the Postural Stability test were obviously shared by teachers, and the subtest as described in the handbook would be unlikely to be used without parents being present for fear of accusations of "physical abuse" (Lawrence & Carter, 1999, p. 111). Even with parents present, the writer would be reluctant to use it with young children.

Other subtests, such as shape copying seemed to be very dependent on the physical coordination skills of the child and these were very variable but did not seem to relate directly to dyslexia in children in the recommended age range. Discrimination seemed to relate to hearing and listening skills rather than dyslexia. Other items where phonological knowledge was being assessed were more directly related to dyslexia and this was reflected in the children's scores. See Appendix 6d. However even items such as Letter and Digit Naming were very dependent on the age of the child. Due to the wide age range covered (4:06 to 6:05 years), and the fact that the range covered children with no school experience and those with up to two years experience, letter knowledge even in a dyslexic child, varied considerably and could not be considered a reliable indicator. Allowances for the differences did not seem to be sufficiently compensated for by the norming process. A wider range of skills assessed against the teaching which had taken place would have more directly related to persistence of any difficulties. This could be illustrated by Child C44S6P who was assessed prior to school entry. He came from a family with a very strong hereditary link to dyslexia. There was considerable anxiety even at this early stage. At 5:02 years at time of testing however, C44S6P was well within the age range for the use of this test.

When assessed, C44S6P had no experience of the teaching of letter sounds and therefore performed very poorly, showing this as a positive indicator of dyslexia. Another child of the same age group with no school experience would also have been likely to have difficulty in this area due to never having received teaching of letter sounds. Had this subtest been conducted after a period in school, the indications would have been more valid. The same conclusions would applied to the Digit Naming subtest. The manual however states that the DEST is appropriate for screening in school, and if strictly kept for school use, then it would be expected that

some teaching of letter sounds and digit names would have taken place. However the manual also states that the test can be used with children younger than 4:06 years for whom there is very little likelihood of them having attended school.

With these reservations, it did seem to the researcher that the conclusions gained gave an insight into the learning characteristics of the child. This might have been due to the direct communication between tester and child which could not be there in cases where the interaction was with a computer. The manual claimed that the whole test could be conducted in around half an hour and this was indeed the case. Tests were short and most of the children enjoyed them and maintained concentration all the way through. From the small study which was done and has been reported in the case study section, the researcher concluded that DEST would be unlikely to be used as a whole class screening device, as without some specialist knowledge of how to interpret the results, teachers would probably feel they already had more detailed knowledge of each of their pupils. Reliance on the test results as shown below would also lead to non-identification of some dyslexic children. The educational progress of each of the case study children has been followed and monitored by the researcher.

Below are the findings of the researcher on each of the children assessed and reported in Appendix 6d:

Pupil Code	**Screening Diagnosis**	**Dyslexic ?**
Pupil C41S11P	Not at risk	Yes
Pupil C42S23P	Not at risk	No
Pupil C43S14P	Doubtful, though not at risk	Yes
Pupil C44S6P	Doubtful, though not at risk	Yes, likely
Pupil C11S10P	Not at risk	Yes
Pupil C46S5P	Not at risk	Yes, though not severe
Pupil C47S1N	Not at risk	No, but still being monitored
Pupil C45S15P	At risk	Not yet assessed, but being monitored.

Overall, the "at risk" index was unhelpful and there were a number of false negatives. Individual subtests however did give some indications of future problems, and for most, the information gained from observation of the child during the

assessment was more help to the assessor than the final result. Early phonic skills for example were a more reliable indication of future reading difficulties than the DEST. If false negatives were accepted as valid and reliable, they could lead to no further action being taken. The researcher concluded that as a screening device for class teachers, the DEST could not be recommended for though it gave some insights into learning style and processing abilities of the child, there could be other means of achieving this end which would require less than half an hour per child. These will be explored later.

This chapter discussed the use of Baseline, CoPS1 and DEST and investigated their role as screening devices for the early assessment of dyslexia. Baseline assessment, as currently intended, proved useful as a measure of "value-added" and school accountability for groups of children, but in its present form, could not be readily adapted to identify individual children with dyslexia at an early stage. The CoPS1 computer program failed to reliably hold results of children tested, so could not be recommended as an effective tool in the assessment of dyslexia. The DEST did not always identify children who later were assessed as dyslexic. It was therefore concluded that none of these three tests would be necessary or sufficient for the early assessment of dyslexia. They have however raised awareness of mainstream staff to the possibility of early identification of dyslexia and the importance of early intervention.

CHAPTER 12

Screening programmes

This chapter considers the benefits to an local education authority of implementing a programme of early screening and looks at the development of one particular screening programme aimed to identify early signs of dyslexia and other learning difficulties as well as giftedness at an early stage in a child's education.

> Self-esteem is not always the first thing that people think of when considering the importance of early intervention. When a child ....experiences failure on a regular basis she may develop a self-concept of herself as someone who 'can't' or 'is lazy'... (Roffey, 1999, p. 6).

From the perceptions of some of the dyslexic children who were interviewed and reported in Chapter 9, it can be seen that for some children the word "dyslexia" is synonymous with "stupid" or "dumb". It is to avoid the development of this type of perception and the likelihood of the accompanying development of low self-esteem that a model of dyslexia is proposed that takes account of the early years of a child's educational life. For parents too it is important that dyslexia is identified early so that both parents and young people are able to understand any difficulties which the children have. For head teachers, the early identification of dyslexia should result in earlier intervention with the possibility of psychological assessment becoming unnecessary for some borderline cases. For psychologists, the possibility of educational assessment of dyslexia with accompanying appropriate teaching being put in place by teaching staff at an early stage could result in only the most severe cases requiring psychological service intervention.

According to SOEID (1998a),

> If children are identified and intervention begins in the first or second year at school there seems to be a greater chance of success than is achieved by programmes designed for older pupils. Preventing later reading problems seems to be easier than dealing with them once established. (p. 3)

With a view to establishing early identification of any difficulties which East Renfrewshire children were experiencing in nursery or Primary 1, and in the light of

the problems over the CoPS1 program, it was important that a substitute programme of screening was put in place quickly while enthusiasm was still high. With this in mind, the researcher drew up a list of factors which could be readily assessed through classroom observation and which were acknowledged as being sensitive to dyslexia as well as other areas of need such as autistic spectrum disorders, attention deficit with hyperactivity disorder and dyspraxia. In addition it was designed also to give indications of more able children. In order to encourage staff to use the screening profile sheets, and to ensure that mainstream staff would know the early signs of dyslexia and the other areas, a day's staff development was arranged for Primary 1 teachers and a separate time was arranged for nursery teachers. In addition, it was recommended that a member of the school's management team came along to the staff development session. This was arranged for October, 1999.

In total seven schools which attended the training decided to take forward the screening for its pilot year. There were also two nurseries which became involved in a separate screening pilot. There was separate material for nursery and Primary 1 screening. In all, 11 Primary 1 classes were involved and four nursery classes. See pilot material in Appendices 10a and 10b.

Evaluation of pilot material

Evaluation of the pilot was carried out by the researcher in summer of 2000. This found that most of the observational assessment was completed by late November with one school leaving it till January to fit in with a busy autumn schedule in school. Follow-ups of children considered to be giving cause for concern was made by most in late spring though one school completed the follow-up by March in order to report children's progress to parents at their March parents' night. Most schools felt that they had assessed at the right time and all felt that the material gave them enough information about each child. The screening took on average 17 minutes extra per child for observation, recording, collating and reporting. This was on top of the regular observations which would have happened routinely without the screening. In all 133 children were followed up and received additional intervention for the problems identified by the screen. The ratio of boys:girls in the follow-up was approximately 2:1. Schools which had additional funding for Early Intervention

tended to use this extra for staffing to support the children identified. The Network Support Team also played a role in follow-up activities. All schools, nursery and Primary 1 felt the screening worthwhile, some of them mentioning that they felt it gave them much more detailed useful information than they had managed to achieve either by the use of Baseline or the CoPS1 program. For a summary of the evaluation in summer 2000, see Appendix 10c.

In autumn of 2000, a small working group taken from the management group involved in the Primary 1 screening was set up. This was chaired by the researcher, and after two meetings a booklet was drawn up with new profile sheets and guidance on administration. Summary class profile sheets were an addition which one of the working group had found helpful. The main difference to the observation schedules was the inclusion of numeracy which a number of schools wished to be included. Other changes were minor.

A working group was also set up to look at the nursery screening. While the Primary 1 group had involved management members who had been directly involved in the Primary 1 screening pilot, the nursery working group did not and therefore, with the exception of the researcher, the working group had no experience of the use of the pilot materials. Major alterations were recommended by the group and these can be seen in the differences between the two version in Appendix 10a. The current version of the screening material mirrors the 3-5 Curriculum almost exactly with only the addition of factors which might help identify early signs of dyslexia as well as other possible areas of need including social factors. This was to cut any additional work to a minimum and to fit with the materials which were already in place. A booklet was drawn up for this too, and plans were made to run the screening for a second year. Staff development days were conducted separately for nursery and Primary 1 staff and management. These took the same form as the previous year, this time introducing the new materials.

Evaluation of current version of screening material

Because of the major alterations which were made to the nursery screening material, most nursery heads decided that they would leave the new material till the session 2001-2002 and conduct a very curtailed version of their own. The work is

therefore continuing in this area and will be evaluated in 2002. Primary schools which had been involved previously went ahead with the screening after a staff development session in October 2000. Only one nursery class attached to a primary school was involved in the 2000–2001 screening. All other children were in Primary 1 classes. Questionnaires to evaluate the use of the new screening materials were therefore sent out in spring of 2001, and a summary of responses is contained in Appendix 10d.

All schools were asked to return questionnaires. Those who had not screened their children were asked to give a nil return. However only 15 out of the 24 schools replied. One reply was a nil return. The data from the remaining 14 were summarised and appear in Appendix 10d. The other primary schools and all separate nursery schools did not screen in the session 2000–2001. In autumn 2001, the researcher was invited to supply pilot screening material for one nursery class which did not like the revised version of the materials. This one class is still being monitored and will be further researched. However data cannot be included in this present study, nor are they necessary in order to draw conclusions. The reason for questionnaires being sent to the schools instead of using an interview technique was simply one of time. In order to minimise the time spent it was not felt to be necessary to conduct individual interviews as had been done in the previous session. This was the second year of screening and many of the pertinent points were likely to have been made in the previous year. The benefits of being able to elicit answers to all questions, and being able to probe respondents could not be gained, and therefore there were a number of unanswered questions on the questionnaires. It can be seen from the summary where the survey sheets have been left blank. Benefits of using a questionnaire technique as opposed to one of individual interview became apparent (Robson, 2000; Tuckman, 1972) and returns for time spent had to be balanced against quality of information received through opportunities for asking and probing. However, on this occasion, sufficient data were available to generalise and draw some conclusions.

Four schools had been involved in screening in the 1999-2000 session and 10 schools were screening for the first time. Altogether 818 children were involved in screening. Of those, 139 were considered to have some areas of concern (94 boys and 43 girls). Of the 818, just under 4% (32) were considered to possibly have

dyslexic difficulties though there were doubts about a few of them, especially those from the nursery class. All were receiving some type of follow-up aimed to alleviate their difficulties. Family history was considered to be an important factor in identifying those who required additional support. When there was a family history of difficulties in addition to difficulties with the acquisition of literacy, this was thought to be strongly indicative that extra support was required. In most cases, though not all, it is noted that parents were involved and were encouraged to play games or do additional reading with their child at home in an effort to help literacy standards. No additional information is available on **how** parents were encouraged to participate with their children. This is a weakness of the research method used (the questionnaire) and discussed previously.

