

## **(Southern) Department of Education Task Force Report (2001)**

### **3.1 Introduction**

The purpose of this chapter is to lay the groundwork for later chapters in the report in which current provision for students with dyslexia in Ireland is examined and proposals are put forward for meeting their needs. The current chapter is divided into five parts:

- (i) A consideration of the definition of dyslexia used by the Department of Education and Science, and an overview of the main types of provision that are available to students with dyslexia;
- (ii) A comparison of the definitions of dyslexia employed in three other educational systems (the United States, Northern Ireland, and England and Wales) and an overview of the procedures and criteria used to match students to services;
- (iii) A consideration of the criticisms aimed at current system-level definitions and associated identification criteria;
- (iv) An overview of recent research findings on information-processing difficulties of students with dyslexia.
- (v) A definition of dyslexia proposed by the Task Force and a consideration of main characteristics of dyslexia.

### ***Dyslexia - Some Dictionary Perspectives***

The Greek roots of the word 'dyslexia' are 'dus' – a prefix meaning hard, bad, or unlucky – and 'lexis' – meaning either speech or a single word or phrase.<sup>13</sup>

According to one authority, 'the etymology of the term 'dyslexia' expresses admirably a difficulty – not in reading – but in the use of words, how they are identified, what they signify, how they are handled in combination, how they are pronounced and how they are spelled'.<sup>14</sup>

The *Oxford Dictionary* defines dyslexia as 'a developmental disorder, marked by extreme difficulty in reading or in understanding written words, or word-blindness'.<sup>15</sup>

The *Literacy Dictionary* describes dyslexia as 'a developmental reading disability, presumably congenital and perhaps hereditary in nature, that may vary from mild to severe. . . Dyslexics frequently have difficulty in spelling and in acquiring a second language, suggesting that dyslexia is a part of a broad type of language disability'.<sup>16</sup>

There are many definitions of, and perspectives on, dyslexia in the literature.

These generally serve one of three purposes:

- (i) to enable researchers to identify and describe individuals who are being investigated;
- (ii) to enable teachers and parents to recognise children who experience, or are at risk of developing, learning difficulties arising from dyslexia, so that those difficulties can be addressed;
- (iii) to enable educational systems to identify students whose learning difficulties arising from dyslexia are so severe that special education provision is necessary

The discussion of definitions in this chapter focuses on the second and third of these purposes.

### **3.2 Dyslexia - An Irish Perspective**

Since 1963, the Department of Education and Science has sanctioned learning support (remedial) posts in schools, with the objective of enabling students to bridge the gap between achievement and potential.<sup>17</sup> Since 1975, it has put in place a range of supports for students with specific learning disabilities (including dyslexia) which include special schools and special classes in ordinary schools. In general, official definitions of dyslexia and criteria for its identification have been concerned with addressing the needs of students with severe learning difficulties arising from dyslexia, who may need special educational provision. In 1993, the definition of specific learning disability, and the provision made for students with such a disability, were reviewed by the Special Education Review Committee (SERC), which adopted the term 'specific learning disability' in preference to 'dyslexia'. According to the SERC Report, the term 'specific learning disability' is used to describe:

impairments in specific areas such as reading, writing and arithmetical notation, the primary cause of which is not attributable to assessed ability being below the average range, to defective sight or hearing, emotional factors, a physical condition or to any extrinsic adverse circumstance

With regard to the identification of specific learning disability, the SERC Report recommended that

- assessment by a psychologist on a standardised test of intelligence should place general intellectual ability in the average or above average range (i.e., a threshold requirement);
- performance in basic skills in relation to objective criteria, such as standardised tests, [should be] at a very low level. It would be expected that some 2% of the overall pupil population would be found in this category (i.e., a discrepancy requirement).

The SERC Report made a number of additional recommendations relating to provision for students with specific learning disabilities, including the following:

- Recognition of existing special schools for pupils with specific learning disabilities should be continued and their development as resource centres, as part of the educational provision for such children, should be reflected in their staffing and funding levels.
- Additional teaching support for pupils with specific learning disabilities in the Infant Classes and Classes I and II at primary level, should be provided in their own schools by support teachers (i.e.,

remedial (learning support), resource, or visiting teachers, as applicable).