Other areas were investigated in the questionnaire, but only those relevant have been reported here. However, it is clear that school personnel were able to identify children who were likely to be dyslexic at the Primary 1 stage, with possible overgeneralisation at the nursery stage. The additional support and strategies which were put in place in the nursery however will have benefited the children, and parental involvement will have become a part of the ethos at a very early stage in the child's school career. Should problems continue, parents and young people will be aware that school personnel have acknowledged concerns and followed them up.

Discussion

The screening programme was critically piloted and then evaluated over the 1999–2001 period with ongoing follow-up. When considered alongside the CoPS1 program and the DEST material, it compared very favourably. In terms of additional time taken, it took much less than either the DEST or CoPS1 program. While DEST was not evaluated on a large scale, the researcher's findings were considered. DEST, while based firmly on research findings, did not give conclusive results for the East Renfrewshire children studied and was therefore no more reliable than the researcher's own screening materials.

Time taken for the screening was approximately quarter of an hour over and above that taken for routine classroom observation and assessment which would have happened anyway. This compared to at least half an hour for the QuickCoPS assessment, over an hour for the full CoPS1 test, and half an hour for the DEST. As a

result of the screening, markers for a range of learning difficulties and strengths could be identified and intervention could be put in place to minimise the effects of problems at an early stage. While the CoPS1 program working as it had been intended, might have identified some cognitive weaknesses, it required specialist knowledge and/or training to interpret the results. Additional specialist knowledge would also have been required to put in place the intervention necessary to support a dyslexic child at this early stage. DEST claimed only to identify early signs of dyslexia. In the hands of a specialist however, it might have given some insight into the learning styles, strategies and motivation of any child. It did however require 30 minutes per child outwith the normal routine, it had to be conducted individually and some of the subtests (such as Sound Order) could only be conducted in a quiet environment, therefore could not be considered part of the classroom routine.

Cost was considered (Cumming, 1971). If expensive materials such as the DEST or the CoPS1 program are to be of value to an education authority, they require to give both reliable and valid information to the user. It seems from the evaluation of the current screening materials that these offer a way forward for education authorities in terms of value for money. The screening materials cost only the researcher's salary and the cost of photocopying. Staff development would have been required whatever the programme which was to be put in place, and this programme of staff development will require to be ongoing.

The screening materials, it seems, have highlighted the children who require to be monitored and for whom early intervention is appropriate. While there may be some signs of overidentification of difficulties, these cannot be considered significant with only 4% identified as possibly showing early signs of reading failure associated with dyslexia. No attempt was made to discriminate between what was dyslexia at this early stage, and reading difficulties which might be due to other factors, such as deprivation. Such differentiation in the early years would be counterproductive and could be discriminatory, particularly if it led to "dyslexic" children receiving a superior quality of help. All failing readers require to have their needs identified and met. Dyslexia will become apparent through identification of accommodations – a theory which will be proposed and discussed in depth in later chapters.

At this early stage however, collaboration and communication between parents and professionals will not only help to identify intervention, but help to ensure that the child's needs are seen in context (Roffey, 1999). Early screening is an effective means of identifying any early difficulties a child may have in accessing the curriculum. It then enables teachers to play a role in preventing future frustrations with resulting behavioural problems which may ensue (Peer, 1999b). In terms of teacher time spent in assessment tasks, the minimisation of this time should result in more time being available for early intervention for any problems highlighted by the early screening. In terms of cost benefit analysis, the avoidance of the need for long-term support through appropriate intervention at an early stage must be more beneficial than delaying till difficulties are obvious to all including the child. The type of support which would then be required would be likely to be individual and may require to be conducted outwith the classroom if there are no other young people in the class with whom they can effectively be taught or if the teaching required is sufficiently different from the rest of the class that the pupil's self esteem and motivation would be likely to suffer (Payne, 1991).

This chapter has considered the benefits of the East Renfrewshire screening materials when compared to the Dyslexia Early Screening Test and the CoPS1 computer program. Though the East Renfrewshire Baseline material is not to be considered as an option to screening, it has received some consideration, and was not found to be helpful in the early identification of dyslexia. Appropriate practice, provision, policy and management are essential if dyslexic children are to be seen to have their needs met. The following chapters are brief in comparison to the previous chapters as each of these areas is considered separately. Policy, practice, provision and management of dyslexia are however closely interlinked and overlap in several different ways. These will now be considered.

CHAPTER 13

Management and intervention

This chapter will consider the role of management in the implementation of effective policy and provision for dyslexia in a local authority context. Management of practice also requires to be considered. Previous chapters have highlighted the issues which management in East Renfrewshire require to address. These will now be viewed from a management perspective and conclusions drawn as to the way forward.

"The management of education provides an opportunity to influence values, and to adjust them in the interest of students and the community more generally" (McGettrick, 1994, p. 116). While this statement does not directly apply to dyslexic students, it is with the interests of dyslexic students and above statement in mind, that the early identification and intervention for dyslexic children will be discussed from a management perspective. Database searches reveal very little on "management and dyslexia" in the sense desired. The only responses from database searches and other search tools pertained to the management of individual teaching programmes for dyslexic young people, and on classroom management. There is however an abundance of literature on management generally which can be drawn on and applied as appropriate.

Even though there are strong indications that children at risk of failure in literacy learning due to dyslexic problems can be identified at an early stage, this has in the past only happened in a very few instances. Investigation of the reasons for this are required as are the benefits in management terms which can be gained by applying a programme of early assessment of any problems with accompanying intervention to remediate difficulties where possible, and to support appropriately when remediation is not feasible. The management of assessment and of supporting the learning of young people is critical, "if education is to raise the dignity of everyone" (McGettrick, 1994, p. 114).

Early screening has proved itself to be an effective method of establishing that a child has early cognitive processing difficulties as well as possible physiological or neurological factors which may later manifest themselves in reading failure. While it is sometimes difficult to say at an early stage that reading failure is likely to constitute

dyslexia, it must be ensured that appopriate measures are in place for early intervention in literacy and numeracy and that teachers are trained to teach appropriately. With effective management of teachers and resources in place, it is likely that some children who may have had mild difficulties, may not require assessment as timely intervention will have prevented problems developing. For those who will have more severe problems, the effects of these can be anticipated so that the needs of the young person are met with empathy. In this way, it will be possible to avoid the loss of self-esteem and lack of motivation which has previously been known to accompany dyslexia (Henderson, 2001).

While research has made a considerable contribution to knowledge of early precursors of reading failure (Elbro, Bolstrøm & Petersen, 1995) and knowledge of hereditary factors influencing dyslexia (Smith, 1986), it has taken a considerable time for local authorities to put in place early assessment and intervention programmes to avoid dyslexia going unrecognised and unsupported. Intervention at the early stages is likely to benefit not just the children, but also their parents and society in general if later entrenched behavioural problems can be avoided (Chapman & Tunmer, 1995; Lawrence, 1977). Dyslexia can prove much more difficult to support when it is not recognised till later.

The role of parents is critical to the progress of dyslexic children and this has been borne out by the findings of the current study which found a number of parents who were frustrated with the education authority. Valid reasons for this seem to have been due to an unwillingness to discuss dyslexia in terms which parents and professionals understand. A lack of a common understanding of what dyslexia is, has contributed to problems. This lack of understanding cannot just be applied to young people and their parents, but also to professionals. Debates amongst professionals on the use of the term "dyslexia" and the meaning of the word, as well as the other complexities which surround the whole field, have contributed considerably to parents' frustrations with professionals. Parents wish to be able to understand the language of professionals and speak in a common language which all understand.

This is an area which a local authority must understand and manage if parents are to be treated as partners in their children's education (Watt, 1994). Watt considers that "education managers should make interaction as effective as possible and manage

the involvement of parents to improve the learning of their children not as a knee-jerk reaction" but taking account of "factors such as equal opportunities, fairness and equality". (p. 65)

The effects of phonological awareness training on the learning of young children, and later reading development is well documented, and is directly relevant to the general management of dyslexic-type difficulties (Bryant & Bradley, 1984). Nursery rhyme teaching is one way in which parents can make their children more aware of the sounds of words. Other more formal types of awareness training, such as using plastic letters to make simple words are less likely to be adopted by parents, though it is acknowledged that some parents may use such types of training. Parents, especially those who have no working knowledge of the education system, require help to know how best to help children who are struggling to learn. Teachers, with their knowledge, experience and expertise can often facilitate the process by helping parents to help their children. This was an area highlighted by a number of parents in their interviews.

Parental support can be managed by schools only if school management personnel themselves have the knowledge and skills to work with parents of dyslexic young people from the earliest stages. Where head teachers felt the local authority could be of most help was in the area of provision of resources and staff training. Some mentioned that they needed more time from educational psychologists. Others mentioned that young dyslexic people should be taken out of national testing. None mentioned that they should be trained in how to make national testing accessible by dyslexic young people. Others felt that additional budget could solve problems. While some of these might help head teachers manage dyslexia, there remains a management responsibility which, according to the House of Lords' judgement (2000), requires the school manager to have a working knowledge of dyslexia, and to discuss issues with parents.

What is clear is that dyslexia can be managed. It is, however, dependent on the knowledge and willingness of education managers to resolve problems and support young people and their parents. To do this they require to have a knowledge of what it is that is being managed. While this is still unclear to professionals, any system of support cannot be wholly satisfactory. The fact that there is no general agreement

between professionals (BPS, 1999; Regan & Woods, 2000) cannot be regarded as satisfactory and must be resolved. Early screening for dyslexia is part of an efficient system of early management of difficulties. It enables effective intervention to be put in place and maintains relationships with parents and young people. When difficulties persist as British Psychological Society (1999) suggest, these too require an efficient system to be in place, and this is where change is indicated as the system is not working as effectively and efficiently as many wish.

This chapter has highlighted the difficulties which education managers have in making appropriate provision for dyslexic young people. Partly this is due to there being no clear picture of what constitutes dyslexia. This is a matter for policy which has resisted previous attempts to find resolution (BPS, 1983; BPS, 1999). A resolution to these difficulties is proposed in later chapters.

CHAPTER 14

The Response to Dyslexic Children in Scotland Today as a Policy Issue

This chapter considers the role which policy can make in developing and sustaining appropriate provision for dyslexic pupils. Policy requires to be suited to the area in which it operates and local factors need to be taken into account. The findings from the writer's research have identified areas which policy will require to address. Dyslexia policy must now take into account the possibilities which can be realised through early identification and intervention.

Educational policy in the nineties (at the start of this project) and still today (2002), has been largely influenced by two documents, both produced in the nineteen seventies - the Warnock Report (1978) and the Scottish HMI Report, also of 1978 (Riddell and Brown, 1994, Introduction). The 1978 Inspectors' Report (SED, 1978) had a profound influence on policy, practice and provision throughout Scotland, and in all areas of special educational needs. The report questioned whether the educational characteristics of a variety of learning difficulties could simply be attributed to an inability to learn to read or count. The report considered all pupils in the "lower half of the ability range with learning difficulties and assessed the arrangements made for them by way of 'remedial education'" (SED 1978, pp. 7-8).

Policy changes to accommodate dyslexic problems at an earlier stage are taking place in various countries throughout the world, and the Times Educational Supplement notes that early screening and preventative action in nursery schools in France are considered vital to tackling dyslexic problems (Marshall, 2000). Provision of a network of specialists who could "rapidly identify the condition" is proposed as a means of remedying the situation for many children. France is felt to be "lagging behind other countries such as the United States and the Netherlands in helping these children" (p. 14). While neither Scotland nor the United Kingdom are mentioned in the report, one can only assume that Scottish schools are not seen as world leaders in the field of early identification of, and provision for, dyslexia. It is however noted that action must be taken according to the severity of the difficulties. This is

acknowledging that dyslexia is not an all or nothing situation, but rather a continuum of difficulties.

Lee (1993) stresses the importance of local authorities developing common policies on assessment, recording and reporting. While Lee's assessment recommendations are made against a background of National Curriculum, nonetheless much of what has been said could be made relevant to the Scottish situation. The importance of training staff in the understanding of assessment techniques, and the role of a co-ordinator who has responsibility for assessment in every school are issues which require greater consideration. Should curricular assessment of dyslexia become the norm, then these suggestions made by Lee will require to be addressed.

According to Topping (1985), "...reading failure is not only multiply but cumulatively caused" (p. 20). Excessive anxiety, caused by poor reading, produces further stress which interferes with learning, thus causing yet further delay. Both Topping (1985) and Wolfendale (1985) see the solution as lying partly with parents, as they are able to encourage children in a safe and secure environment. Modelling, practice, feedback and reinforcement can thus be given more readily and effectively in a home environment. According to Wolfendale (1985), planning a parental involvement policy could involve five stages:

Stage 1: First considerations

Stage 2: Planning

Stage 3: Action

Stage 4: Maintaining and monitoring

Stage 5: Measurement and evaluation.

Within these stages, various factors, such as running of parent workshops, inservice training and planning an appropriate timescale are important. These are all issues which were considered as appropriate to management in the last chapter. They are equally important to policy within schools and for local education authorities.

A Manual of Good Practice (SOEID, 1998b) considers,

> The United Nations Convention on the Rights of the Child and the full implementation of the Children (Scotland) Act 1995 make it essential that local authorities, health boards and NHS Trusts, and all professionals whose work has an impact on the lives of children, give serious consideration to the ways in

which children and young people are consulted about and involved in the processes of decision-making which affect them. (p.14)

Questionnaires to children were therefore important as a means of ascertaining the children's values with regard to how the Authority dealt with all factors of their education including the place of teaching and person given specific responsibility for the specialist support. Many of the children specifically mentioned their specialist teacher as being their greatest support.

Policies and procedures should be "implemented consistently and evaluated regularly in collaboration with parents" (SOEID, 1998b, p. 30). " Children and young people should be actively involved in addressing their difficulties" (ERC, 1999, p. 5). See Appendix 3.

A further matter which policy and practice must address and manage is that of continuity between nursery and primary schools. Primary teachers tend to have a deeply rooted view that all children should start primary school as a "fresh start" (Harlen, 1996; Powney, Glissov, Hall & Harlen, 1995). Even where information is known about a child and passed on, it is seldom heeded. Any lack of liaison between practitioners has to be a matter for concern (Watt, 1997), especially where children with any kind of difficulties are involved.

Humes (1986) argues that the leadership class in Scottish education has been deeply conservative in many respects and socially unrepresentative of the people of Scotland. He argues that the education system by no means encourages popular participation (Humes, 1995). With the coming of the Scottish parliament, Paterson (1997) feels that the policy process will be bound to become more transparent. Negotiation will form an important part of the policy making process as the interdependent nature of relationships is recognised. These interdependent relationships are apparent as the European Union member countries adapt to world bargaining. Paterson feels that Scottish policy making in education is unlikely to change radically under the new parliament and "will be mainly about setting goals and evaluating these in terms of their direct impact of teaching, learning and attainment" (Paterson, 1997, p. 153). Dyslexia policy has however been extremely problematic with the previously discussed issues of definition and assessment being largely responsible for reluctance to put in place effective policies to manage dyslexia.

Local Authority questionnaires

In the spring term of 1998, a questionnaire was sent to all Scottish local education authorities by a colleague (J. McGregor, personal communication, April 12, 1998). See Appendix 7 for questionnaire. Access was granted to the information which was gained. Of the 32 Scottish authorities, 21 replied. Of these 21, 7 had a policy for dyslexia in place, and 3 were in the process of developing their policies. Three of these included their dyslexia policy within the wider policy for support for learning/special educational needs/inclusive education. Eleven stated that they had no policy, and of these eleven, four stated that their policy for dyslexia was encompassed within their wider policy on support for learning/special educational needs/inclusive education. Seven authorities therefore had no policy at all on dyslexia. Whether this constitutes 7 out of 21, or 18 out of 32 or somewhere in between is debatable. It seems likely however that local authorities which replied were those who were happy to declare their policies to the wider public. We can say with certainty however that during the early stages of this research in the summer of 1998, between 22% and 68% of Scottish local authorities had no dyslexia policy. All authorities however had a policy for special educational needs either in place or in process. It can be assumed that dyslexia must then fall under this category. At this point East Renfrewshire had in place a policy for special educational needs, with its dyslexia policy recently underway. The Scottish Office recommends that "assessment policy and procedures should be implemented consistently and reviewed regularly in collaboration with all parties involved (SOEID, 1998b, p. 78). As East Renfrewshire's dyslexia policy was published in 1999, a review of the policy will require to be kept in mind. Matters such as the enabling nature of new technologies for dyslexic young people may affect policy and will require to be considered (Crombie & Crombie, 2001), as indeed will definitions of "dyslexia" itself.

New legislation too is likely to require a review of policy to ensure compliance. In addition the provision and maintenance of an effective service, according to Rutter, Tizard & Whitmore (1997) will become an illusion without constant evaluation through research. Constant updating of policy in the light of new and recent research evidence if a prerequisite for effective practice and provision.

While there are a number of points for and against labelling, the body of evidence, not least from the children themselves, seems to be that a label is desirable for both young people and for adults. Policy must continue to address matters of dyslexia and be prepared refer to any difficulties and proposals in the language which is most appropriate. The term "specific learning difficulties" was found to be meaningless to many who are involved with dyslexia and therefore there can be no mileage in its continued use as a substitute for "dyslexia".

Early identification of dyslexic difficulties was highlighted by the groups who were interviewed as a point for policy. Other research which has been described in previous chapters has given considerable insight into early indications of dyslexia, and much of this research has been used by the writer to develop a programme of screening for all local authority schools. A new set of possibilities are now offered by the research: early identification and intervention now offers a means of prevention of later failure or at least of minimising the harmful effects of lack of progress. Policy can address such issues in a local context. While the situation in East Renfrewshire may require further policy considerations, it seems that there are other authorities too which require to maintain vigilance in order to fall into line with forthcoming legislation.

This chapter has considered the current research in the light of dyslexia policy in the local authority context and what may still require to be done. The coming chapters extend this in terms of practice and provision.

CHAPTER 15

Practice

This chapter considers practical aspects in the management of dyslexia from the local authority and classroom practitioner's view. It considers the needs of young people, their parents and professionals and how these might be assessed and met in a practical way.

The three decades leading up to the start of this project have seen a considerable move in the way the government views education. From the egalitarian seventies when comprehensive schooling reached its height to the nineties when competitiveness has taken over, the implications for practice are worthy of note. Schools are in a position where they must vie with one another for their clients. Through placing request legislation (Education (Scotland) Act, 1980, Section 28 (1)), parents have a right to choose where their children will be educated. Schools must now also vie with each other for places in league tables, not just for academic attainment but for attendance. The implications of this are now having affects on practice not just in the secondary schools, but also in the primaries with all schools having to attempt to meet targets for all children. While few would dispute that high achievement is a worthwhile aim, few can deny that children whose needs may be difficult to meet or who might take the teacher's time away from other "more able" children may not be seen as a desirable addition to the classroom (Crombie, 2000; McGettrick, 1994), particularly in an area such as East Renfrewshire where many schools are running at full capacity.

"Facilitating and managing require an understanding of, and sensitivity to individual needs, strengths and concerns, as well as to group processes" (Kennedy, 1996, p. 81). In citing Schein's (1990) model of educational consultancy, Kennedy considers that the teacher is seen as "facilitator" and "manager" as well as "expert" and "doctor". She emphasises the importance of trust to the learning situation and considers that without a feeling of security and value, a child will not learn. In this model, the child must trust the "expert" – the teacher – in order to progress learning. This is borne out by the findings of this study which support the view that when

children get into a cycle of failure, then that failure is likely to continue until the child finds him or herself in a situation where s/he feels comfortable.

While for some children a feeling of trust can be achieved in the classroom setting, a number of children put their success in breaking the cycle of failure down to individual work with a particular specialist teacher outwith the classroom. This was stated by several young people when interviewed on what they felt helped them most in dealing with their dyslexia. Meeting individual needs requires the practitioner to be open to the young person and how s/he learns. Where some may learn best in a busy classroom, there are many others for whom this would not be best. A model is suggested of "wide spectrum support" based on the medical analogy of "wide spectrum" antibiotics. These are drugs which have been developed in a modern age to deal with modern diseases. They tackle a wide spectrum of different bacteria which are likely to cause harm. In the same way, "wide spectrum support" tackles a wide spectrum of learning needs by using methodologies which are known to work in a dyslexia context. In continuing the analogy, narrow spectrum antibiotics are generally cheaper than wide spectrum and are therefore recommended for initial treatment. When bacterial infection continues, wide spectrum antibiotics are likely to produce the desired outcome. In the same way, a model of support which initially supports the young person within the classroom is appropriate if difficulties are established at an early stage of education. Where they are not, or where they do not respond to initial intervention, sometimes more specific strategies and support needs to be employed and this may not always be appropriate within a busy classroom. Where this is appropriate it will inevitably be more expensive to implement. As with wide spectrum antibiotics there are occasions where they are necessary. An education authority therefore needs to have a wide range of supports available to young people. When a young person does not respond to initial classroom intervention, more structured individualised intervention may need to be employed.

This model fits well with the continuum model of dyslexia discussed earlier. Unfortunately previous attempts to match needs to provision have proved unsuccessful. According to Brown & Riddell (1994), Mary Warnock's vision of "a continuum of need matched by a continuum of provision" has been supplanted in practice by a "dichotomised system where the important distinctions are between

those pupils with and those without statements or records of needs" (p. 215). The initial failure of Mary Warnock's "vision" however does not deny its desirability. In the East Renfrewshire context, few dyslexic young people have a record of needs, and few parents see the need to use this tool to ensure that practice and provision are in line with policy.

In practical teaching and classroom management terms, Rutter and Yule in 1977 stated that,

> There is no one best teaching method but the most effective techniques seem to show certain common features. First, the teacher must gain the child's interest and give him confidence in his ability to succeed. As well as personal teaching qualities a variety of "gimmicks" may help in this connection. Second, the teacher must accurately appreciate just what the child knows and does not know. Third, the teaching programme should be broken down in to a series of very small steps, both to make learning easier and to make it immediately apparent to the child that he is progressing. Fourth, the structuring of the programme should be such that it ensures early success. Reading retarded children will have had many years of failure and discouragement and it is of the first importance that they learn that they can succeed. Fifth, both the teacher and pupil must have accurate feedback to ensure that they can recognise achievements and also identify areas of difficulty. Sixth, there must be systematic rewards for progress and accomplishments. These may consist of the child seeing his gains on a chart with stars or other markers for reaching various levels, of praise and encouragement specifically given by parents and teachers for each piece of successful work, or sometimes of material rewards. However this is organised it is essential to change the usual emphasis on failure to emphasis on success (Rutter & Yule, p. 575).