- Special provision for pupils with specific disabilities from Classes III to IV in primary schools; a pupil-teacher appointment ratio of 11:1 should apply to support-teacher posts to be sanctioned in such schools and pupils with specific learning disabilities should participate in ordinary classes as appropriate in each case.
- Transfer of a pupil with specific learning disabilities to a designated ordinary school<sup>18</sup> should be on a temporary whole-time basis, and not for more than two years as a general rule.
- Special provision for pupils with specific learning disabilities who are enrolled in ordinary classes III to VI in primary schools, which are not designated schools, should be made by means of support teachers.
- Teachers with experience in teaching pupils with specific learning disabilities should be appointed, on a pilot basis, to provide a support service as may be necessary for pupils.
- Special provision for post-primary pupils with specific learning disabilities should be made within the ordinary school system with assistance from a support teacher.

The SERC definition and assessment criteria have, in recent years, provided a basis for identifying students with specific learning disabilities, while the SERC recommendations on provision have influenced the development of services. Primary-level students with specific learning disabilities (including dyslexia) who meet specified criteria in relation to achievement, ability, and class level, are entitled to special education provision and may:

(i) continue to attend their own school and receive resource teaching support (usually one-to-one teaching from a special education teacher) for up to 2.5 hours per week in addition to extra support from the class teacher;<sup>19</sup>

(ii) transfer to a special class for students with specific learning disabilities in a designated ordinary school for a period of not more than two years;

(iii) transfer to a special school for students with specific learning disabilities

for a period of not more than two years.

Primary-level students with specific learning disabilities who do not meet eligibility criteria for special education services may be provided with additional support in their own school by their class teacher or by a learning support teacher.

Unlike primary level, provision of resource teaching at post-primary level for students with specific learning disabilities is not governed by circular. Students with specific learning disabilities who received support at primary level are entitled to receive such support at post-primary level, if they request it, while others may have to undergo assessment to establish eligibility. Support is typically provided in the student's own school by a resource teacher or by a learning support teacher, though relatively little information is available on the nature and quality of such support. Some post-primary students with specific learning disabilities may qualify for accommodations in state examinations, and may be exempted from the study of Irish. The types of provision and the accommodations that are available to primary and post-primary students, and the current criteria for eligibility, are considered

in detail in Chapter 4, where the views of organisations and individuals who made submissions to the Task Force on these matters are also considered. First, however, definitions of dyslexia used in other educational systems, and procedures used to identify students with dyslexia who may have special educational needs are considered.

### **3.3 Dyslexia in Other Educational Systems**

Other educational systems have, like Ireland, defined dyslexia and grappled with the issue of identifying the most appropriate educational provision for students.

In this section, definition and identification are reviewed in three systems: the United States, Northern Ireland, and England and Wales.

#### ***The United States***

In the United States, the term ‘specific learning disability’ includes dyslexia. The definition that has been adopted by the vast majority of U.S. states is the legal definition enshrined in Individuals with Disabilities (IDEA) Education Act 1997, which states that:

the term ‘specific learning disability’ means a disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written, which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell or do mathematical calculations. Such term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Such term does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage<sup>21</sup>

The IDEA definition establishes the term ‘specific learning disability’ as an umbrella term that distinguishes the population of persons with such a disability from other populations that experience learning difficulties for other reasons.

In the United States, the main steps for identifying a specific learning disability and establishing a need for special education are:

- (i) referral for psychological assessment, which is usually initiated by the class/subject teacher, and considered by a ‘Child Study Team’;
- (ii) assessment and identification of a specific learning disability;
- (iii) development of an individualised education plan;
- (iv) determination of the placement taking into consideration the concept of least restrictive environment;
- (v) at least yearly follow-up of the student’s progress in meeting the goals of the individualised education plan.

Assessment, which is governed by the requirements of the Individuals with Disabilities Education Act 1997, involves a multi-disciplinary team in collecting relevant information using standardised achievement and intelligence tests, teacher checklists, and behavioural observations. The multi-disciplinary team, along with the student’s parents, meets to review assessment results and to

identify whether a disability is present, and determines if the student needs and is eligible for special education services. If a disability is identified and special education services are needed, a second meeting is called to develop an individualised education plan for the child. This meeting involves the student's parents, a special education teacher, a class teacher (if placement in an ordinary classroom is suggested), a representative of the local education authority who is capable of delivering and supervising special education instruction, and, where relevant, other professionals such as a school psychologist, speech and language pathologist or audiologist. The plan outlines a programme of intervention designed to meet the child's needs.