They state that an individualised approach in which the child is seen "on his own or in a very small group" will generally be required. There has been little research evidence to counteract this advice though many professionals feel that physical inclusion of children in a classroom makes that classroom "inclusive" (Crombie, 2000, p. 18). Children who are unable to read and write however can be very easily excluded from the curriculum of the classroom, and find themselves in an "exclusive" system. What is required is for appropriate accommodations to be made for a dyslexic

young person in terms of access to curriculum. Dyslexic pupils are those for whom accommodations will be required to enable curricular access. Further research into the context in which teaching programmes are implemented is required, and this possibility is being followed by the writer at present.

There is much in current research which can help practitioners. They do however require training and experience to establish what works for young people. In practical terms of the classroom, research over recent years has supported the view that dyslexic pupils are better at reading text than they are at reading single words (Frederickson & Frith, 1998). This is due to the fact dyslexic children often have no semantic problems. They therefore compensate for decoding difficulties through reference to general background knowledge. This background knowledge may not always be available to children from other cultural backgrounds who are learning to speak English as an additional language (EAL).

Research by Stuart (1999) into the effects of early intervention using a phonics programme and intervention using a Big Books approach referred to inner city second language learners, and demonstrated that phonic intervention can be of greater and more lasting help than other approaches. However the research did not apply to dyslexic children, but to whole classes of children who mainly spoke Sylheti as their first language. A few spoke Cantonese or other languages. While the study does not have direct relevance at this point, it does serve to demonstrate that a phonic approach to teaching can have benefits to English second language learners. This will require to be considered when evaluating advice on management for classroom teachers and specialists alike, as this type of approach is contrary to much of the previously pronounced evidence.

Geva and others have related a child's ability in first language learning to their learning in second and subsequent languages. This relates to reading, spelling and comprehension (Geva & Ryan, 1993; Geva, Wade-Woolley & Shany, 1993; Geva, Wade-Woolley & Shany 1997; Gholamain & Geva, 1999). Geva & Ryan (1993) attest to their finding that oral proficiency in second language learners will be indicative of reading comprehension in the second language.

From the evidence already discussed, it would seem that children who are dyslexic in their first language would be expected to be dyslexic in any additional language as

well. It would follow that children who are dyslexic will be dyslexic in their home language as well as the language of instruction due to the cognitive difficulties associated with dyslexia, such as memory. Assessment of home language therefore would be indicative of likely outcome in language of school, and would be an important factor in the management of bilingual children who are experiencing any literacy difficulties. This recommendation is in line with the CRE report of 1996 which stressed the importance of home language in any testing situation if the child feels "most comfortable" in the use of their home language (CRE, 1996, p. 22).

The effects of phonological awareness training on the learning of young children, and later reading development is well documented, and is directly relevant to the general management of dyslexic-type difficulties (Bryant & Bradley, 1984). Nursery rhyme teaching is one way in which parents can make their children more aware of the sounds of words. Other more formal types of awareness training, such as using plastic letters to make simple words are less likely to be adopted by parents, though it is acknowledged that some parents may use such types of training.

The Success for All Programme

The Success for All programme (Slavin, Madden, Karweit, Dolan, & Wasik, 1992) is an American teaching programme which emphasises "prevention, early intervention, use of innovative reading, writing and language arts curriculum and extensive professional development to help schools start children with success" and then build on that success. Throughout the early stages, the principle that no student is allowed to "fall between the cracks" is fundamental (Slavin & Madden, 1999, p. 2). There are six main elements to the programme:

Tutors. Specially trained certified teachers work for twenty minutes a day on a one-to-one basis with any children who are falling behind in reading. This takes place daily at a time other than class reading time.

A schoolwide curriculum. During reading periods, children are regrouped across age lines so that each reading class contains children all at one reading level. Tutors are used to reduce class sizes for reading.

Preschool. Success for All emphasises language development, readiness and self-concept.

Eight-week assessments. These determine if children are making adequate progress, and are used to determine who will receive tutorial support, group placement and/or alternative strategies.

Family support team. This team consists of existing and additional staff, "parent liaisons" (home-school link), social workers and counsellors.

Facilitators. The efficient running of the programmes is dependent on the coordination of all personnel including parents and children and interpretation of the eight-week assessments.

Considerable claims are made for the success of the programme and quality control is an important element. The implications for policy are discussed as are systemic issues which can either promote or inhibit school reform. Research is a major part of any change associated with the Success for All model. Policies are made to support practice taking account of standards, assessments and accountability mechanisms which are likely to encourage the exploration of new models for change. Funds for whole-school reform and professional development are allocated. Further funds are available based on willingness to engage in whole-school reform to enable outstanding schools to act as demonstration sites and to allow for mentoring of other schools. An exact replica of the above programme would be unnecessary, but many of the elements confirm the findings of this study in terms of the constituents of successful practice: training, parental involvement, early identification of needs and appropriate intervention.

> As the level of ICT skill and knowledge in the profession rises, so too will the expectations of what teachers should achieve by the effective deployment of ICT in their work. This curriculum will no doubt be revised in due course to reflect ever more demanding cognitive and pedagogic skills. (Dawes & Leask, 2000, p. 195)

If teachers are to be of use in helping and advising pupils on the most appropriate technology to meet their needs and to alleviate the negative effects of dyslexia, then they too must become proficient in all aspects of the new technologies. In practice, they must be able to use the available resources – computer hardware and software, video, DVDs etc. They must become aware of individual students' needs from the

earliest stages and the most effective means of enabling pupils. The dependent structure of the curriculum in terms of reading and writing need not disable students.

Training for school staff in the technologies should to some extent be addressed by the National Opportunities Fund (NOF) training currently in place (Apple Education, 1999). An additional essential is the motivation of staff to change: to address issues, challenge ineffective systems of teaching provision and assessment an put in place efficient and effective practice for all.

In so doing, teachers must not lose sight of the old technologies – pencil, paper and specific direct multisensory teaching from the earliest stages. While familiarity with technology is essential, so too is familiarity with books and the enthusiasm and desire to "have a go" as in time it is these elements which will determine whether a label "dyslexia" is appropriate or not. Lack of motivation and desire to read must not be seen to cloud the issue of whether or not a child can read by conventional means.

There are currently children and adults who have no access to computers in the home (Leask, Pachler, Barker & Franklin, 2000). As costs continue to drop however and education authorities see the potential of new technologies for all (Howson, 2002; Munro, 2001), it seems likely that in the course of time books and computers may vie for their place in every home. The school diary is likely to become redundant as access to e-mail and school websites will facilitate transfer of information between home and school. Concerns over non-reading dyslexic parents too should cease to be an issue as children and adults make use of the available text-speech and speech-text technologies (Crombie & Crombie, 2001). While there are likely to be new issues for psychology and education as the dangers of social isolation through computers become apparent, the benefits for dyslexic users are being realised and the process must be facilitated.

This chapter has considered implications of the finding of the study for practice for dyslexic young people in a real world context. Teaching, support staff, educational psychologists and parents must be aware of what research has taken place and the findings so that they may in turn implement best practice for all young people.

CHAPTER 16

Provision

In 1999, Her Majesty's Chief Inspector of Schools' Office published the results of "A Survey of the provision in mainstream primary and secondary schools for pupils with a Statement of Special Educational Needs relating to specific learning difficulties (HMI, 1999). While this report was conducted in England, the findings are relevant to this study. The survey of provision for specific learning difficulties (dyslexia) was conducted between April 1997 and July 1998 by four of Her Majesty's inspectors. In the process of this survey, thirty-four mainstream junior, primary and combined first and middle schools, one Special Educational Needs Support Service working with primary-aged pupils and twenty secondary schools in ten local education authorities throughout England were investigated. The majority of these pupils attended specialist provision in units, classes departments or resource bases attached to mainstream schools. Although the majority of pupils were in specialist provision, some were in mainstream schools, a situation which might be considered to be equivalent of the situation for most dyslexic pupils in East Renfrewshire. Some of the pupils surveyed had additional teaching from a specialist, trained teacher with other help from a Learning Support Assistant (LSA), the equivalent of a special needs assistant in Scotland. In many of the local authorities concerned, the specialist provision attached to mainstream schools was seen as the authority's main provision for dyslexic pupils.

Some of the main findings of this report were that:

- Pupils who were identified early in their primary schools made better progress than those identified near to their transfer to secondary school.
- The statutory assessment that resulted in the Statement of SEN provided valuable information on pupils' strengths and weaknesses. and made a significant contribution to the planning of the specialised teaching programme.
- In some cases, pupils who had received well-targeted specialist help made very significant progress in reading. One pupil, for example, gained four and a half years' progress in reading in eighteen months.

- Good reading progress was generally associated with a highly structured programme of teaching, often involving a multi-sensory approach. In addition, pupils were specifically taught skills of word making and building.
- The teaching strategies devised for dyslexic pupils were often used effectively with other pupils who had more generalised learning difficulties.
- A main weakness was that the assessment of pupils' writing was not well developed (HMI, 1999).

(In view of the pupils' areas of difficulty, this does not seem unexpected.)

Recommendations stressed the importance of early identification of difficulties, and the provision of additional well-structured help as early as possible in the primary school. Nursery provision, it seems, was not considered. Differentiation of tasks to minimise the dependence on reading and writing is seen as important, as is the importance of considering technology and keyboard skills. Study skills too are viewed as important for dyslexic young people.

Her Majesty's Inspectors considered also parents' perspectives. Many felt that valuable time had been lost at the early stages of primary school resulting in "a waste of valuable time for early specialist intervention and a significant lowering of the child's self-esteem and confidence. This is borne out by the current research reported in this thesis.

According to figures produced by the Professional Association of Teachers (PAT), there are approximately 350,000 schoolchildren in the UK affected by dyslexia (PAT, 1996). This constitutes on average one child in every class. The document states that "every teacher needs to know how to be able to help that child to learn effectively. It is likely that more differentiation of tasks will be necessary for the dyslexic child. It is even more likely that the teacher will need to adopt a different teaching approach - one which suits the pupil" (PAT, 1996, p. 7). While this document applies mainly to England and Wales, it nonetheless states that "it is the teacher's responsibility to initiate the first stage of the identification and assessment process". This process could apply equally in Scotland where it is stated in the document Effective Practice for Special Educational Needs (EPSEN) that "through the procedures normally used in the classroom, the class teacher assesses individual's learning difficulties" (SOED, 1994, p. 38). The Manual of Good Practice later supports this, and features of good

practice are concerned with "policy in relation to the arrangements for the early identification and assessment of special educational needs as recommended in EPSEN steps 3-4; guidance and support procedures for identifying, assessing and providing for special educational needs; and implementation and evaluation of practice" (SOEID, 1998, p. 74).

Government intervention in the United Kingdom has sometimes initiated and sometimes reinforced a move toward a more practical and vocationally oriented curriculum. This has on some occasions resulted in more practical and school-based assessments. Accountability however remains a major Government concern and the maintenance of traditional academic values is seen as being supported by the use of externally imposed tests (Gipps, Brown, McCallum, & McAlister, 1995). These tests however, as embodied in Baseline assessment, are insufficient on their own to determine early signs of dyslexia, or to determine what might be considered appropriate provision for those displaying early indications of dyslexic difficulties. Responsibility for identification of learning difficulties such as dyslexia has been devolved to local authority and individual school level.

While the Government has been happy to spell out the necessity to meet the needs of young people through its involvement in the drawing up and passing of legal acts, it has been extremely reticent to spell out how this might be done. Identification of dyslexia has been particularly piecemeal and determined by individual local authority policy and individual psychologists. Teachers, while seldom having responsibility for labelling, have considerable responsibility for initiating the assessments which result in the label. Without a label however, it is difficult to ensure that appropriate provision is in place (Pumfrey & Reason, 1991; Ott, 1997).

According to Rutter, Tizard & Whitmore (1977), "it is necessary to make sure that services reach those people who most need them. The better educated sections of the community tend to be better informed on how to obtain services, yet often it is the underprivileged groups who most need them" (p. 338). From the East Renfrewshire surveys there are indications that some dyslexic families from areas of deprivation may not be aware of dyslexia, and therefore are unable to take a stance in ensuring their children's rights to appropriate provision. Rutter et al. emphasise the necessity to have clear identification procedures to ensure that children with difficulties are

identified, and suggest screening as a means of ensuring that no child "slips through the net" (p. 338). Various tools for screening and identification have been considered in this study. None of the current commercially available material for the early assessment of dyslexia proved successful in reliably identifying young dyslexic children in East Renfrewshire. The novel materials which are now in place for screening would hope to ensure that no East Renfrewshire child "slips through the net", dyslexic or not.

This chapter has considered the importance of appropriate provision for dyslexic children. This is dependent on effective identification of any learning needs and strengths which they may have. Only when these have been identified can appropriate support and accommodations be ensured by management.

CHAPTER 17

Discussion

In embarking on this study, a grounded theory approach (Glaser, 1978; 1998) was to be a main methodology in extrapolation from the data. What has emerged has in many ways done credit to the grounded theory approach. Some may however argue that the approach adopted is not "pure" grounded theory as it also takes account of individual views which are strongly held. Henwood and Pidgeon's (1995) notion of grounded theory being set in local contexts which give grounds for adopting the "goodness" of particular research has however been followed and emerging themes have been acknowledged not only through qualitative analysis but also through quantitative, where this has been available. A process of "progressive focusing" and "cycles of interpretation" have been entered into, acknowledging the work of McKernan (1996), Henwood & Pidgeon (1995) and Miles and Huberman (1994) in considering what information is valid for consideration.

"Done properly, the grounded theorist can never dream beforehand what he will discover and which literature will apply" (Glaser, 1998, p. 69). The researcher did not in fact dream before the start of the study that somewhere in the middle of the research the whole concept of dyslexia would come into debate through the introduction by the British Psychological Society of a new definition which stated that dyslexia was considered to be,

> evident when accurate and fluent word reading and/or spelling develops very incompletely or with great difficulty. This focuses on literacy learning at the 'word level' and implies that the problem is severe and persistent despite appropriate learning opportunities. It provides the basis for a staged process of assessment through teaching. (BPS, p. 18)

"The literature is discovered just as the theory is. Once discovered the literature is compared as simply more data" (Glaser, 1998, p. 69). This definition was extremely pertinent to the study and therefore had to be considered as more than "simply more data".

According to grounded theory, while working in the research field, the researcher continually asks questions as to fit, relevance, and workability about the emerging categories and relationships between them. By raising questions the researcher checks

those issues while the data are still accessible. As a result of constant checking of data, the analysis and the data are combined till the best explanations are obtained (Glaser, 1978, p. 39).

In addition, the notion of "grounded theory" (Henwood & Pidgeon, 1995; Strauss & Corbin, 1990) suggests that local contexts and accounts may form the grounds for adopting the "goodness" of particular research. Grounded theory is theory that is inductively derived from the study of the phenomenon it represents. Methodology in this approach involves specific analytic strategies formulated for handling, and making sense of, initially ill-structured qualitative data. Qualitative data generates an array of recurring themes, topics and patterns grounded in interviews, documents, and other sources of data. The volume of qualitative data gathered provides significant indications of recurring patterns (Glaser, 1998).

While an extensive array of literature has been considered in the course of this research, because of the local context in which the research was conducted, efforts have been made to look critically into applicability before accepting it "as simply more data." When applicability was appropriate, the research findings from the literature was used to give added weight to the findings from the current research. Where this evidence from the literature conflicted with the current research, this was reported and further considered to establish if it was the context which had affected the findings.

The issue of boundaries and the degree of severity of difficulties which is necessary before one can be categorised as "dyslexic" has been one of the major problems for the whole concept of "dyslexia" almost since the inception of the word (Crombie, 1994: Cowley, 1992). Perhaps the fact that early usage of the word was as a medical term as opposed to an educational or psychological concept meant that there was no early debate regarding inhibitions about the use of medical terms. Educationalists however do consider terminology important, as has been seen, particularly as these might lead to litigation. To use a medical analogy, cancers, it seems, can still be cancers even though they are extremely localised with minimal long-term effects to the individual concerned. Dyslexia however may not be dyslexia if it is mild and affects only certain areas of the young person's cognitive functioning.

In this research, the head teacher of school S29S reported that incidence of dyslexia rose in the period before young people sat their Standard Grade exams. See Chapter 9. It is accepted that there is pressure from parents for schools to make special provision for dyslexic pupils in exams, and where a reader or scribe will enable a child to demonstrate their attainment, then this can generally be arranged (SQA, 2001). This then puts pressure on local authority services to provide assessment of needs. A definition of dyslexia which is responsible for this type of chaotic organisation cannot constitute best practice in a local authority context, and this had partly convinced the writer that a new conceptualisation of dyslexia is required. This has formed a sizeable part of the study from 1999 on, when the British Psychological Society introduced its "working definition". The description of a "persistent" difficulty does little to come to terms with the issue of boundaries of what constitutes "dyslexia".

Cultural factors largely determine the effects which dyslexia is likely to have on the individual. Societies where there is little dependency on literacy in the written sense will find dyslexia does not present as a handicap. On the other hand, in present day western Europe with its Alphabetic writing systems, there is considerable potential to deter the individual's progress and social standing throughout their schooling and in post-school life. Frith (1999) warns of the dangers of defining dyslexia at a single level of explanation and presents the paradoxes of attempting this. She describes three likely levels of explanation – biological, cognitive and behavioural - and feels that the most satisfactory way of defining dyslexia will be to acknowledge the contributions of all three. "Theories situated within the three-level framework", she states, " have the potential to unify ideas on the causation and remediation of this fascinating condition" (Frith, 1999, p. 211). Whether or not it is possible to "remediate" dyslexia is open to debate outwith this study and will be further questioned, but certainly the unification of thinking on tackling problems at a national and international level is a worthy cause. However Frith's models are explanatory, and while explanatory models may hint at steps for action, they are not in themselves action plans, nor can they necessarily justify such plans.

In consideration of the above matters, the writer attempted to further illuminate,

- Understanding the continuum (or spectrum) model of dyslexia,
- Understanding the non-discreteness of the problems and the multiplicity of difficulties, strengths and differences,
- Understanding the uniqueness of the individual within the above perspectives.

In attempting to find unifying features, the British Psychological Society determined that the feature all dyslexic children had in common was a word reading difficulty. A word reading difficulty in itself however would not cause the frustrations which very often accompany dyslexia and which have been brought out in this study. See Chapter 9. It was generally the frustrations caused through an inability to put into written words the thoughts which their peers could manage to convey easily through the written medium which characterised the lasting nature of dyslexic problems and frustrations. Reading difficulties can often be overcome, even in dyslexic individuals. The lasting frustrations of struggling to express thoughts in words however have more deep rooted consequences. The reconceptualisation of dyslexia which follows in the next chapter should help to clarify exactly what it means to be dyslexic and encapsulate dyslexia in an inclusive framework.

Issues of psychometrics

The aim of a psychologist in selecting a test is to ensure that it has both reliability and validity, the one being dependent on the other. As far as dyslexic children are concerned, when the teacher is faced with the results of testing however, it is the task of the teacher to recognise a concept such as predictive validity and to seek to invalidate it (Pumfrey, 1985). The teacher must recognise that although a child's comprehension score on a reading test at the age of eight years is likely to indicate that child's comprehension at the age of leaving school, it is possible through appropriate cognitive, metacognitive and emotional support to increase comprehension skills in the intervening time. If this were not so, the purpose of education itself would largely be invalidated. For many teachers then psychometrics serves a function for which it was not initially intended. It does in some cases however have positive consequences.

Reframing

Reframing, according to Watzlawlick (1974), involves changing "the conceptual, and, or emotional setting or viewpoint in relation to which a situation is experienced and to place it in another frame which fits the "facts" of the same concrete situation equally, or even better and thereby changes its entire meaning" (cited in Dowling, 1985, p. 24). While reframing can be applied in many settings, it seems that the concept of dyslexia as it applies to East Renfrewshire, could be altered to avoid much of the confusion and antagonism which exists between parents and schools. In time the concept of dyslexia could be reconsidered more widely to fit settings other than East Renfrewshire.

This chapter has called into question much of the accepted wisdom in the field of dyslexia with a view to establishing a common understanding of the terminology through a reconceptualisation of the term "dyslexia" itself. This reconceptualisation is described and justified in the following chapter.

CHAPTER 18

Dyslexia - A Re-conceptualisation

It has been necessary in the course of this study to consider in appreciable depth how dyslexia will be defined. As a result, a reconceptualisation is proposed which takes account of the inclusive educational environment in the East Renfrewshire context.

"Everything should be made as simple as possible, but not simpler."
Albert Einstein

It may well be that in the future, dyslexia will be determined and labelled by medical practitioners, as it once was. Indications currently suggest that learning styles and particular cognitive styles of functioning are likely to be determined by neurological brain structure and its interaction with chemical functioning. While this is not the same as saying that neurological structure is unchangeable by education, it is possible that CAT and MRI scans may hold the key to future diagnosis. However, "if there is such a thing as growing human knowledge, then we cannot anticipate today what we shall know only tomorrow" (Popper, 1960, p. x). In the meantime and in the light of recent current debates (BPS, 1999; Cooke, 2001), it is necessary to consider how the current situation regarding assessment (or diagnosis) of dyslexia might be simplified.

This study did not set out to investigate definitions of dyslexia. It set out to study how dyslexia could be identified early, so that early intervention could be put in place. In the course of the study it was necessary to look in depth at definitions of dyslexia so that both the writer and the reader were fully aware of the implications of terminology on policy, practice, provision and management. In the course of looking at these definitions, the British Psychological Society set up a working party to consider how dyslexia might be appropriately defined. The working party of the Department of Child Psychology reported in 1999 (BPS, 1999). The definition produced was written in the light of litigation which has previously found a BPS member at fault for not identifying dyslexia according to the definition accepted at the time and described below and in Chapter 1. This caused the writer to once more consider the implications of terminology on the education system and the legal system

as ultimately if parents are unhappy with the education system it is to the legal system that they turn for decisive conclusions.

As was seen in Chapter 1, the definition of dyslexia according to the final decision of the House of Lords in 2000 was determined to be " a disorder manifested by difficulty learning to read despite conventional instruction, adequate intelligence and socio-cultural opportunities. It is dependent upon fundamental cognitive disabilities which are frequently of constitutional origin" (National Federation of Neurology, 1968). Based on this definition the local authority (Hillingdon) were found to be vicariously liable for the negligence of their educational psychologist in the non-identification of dyslexia. The definition of dyslexia and the assessment materials which were available to educational psychologists at the time of Pamela Phelps' schooling were vital to the judgement (House of Lords, 2000; 2000a; 2000b). In all it took the courts some seven years to reach this decision from the time of the initial writ against Hillingdon Council till the date of the award of damages. This clearly cannot be a satisfactory way for any education system to operate. "Re-visioning and creating a new image of education first and foremost require the breaking of old frames of reference about educational renewal and creating new frames of thinking" (Banathy, 1991, p. 47).

According to Banathy (1996), "We are responsible for the design of the systems we inhabit" (p. 33). Banathy argues that the design of systems can be changed and that in adopting a design approach to specific social systems, "We focus on finding solutions and creating things and systems of value that do not yet exist" (p. 35). Design is concerned with "goodness of fit" and "the impact of design on future generations" (p. 35). For dyslexic children, the system can take a considerable time to put in place satisfactory provision. The system therefore should be subjected to in-depth scrutiny and the consideration of designing better alternatives. Designing systems enables and empowers future generations "to direct their own lives and shape their own destiny" (Banathy, 1991, p. 47). To change the system, we will require to change thinking on what dyslexia is. Banathy, in referring to George Bernard Shaw and considering possibilities for creating a new future system for education states, "You see things as they are and ask WHY? But I dream things that never were and ask: WHY NOT?" (Bernard Shaw, cited in Banathy, 1991, p. 47). The solution to the

determination of dyslexia accepts both Einstein's quote from above and Bernard Shaw's, and sets out to simplify the system of assessment in order to take away many of the problems and anomalies which leave the system open to legal and professional debate – debates which for some even question the existence of dyslexia as a worthwhile concept. One of the basic tenets of general systems theory, according to Dowling (1985) is the emphasis on the context in which the phenomenon occurs. The context of East Renfrewshire schools has been closely studied and conclusions reached based on these the findings in context.

Banathy (1991) proposes models ("lenses") through which to look at educational organisations and understand, describe, and analyze them as systems. The use of the "systems-environment" lens allows us to take a "bird's eye view" and enables us to describe the system in terms of the community and society; the "functions/structure" lens refers to what the system is at a given moment – a snapshot view; and the "process/behaviour" lens looks at what the education system "does" through time (Banathy, 1991, p. 33-34). All three lenses are required to give a complete picture and "no single lens can provide a true representation of an educational organization" (p. 34). Each lens portrays certain characteristics and all three must be overlaid on one another to reveal the real story.

Currently with respect to dyslexia the system is largely closed with the assessment and determination of dyslexia for any individual resting with the professionalism of (mainly) educational psychologists. The creation of a new image of this part of education "cannot and should not – be the prerogative of a 'chosen few'" (Banathy, 1991, p. 46). The boundaries with respect to assessments are hypothetically closed too, but in reality, as has been seen previously, they are extremely fuzzy. A pupil assessed as dyslexic in one education authority may not fit the same criteria as others in another education authority, and as has been seen in this study, the criteria and assessment tools used by psychologists are not agreed. Even within an education authority, as shown in the current study, there are differences in practice which could result in a child being considered dyslexic by one psychologist while not being considered dyslexic by another.

To understand more fully how dyslexia might be re-conceptualised and take a holistic view from a local authority perspective, one might turn from early education

to the end-point of school education. The end-point is assumed here to be the point when the young person moves to further or higher education or into the world of work. The barriers which the dyslexic young person faces on their journey from early education to end-point must be considered as must the means to overcome these barriers. In between, one must look in some depth at the system which actually imposes the barriers. The benefits of the current system for dyslexic children must be considered and closer investigation of how current barriers might be removed is required. It will then be possible to establish a new and better system which might then become a model of good practice for dealing with learning problems of all kinds. This model could reflect a means of analysis for the future to eliminate many barriers which the system imposes on young people through education as it exists at present. This is the model recommended by MacKay (2000). Here a combination of hard- and soft-systems methodology will provide the framework and justification for the changes recommended (Frederickson, 1990).

According to the current system, in order to demonstrate that they understand a topic, young people must generally read about it and write about it. Young people who are unsuccessful at reading and writing are therefore particularly vulnerable in the education system. At the endpoint of education from the education authority's view, young people are allowed to demonstrate what they can do through the use of a reader and/or scribe if that is what is required to enable them to prove their ability (Scottish Qualifications Authority, 2001). They can also make use of technology to present their answers in formal exams and classroom assessments. While these forms of presentation and reception are available in the early years, they are seldom used to any significant extent. To take away the reading and writing is to take away the barriers to both learning and to demonstrating they have learned. As far as dyslexic children are concerned if the barriers are removed then dyslexic children can "do it". For some children there is a discrepancy between what they can do with the removal of reading and writing from the task, and what they can do when they have to use reading and writing in order to do the task. If this situation were turned on its head, then the assessment of dyslexia could be through the removal of the task of reading and writing.

As it is in the curricular situation that young people would gain the greatest advantage from not having to read and write, the education system's removal of reading and writing from the curriculum of dyslexic young people would be enabling. For young people who fail when the tasks of reading and writing are present, but succeed when they are not, we can assume dyslexia. For those who fail regardless of whether or not the tasks of reading and writing are required, we cannot assume dyslexia.

While many of the questions of boundaries will still be present, the necessity for psychometric assessment with all its accompanying weaknesses, will have gone. The argument that everyone would benefit if they were given a reader and scribe would also be gone, as all those who would benefit would be given a reader and scribe. In current times however, the use of a human reader and scribe are becoming unnecessary as technology takes over this role. A change in the system to take account of the use of computing technology should become the norm for all young people. While dyslexic young people may need the addition of voice recognition and voice output technology, they should then be able to cope with the work alongside their peers. With the necessary technology, they should indeed be equal to their peers academically, and be enabled to show what they can do. This will be the new dyslexia. Dyslexia will be reframed in a positive lens as children who require special arrangements to demonstrate their ability within the curriculum.

Thus through a redefining of dyslexia in a solution-focused way, we also provide the answers to the dyslexic problems. This is not however to deny that there are often accompanying weaknesses which do not immediately relate to literacy. This has been demonstrated by the research reported in previous chapters. Dyslexia however is not an entity in itself. It is the manifestation of a range of cognitive "weaknesses". Miles (1993) describes this pattern of difficulties and incorporates these in his Bangor Dyslexia Test (Miles, 1983b). Dyslexia is **not** however a name for the "deficits". It is a name for the way in which these deficits manifest themselves in different individuals. This is what has led us astray and misdirected our efforts to find a resolution. A common pattern of what dyslexia is then becomes impossible to find as these deficits are not consistent across all of those defined as dyslexic. These deficits or difficulties are therefore not necessary for a definition of dyslexia. They are

however sufficient to give cause for concern and to indicate that dyslexia and therefore problems with literacy development are likely. These deficits which Miles and others argue would constitute a syndrome are part of the general pattern of dyslexia for many individuals. They are however caused by constitutional factors which are a part of the cognitive makeup of these particular individuals. The search for the common pattern has led many researchers up a path leading to a dead end. There is not, nor can be, one common pattern which exists for all dyslexic individuals. There can however be common elements to different patterns, and it is these common elements which Miles describes in his "pattern of difficulties" (Miles, 1993).

Searching for a common pattern through psychometric assessment therefore becomes unnecessary. The notion of discrepancy between IQ test scores and reading test scores is in fact pointless. Bearing in mind the disputes which continue to pervade the psychology world on whether or not the concept of intelligence is a valid one (Howe, 1990, Stanovich, 1996), it is one which we worry about unnecessarily. It is in fact possible to view dyslexia from a perspective which does not rely on IQ tests or on psychometric assessment at all.

If dyslexia is viewed for what it is – the manifestation of the range of deficits, not the deficits in themselves, then measuring (or attempting to measure) these deficits becomes meaningless. What we do need to take into account are the manifestations – the inability to demonstrate one's potential in reading, writing and spelling. The answer is to take away the reading, writing and spelling and identify if the individual can then demonstrate their attainment. If they can "do it" when the reading and writing tasks are taken away, they are dyslexic. In the modern day, the requirement for reading and writing is rapidly diminishing. Technology will enable the dyslexic person to demonstrate what they are capable of (Austen, 2001; Crombie & Crombie, 2001). Assessment of dyslexia then becomes a curricular assessment not a psychometric one.

Those who adopt a "scientific" perspective may argue that this is not scientific. Bearing in mind the possible inaccuracies which are liable to come into play in psychometric assessment (Howe, 1990; McKay, 1996), curricular assessment seems likely to be as accurate as many psychometric tests claim to be, and is more appropriate to a 2002 situation where the importance of tasks of reading and writing

are becoming unnecessary as the only means of demonstrating ability and/or attainment. The system which is in place for assessment in such static tests as Standard Grade and Higher examinations and national testing (SQA, 2000) offers opportunities for all to demonstrate their abilities. Many currently question why it is that dyslexic students are allowed this provision and argue that all children would benefit from the use of a reader and scribe. If there is a clear difference between level of achievement with and without special arrangements for reading and writing (including spelling) and this is for cognitive reasons as opposed to physical, then the young person is dyslexic, and the definition of dyslexia is now dependent on that discrepancy, not on a psychometric one.

This of course is not to deny the importance of early identification and early intervention. In reality these are as important, if not more so, than they ever have been. Young people wish to be able to read and write with their peers, and the education system must ensure that as far as children are able they are enabled to do this. When however this is not possible, it will always be possible to ensure that young children can do what their peer group can do through use of appropriate support. If support is in place then an early label is not required. Dyslexic children can achieve. What is required is an understanding by all of the implications of failing to learn to read and write, and an understanding of the interventions designed to meet the literacy requirements of all.

In some cases this may be one-to-one; in others it may be within a small group. There does need to be greater liaison with parents and a re-framing will be essential for almost all.

The education system should be about children achieving their potential. The system should be about enabling children – all children. The new definition may sweep wider than previous definitions. If it does, that should not be a problem. The success of the reconceptualisation will lie in its inclusive nature. We will not have to rule out factors, such as poor socio-economic grouping, sensory difficulties or missed schooling to determine who is and is not dyslexic. All children who can achieve with accommodations will be dyslexic. Those for whom there is no difference will not.

The reconceptualisation is further justified by Reason & Morfidi (2001) who emphasise the arbitrariness of cut-off points, while also stressing the value of studying

each case separately. "Progress in the light of all the influences on a child's learning, both constitutional and environmental, provides a better way forward" (p. 242). The reconceptualisation would tie in well with the British Psychological Society's definition (1999) in that the use of the label "dyslexia" could be left to the point where it has been established that accommodations are required. The search for boundaries, as argued by Wittgenstein and cited in previous chapters, will be a pointless one, as the boundaries which are sought are hypothetical and do not exist.

Tansley and Panckhurst (1981) argue for the term "specific learning difficulty" to be used "as a generic term which embraces dyslexia...". They continue... "...it retains the notion of seriousness without excluding children on the grounds of intelligence. At the same time the use of 'specific' as an adjective suggests a particular learning problem which urgently needs attention" (p. 33). Where Tansley and Pankhurst previously argued against the term "dyslexia" on the grounds that it did not describe "a unitary condition" (p. 32), they then argue that "specific learning difficulty" is more appropriate as it describes a "particular" learning problem - an argument which does not stand up to scrutiny. As has been found in this research there are now no grounds for the continued use of this term as a meaningful entity, as it has been found to have very little meaning to most people, young people, parents and professionals.

Tansley and Pankhurst argued that "specific learning difficulties" might be seen as the term likely to serve the child's interests best, as it suggests "a particular learning problem (not general backwardness) which urgently needs attention" (pp. 26-27). They go on to argue that the term does not "exclude children of less than average intelligence (backward children) who may have learning difficulties just as acute as the child of average intelligence and better" (p. 27). These notions have been considered and found to be unsubstantiated by the current research in the present climate.

In summary then, the reconceptualisation defines DYSLEXIA as a set of strengths which can be applied to a person who has sufficient strengths and understanding that s/he can demonstrate their abilities when accommodations[2] are made for them. The term "dyslexia" applies to a person who requires accommodations to be made in order

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[2] Accommodations here can be defined as a set of enabling arrangements which are put in place to ensure that the dyslexic person can demonstrate their strengths and abilities, and show attainment.

that they can demonstrate their abilities. A person therefore is not dyslexic if they are unable to demonstrate specific abilities or attainments.

The current inclusive philosophy is embodied in the new definition,

Dyslexia is a difficulty with literacy which results in a person requiring a set of accommodations to be made to enable them to demonstrate their abilities.

This does not change fundamentally the group of people to whom the word "dyslexia" applies. While an educational psychologist would be sufficient to determine dyslexia, they would not be necessary. A professional teacher could determine this. The person assessing would however require to be trained to know what accommodations are appropriate and how they can be applied. Professional training for those involved in dyslexia will therefore include training in this enabling philosophy and possibly the award of a specialist certificate which quality assures their knowledge of enabling technologies and techniques. The weight of the definition therefore moves from what the person cannot do, to what they can do. For the teacher the priority is to enable curricular access for any dyslexic individual.

While the syndrome perspective must be acknowledged, it is not a part of the definition, nor should it be as it is through the other accompanying signs and indicators that professionals initially recognise dyslexia at the very early stages. While in time neurologists may form another definition, what is required for now is a definition which will fit with an inclusive system of education and ensure that the needs of dyslexic pupils are met. The new definition will not alter the need for appropriate teaching in an effort to minimise reading and writing difficulties. It will however mean that the dyslexic individual will not be dependent on reading and writing at any age to demonstrate their attainment and ability.

Psychometric assessment however, and IQ tests in particular, while these may have proved helpful in the past, will be unnecessary. Where used, the specialist knowledge resulting should give greater insight into the strengths which can be used to enable the dyslexic person. The reconceptualisation is an enabling definition to fit the inclusive context of education today. As Wittgenstein suggests we have been looking for boundaries where none exist. If accommodations enable a child or person who has literacy difficulties, then they are dyslexic. If not, they are not. While there may be times and situations when a person requires accommodations to achieve, there may be

others when they can cope without. Dyslexia will not have gone away, it will always be there though its manifestations may change as for example a child eventually learns to read and write. For those who are dyslexic we must value their differences and nurture the benefits of difference and diversity and innovation which so often accompany dyslexia.

This chapter has considered how dyslexia can best be defined in an inclusive educational setting. The resulting definition is novel and proposes assessment of dyslexia which does not rely on psychometric assessment. Further recommendations will now be made in the light of this definition and the results of the whole study.

CHAPTER 19

Summary of Studies

This chapter sets out briefly the research which took place between 1997 and 2002 in East Renfrewshire and presents its value to the dyslexia field of education.

The value of the study

This study has highlighted many of the issues which have existed in the dyslexia field. While these have been acknowledged for some considerable time and many debates have taken place among professionals, and between parents and professionals, no resolution has been reached in over a century of debate. The present educational system is one of inclusion yet we still have an exclusive definition of dyslexia which exists to make the dyslexic pupil different from others. The researcher's novel definition of dyslexia acknowledges the Scottish Qualifications Authority's efforts to accommodate dyslexic young people through its examination system (SQA, 2001), and now proposes that dyslexia be defined in inclusive terms as " a difficulty with literacy which results in a person requiring accommodations to be made to enable them to demonstrate their abilities and attainments". This is an enabling definition which should ensure that education authorities put in place as a matter of course the accommodations which dyslexic young people require to access an appropriate and challenging curriculum.

Introduction

The study set out initially to investigate dyslexia at the early stages. A "grounded theory" approach was adopted, and use was additionally made of quantitative data to give weight to the qualitative. Issues of policy, practice, provision and management of dyslexia at the early stages were investigated through structured interviews and questionnaires. Influencing factors outwith school were considered in an Authority-wide survey to establish if these were relevant to the later unfolding of the dyslexic condition.

Originality

As a result of the research and developments in the course of the study, a powerful argument has been presented for a novel reconceptualisation of the concept of dyslexia. Strong evidence has been presented for the inclusion of early screening for dyslexia, as well as other learning needs and novel materials have been developed and critically evaluated. This should meet the needs of young people, their parents, teachers, management, educational psychologists and the local authority and fit the requirements of the system as it exists at the moment and as it continues to develop. This is the first study of its type to take account, on an Authority-wide scale, of the views of young people, their parents, head teachers and educational psychologists in determining how dyslexia will be defined and determined. It is also the first study of its type to have taken place in an education authority since the redrawing of education authority boundaries in Scotland in 1996.

Perspective and focus

The study focused on the views of all concerned and sought to involve them through participation in interviews, consultancy and through questionnaires. Relevant personnel have been involved in the developments which have taken place and which now contribute to the outcomes of the current study. As a considerable volume of research is available through the literature, this was considered at all points throughout the study, and as research evidence became available, this was introduced to the study as a means of supporting previous evidence or of contradicting previous findings.

Analysis

Throughout the study, ethical considerations were taken into account. Work was arranged to cause the minimum of inconvenience to school staff while taking account of the possible long term benefits to dyslexic children and others for whom literacy may be seen as problematic. Anonymity was preserved to ensure that views were taken into account without the need to attribute any negativity to individuals while

still being critical of much of existing practice. As a result it would be hoped that those who presented as being negative will now adopt a best practice approach. The thesis considered the range of perspectives which are prevalent in the dyslexia field and gave consideration to each at some point.

Analysis of data used various techniques. The main computer software which was used was the NUD*IST program for qualitative data and SPSS for quantitative. Additional consideration was given to qualitative aspects of the quantitative studies with quantitative aspects of the qualitative studies as various perspectives were considered. These have been referred to at relevant points in the thesis. Where statistical analysis was appropriate, this has been done to give a level of significance to the findings.

Conclusions

These have been described at various points throughout the study and are summarised in Chapter 20.

This chapter has summarised the thesis and its value to the field of dyslexia. Recommendations for policy, practice, provision and management of dyslexia are made in the chapter which follows.

CHAPTER 20

Conclusions and recommendations

The following pages consider the outcomes of the research described previously and present these as a set of conclusions and recommendations.

- The system as it stands at present is not conducive to education in an inclusive setting. It is unnecessarily complex, and does not result in the best or most realistic educational recommendations for individual dyslexic children. Reliance on failure to learn to read before a diagnosis is given with subsequent intervention, results in frustration for parents and young people themselves. This does not meet the needs of the young person, parents, the local authority or the professionals who work therein.

- As a large amount of what is "dyslexia" is due to the frustrations of knowing, but being unable to prove to others through the printed medium that you know, and while it seems that a large part of the frustration comes from discrepancies differences and difficulties experienced, it is appropriate that these are fully understood.

- Previous waiting for a gap to appear between reading age and chronological age with the unfolding of the dyslexic condition is no longer acceptable. Accommodations require to be made to enable access to the curriculum.

- The situation where professionals, many with no classroom experience of teaching children, are making recommendations for dyslexic children is unacceptable. Practical classroom management experience and realism is required to know what can be done. The General Teaching Council for Scotland maintains high standards of professionalism among the teaching profession within Scotland. Whereas the educational psychologist may on occasions be the most appropriate person to assess a dyslexic child, this may not always be the case, as there are specialist teachers who have more appropriate training to make teaching recommendations.

- Educational psychologist's time is being spent on drawing up plans for a curriculum for which they are not trained and not the best prepared. Time is allowed to elapse before assessment is undertaken, resulting in dissatisfaction among parents and frustration among professionals as they prioritise those with immediate, often more pressing behavioural needs which cannot be ignored.

- Terminology used should at all times be entirely comprehensible to all. Vague general terms should be avoided with precise information being given by professionals to parents, young people and other professionals who may not have access to the same assessment information and knowledge of the young person. Terminology should refer to the word "dyslexia", and a shared understanding of the term must be ensured. "Specific learning difficulties" is insufficient on its own to ensure understanding. As many professionals as well as parents do not understand the term, it should be avoided. Young people however require to know why they find certain literacy tasks hard, and this should be explained to them sensitively by their assessor in terms they will understand. Parents too require to have a greater understanding of their child's learning needs.

- Identification of dyslexia is recommended as early as possible to help the young person to understand at an early stage why it is that reading and writing are found to be harder than for most others. Early screening as a means of identifying needs should be carried out by Primary 1 at the latest.

- From a professional standpoint, the fundamental purpose of assessment should not be to label, but to plan effective and timely intervention and support strategies. If used properly, labelling is a byproduct of assessment which can yield benefits for both children and professionals as they come to terms with what is often a complex and bewildering learning need. Too much priority has been given by parents to a label which they feel will help ensure appropriate

support. Emphasis must shift from label to appropriate teaching before labelling does take place.

- From a personal and parental standpoint, labelling is essential as a means of facilitating discussion of the difficulties being experienced, and offering an explanation for the frustrations felt. Parents need to know what they are dealing with to ensure that the problems are being fully recognised and appropriate support is being provided. Young people need to know why they experience difficulties in areas which their peers find straightforward. If a young person is assessed as being dyslexic, this must be explained to the young person in language which is found to be acceptable, and which will not cause undue stress to either the young person or the family. Understanding of any problems must be viewed as part of any solution or amelioration of difficulties. Parents (and the young people themselves) must truly be treated as partners in the young person's education.

- In the case of dyslexia, labelling is not about making excuses or predicting outcomes. It is about offering explanations for difficulties which are often hard to comprehend. It is about facilitating planning and offering appropriate provision. Many policies currently make these acknowledgements while others do not. Educational psychologists and other professionals require to be honest with parents in their findings from assessments. It is insufficient to describe a child's difficulties as being specific, without indeed being specific in identifying precise areas of difficulty. Where a child's needs may appear to be imprecise, this has to be explained in language which can be understood by all.

- It is important to consider the self-esteem of the young person. A label may not in itself help self-esteem, but the explanation which should accompany any labelling of difficulties is likely to help the young person understand and come to terms with his/her learning needs.

- It is generally recognised that dyslexia exists on a continuum and that co-morbidity is common. Its assessment is independent of intellectual ability in the individual. It is important therefore that whoever assesses dyslexia has extensive knowledge of reading development, appropriate curriculum, intervention strategies and support, rather that the administration of IQ tests.

- Teachers and other professionals require to understand at least the basics in the field of dyslexia. It can no longer be acceptable to use terminology which is clearly not understood, or worse still misunderstood by a large percentage of the population. Teaching methodologies for dyslexic children also require to be demystified.

- The concept of "wide spectrum support" introduced in previous chapters is therefore justified, with support required according to the needs of the child with no one method being a complete answer in itself. The notion of "accommodations" for dyslexic young people which have previously been discussed must be accepted as a means of ensuring that the abilities of dyslexic young people are recognised, and they are given access to a broad curriculum. The appropriate support accommodations to be able to "read" and "present" their knowledge in the most appropriate way should be available for every subject.

- It is important that all teachers, educational psychologists and educational managers are trained in the accommodations necessary to empower young dyslexic people to take control of their own learning. These accommodations, which will include the new technologies, will be all important to the alleviation of any difficulties encountered and will help enable dyslexic people to achieve their potential.

- While an appropriately qualified educational psychologist would be "sufficient" to assess dyslexia and make teaching recommendations, an educational psychologist is not absolutely "necessary" for assessment. Dyslexia is generally more than a literacy problem. What is important is that the specialist has an in-depth knowledge of the wider implications of dyslexia and curriculum, and can advise others.

- There requires to be a greater understanding of bilingualism and dyslexia, and of the assessment of bilingual children. The notion of test—teach—test is recommended in Chapter 7 as a means of ensuring that bilingual children have received the teaching necessary. However in the case of dyslexic children, this is unlikely to be sufficient, therefore test—teach—test—teach—retest is recommended until children are able to retain. The amount of overlearning required may then indicate or contra-indicate dyslexia. Testing must be seen as part of the learning process, not as an end in itself and must be conducted in a situation which the child perceives as non threatening. Further dynamic assessment strategies along with abilities in home language learning will require investigation when there are concerns.

- A system whereby schools are accredited as being "dyslexia friendly" is recommended for East Renfrewshire. This system has worked well elsewhere and as a result, it would be expected that no school could ignore children who have dyslexic needs. Quality Indicators and further appropriate recommendations are included in Appendices 13 and 14. Schools would be inspected to ensure that these indicators were in place before they would be accredited, and thereafter would be checked annually to ensure that characteristics were held in place. Parental involvement in this process is essential to ensure credibility and a true partnership between parents and schools.

- Just as the mysticism which surrounds the specialist teaching of dyslexic children must be removed, so too the assessment techniques which educational

psychologists use must be demystified. Psychologists must be prepared to explain what they do and why. Many teachers have additional qualifications and expertise in special needs. There must be a sharing of expertise through more joint working. Educational psychologists receive initial training in research methodologies. There needs to be a greater advisory and participatory role in research. Freeing time from psychometric assessment and current statutory duties would allow for greater joint research with teachers to ensure that children receive the best support possible. While there has always been a degree of this in practice, it requires to be seen as commonplace. Educational psychologists also have a role in helping others understand how children learn. Parents need to be assured that teachers and psychologists are working together for the benefit of their children.

- All professionals require both pre-service and post-qualifying training in dyslexia. This requires to be updated regularly.

- The evidence for a genetic component in dyslexia is strong, and children in whose family there is a history of dyslexia are more likely than others to develop dyslexic types of difficulties. As there is increasing awareness and acknowledgement of dyslexia, there is an argument for including a question on this when parents enrol their child into nursery or school.

- The focus of this study, while it stresses an earlier stage than most of the research into dyslexia has previously done, may not yet have gone far enough. If indeed as Czerner (2002) suggests, the most important time for the neural pathways being established is in the first year of life, then the time when a person's predisposition to dyslexia is affected most, is likely to be this very early stage. However, this is not a stage when the education system has any significant influence, other than information giving. Further research into dyslexia in young babies may indicate how development may be affected by intervention in the first year of life. Questions will however require to be

addressed on whether or not such intervention might also prevent some of the beneficial effects of compensation later.

The above recommendations should result in a demystifying of the nature of dyslexia and the practice of teaching dyslexic young people. It should result in early identification of difficulties and intervention at an early stage. The system will be easily understood, adaptable, non-discriminatory, efficient and inclusive in nature.

Glossary

Action Research - Small-scale intervention in the functioning of the real world and the close examination of the effects of such interventions.

Axial Coding - A set of procedures whereby data are put back together in new ways after open coding, by making connections between categories. This is done by utilising a coding paradigm involving conditions, context, action/interactional strategies and consequences.

Bottom-up – The person begins with the raw stimulus then works their way up to more abstract but meaningful cognitive processing: e.g. in reading, they start with the letter shapes and sounds and use a decoding process to lead to understanding the meaning of a word and thence its meaning in context.

Category - A classification of concepts. This classification is discovered when concepts are compared one against another and appear to pertain to a similar phenomenon. Thus the concepts are grouped together under a higher order, more abstract concept called a category.

Causal Conditions - Events, incidents, happenings that lead to the occurrence or development of a phenomenon.

Code Notes - The products of coding. These are one type of memo.

Coding - The process of analysing data.

Co-morbidity – The existence in the one person of two of more conditions at the same time.

Concepts - Conceptual labels placed on discrete happenings, events, and other instances of phenomena.

Concurrent Validity – the extent to which the scores on a test relate to other measures of current performance by the same group of children.

Conditional Matrix - An analytic aid, a diagram, useful for considering the wide range of conditions and consequences related to the phenomenon under study. The matrix enables the analyst to both distinguish and link levels of conditions and consequences.

Conditional Path - The tracking of an event, incident or happening from action/interaction through the various conditional and consequential levels, and vice versa, in order to directly link them to a phenomenon.

Construct Validity – the extent to which the items in a test are an adequate sample to tap the psychological attributes the test is designed to measure.

Content Validity – the extent to which the items in a test form a satisfactory sample of items representative of the ability the tester wishes to test.

Context - The specific set of properties that pertain to a phenomenon; that is, the locations of events or incidents pertaining to a phenomenon along a dimensional range. Context represents the particular set of conditions within which the action/interactional strategies are taken.

Contingency - An unanticipated/unplanned happening that brings about a change in conditions.

Core Category - The central phenomenon around which all the other categories are integrated.

Dimensions - Location of properties along a continuum.

Dimensionalising - The process of breaking a property down into its dimensions.

Discriminate Sampling- Associated with selective coding, its aim is to maximise opportunities for verifying the story line and relationships between categories and filling in poorly developed categories.

Directionality - Ability to determine right and left outside one's body.

Genotype – The genetic constitution of an individual, the genes carried. Hereditary factors which affect the development of an individual.

Grapheme - Single letter shape

Grounded Theory - A transactional system and method of analysis which allows one to examine the interactive nature of events or circumstances.

Interaction - People doing things together or with respect to one another- and the accompanying action, talk, and thought processes.

Intervening Conditions - The structural conditions bearing on action/interactional strategies that pertain to a phenomenon. They facilitate or constrain the strategies taken within a specific context.

Kinaesthetic - Pertaining to muscle sense and movement, by which weight, motion and position are perceived.

Magnetic Resonance Imaging (MRI) – A procedure which uses a strong magnetic field to make some molecules spin round, When radio waves are passed through the body, the nuclei emit energy at different frequencies which are picked up by the scanner. This information is interpreted by a computer which assembles a picture of the slice of tissue scanned.

Morpheme - Smallest meaningful unit of form.

Network Support Teacher – Specialist teacher who provides advice and support for children with a range of special needs, including dyslexia.

Ontology - An aspect of metaphysical enquiry concerned with the question of existence apart from specific objects and events. Discussions about the conceptual realities of categories.

Open Coding - The process of breaking down, examining, comparing, conceptualising, and categorising data.

Open Sampling - Openness guides the sampling choices. Open sampling can be done purposively or systematically, or occur fortuitously. It includes on-site sampling.

Orthography - Correct or conventional spelling.

Phenotype – The physical, observable function or behaviour of an individual.

Phoneme - Smallest unit of sound.

Phonology - Processing of information contained in speech sounds.

Phenomenon - The central idea, event, happening, incident about which a set of actions or interactions are directed at managing, handling, or to which the set of actions is related.

Phenomenology - A theoretical point of view that advocates the study of direct experience taken at face value. Phenomenology sees behaviour as determined by the phenomena of experience rather than by external, objective and physically described reality (English & English, 1958).

Positron Emission Tomography (PET) scanning – a procedure that gives an analysis of the amount of metabolic activity taking place in various parts of the brain. The subject is injected with a radioactive glucose-like substance that is absorbed into the cells, particularly those that are metabolically active. A beam of X-rays reveals the activities of the radioactive molecules detected by a computer which then compiles a picture of the differential metabolic activities of various structures in the brain.

Pragmatics - Processing of information contained in the use of language for communication.

Predictive validity – The extent to which a test will predict children's future performance in a particular area.

Properties - Attributes or characteristics pertaining to a category.

Process - The linking of action/interactional sequences.

Proven Theoretical Relevance - Concepts are deemed to be significant because they are repeatedly present or notably absent when comparing incident after incident, and are of sufficient importance to be given the status of categories.

Psychometric Tests – Tests used to assess a child's cognitive ability.

Quotient – A quotient gives shows how a child performs over a number of different activities. An intelligence quotient (IQ) test summarises how a child is performing compared with other children of the same age on an intelligence scale.

Relational and Variational Sampling - Associated with axial coding, its aim is to maximise the finding of differences at the dimensional level. It can be done deliberately or systematically.

Reliability - The extent to which the outcome of a test remains unaffected by irrelevant variation in the conditions of testing. Consistency of measurement.

Selective Coding - The process of selecting the core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development.

Semantics – Study of processing of information contained in the meaning of words.

Soft Systems Methodology – An approach, based on systems theory, which can be used to guide intervention in ill-structured problem situations in the real world.

Stability – The consistency of a statistic. See Test-retest Reliability.

Standardised test– Tests which have been administered with a large number of children, chosen to be representative of the population. They are used to compare a child with other children of the same age.

Stepped Process of Referral – A local authority process by which children with any or a range of needs have their requirements identified and noted, along with any support they receive. They may also receive consideration for a Record of Needs. See Appendix 2, page eight of Dyslexia Policy document.

Story - A descriptive narrative about the central phenomenon of the study.

Story Line - The conceptualisation of the story. This is the core category.

Syntax - Processing of information contained in relations between words.

Test-retest Reliability – the agreement between two sets of scores when a test is given to the same set of children on two separate occasions. Otherwise referred to as "stability".

Theoretical Sampling - Sampling on the basis of concepts that have proven theoretical relevance to the evolving theory.

Theoretical Saturation –

(i) The point at which no new or relevant data seem to emerge regarding a category.

(ii) The category development is dense, insofar as all of the paradigm elements are accounted for, along with variation and process.

(iii) The relationship between categories are well established and validated.

Top-down – The person begins with the meaningful part of cognitive processing and works their way down to the most basic, fundamental processes: e.g. in reading, they start with the meaning of a word and work out what it says using context to aid processing.

Transactional System - A system of analysis that examines action/interaction in relationship to their conditions and consequences.

Validity - The extent to which a test measures what it claims to be measuring, the extent to which it is possible to make appropriate inferences from the test scores. Relevance of scores.

Utility - Cost-effectiveness of using a test. Utility is directly relevant to predictive validity.

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