Although not legally required to do so, the majority of US states have adopted a discrepancy criterion as part of their identification process. The determination that a child has a specific learning disability may be based on a discrepancy between intellectual ability and academic achievement in one or more areas: oral expression, listening comprehension, written expression, basic reading skill, reading comprehension, mathematics calculation or mathematical reasoning. The practice of using an ability-achievement discrepancy in identifying a specific learning disability has been criticised in the research literature (see Section 3.4 below), and alternative assessment approaches have been proposed. However, many US states that had set aside discrepancy criteria in the past have reverted to using such criteria.<sup>22</sup>

Since 1977, the U.S. federal government has required all states to track the numbers of students served in each of several special needs categories. Between 1976-77 and 1997-98, the percentage of students with specific learning disabilities increased from 23% to 51% of all students identified as disabled. For 1997-98, 5.58% of students between the ages of 6 and 17 were identified as learning disabled. Prevalence rates between U.S. states in that year varied widely, ranging from 3.24% in Kentucky to 9.27% in Rhode Island. At least 20% of American students with specific learning disabilities also meet the criteria for attention deficit hyperactivity disorder (ADHD).

In recent years, there has been a trend towards more inclusionary placements for students with learning disabilities in American schools. Whereas in 1992-93, the most common placement was in the resource room, by 1996-97, it was the regular classroom. Co-operative teaching, which involves general education and special education teachers working as a team, is a widely accepted model. The form that such teaching takes varies considerably. At post-primary level, for example, the general education teacher (subject teacher) takes the lead in academic instruction, and the special education teacher concentrates on supporting the student with, for example, study skills and the organisation of assignments and homework. At primary level, class and special education teachers may jointly plan lessons, and take turns delivering instruction, though relatively little evidence is available to support the efficacy of such practices.

Students with a learning disability in the U.S. who meet eligibility criteria for special education services receive an individualised educational programme that guarantees that they will receive the services they need.

## ***Northern Ireland***

Legislation in Northern Ireland allows for the identification of dyslexia as a specific learning difficulty. Under Article 3 of the Education (NI) Order 1996, a child has special education needs if he/she has a learning difficulty that calls for special education provision to be made. Under the Order, Education and Library Boards are responsible for identifying, assessing and making statements of special educational needs (in appropriate cases) for children living within their areas. They do so within the context of the Special Needs Code of Practice, which is provided for in law and circumscribes how all schools must approach the identification of any child's special needs, and how these needs will be

assessed and addressed. The Code of Practice defines specific learning difficulties/dyslexia as follows:

Some children may have significant difficulties in reading, writing, spelling and manipulating numbers, which are not typical of their general level of performance, especially in other areas of the curriculum. They may gain some skills in some subjects quickly, and demonstrate a high level of ability orally, yet may encounter sustained difficulty in gaining literacy or numeracy skills. Such children can become severely frustrated and may also have emotional and/or behavioural difficulties.<sup>23</sup>

The Code sets out a five-stage approach to assessment and identification. Where possible, schools and teachers attempt to address a student's difficulty, through the provision of appropriate services, before Stages 4 and 5 are reached. The stages of the code can be summarised as follows:

Stage 1: The class teacher identifies a child with a learning problem, and adjusts and differentiates the work in order to help the child overcome his/her difficulties. If progress remains unsatisfactory. . .

Stage 2: The class teacher involves the school's Special Education Needs

Co-ordinator (SENCO), one of the school's teachers with designated special responsibilities. The SENCO places the child's name on the school's Special Education Needs Register and, together with the class teacher, devises an educational programme tailored for the child, with targets and review points, and discusses the child's difficulties with parents, both to engage their support and for any useful background insights they can provide. If progress is insufficient . . . .

Stage 3: The school begins to consider outside help to meet the child's needs. This will usually take the form of advice from the educational psychologist or peripatetic/outreach teacher, but other professionals, such as an officer of the Educational Welfare Service, social worker, a general practitioner or a member of the Board's Behaviour Support Team, may also contribute. If progress is still insufficient . . . .

Stage 4: Statutory Assessment. The Board carries out a formal, statutory assessment of the child's special educational needs. This involves collecting educational, medical, psychological and any other relevant advice, and allowing parents the opportunity to express an opinion on their child's education. On the basis of advice received and parental representations, the Board may decide that the child requires a statement of special educational needs, in which case a draft statement is given to the parents for comment and they are asked to name a school for their child to attend. Alternatively, the Board may decide that the child does not require a statement. If a statement is drawn up. . .

Stage 5: Proposals in the statement are implemented. The statement may recommend placement in a named mainstream school, a special school (in which the student's predominant difficulty might be addressed) or a special unit in a mainstream school.

There is variation between the five Education and Library Boards (regional educational authorities) in Northern Ireland concerning the criteria that are applied in identifying specific learning difficulties, and accessing special educational services. One Board requires a full-scale IQ score of 95 or higher, and a 'significant' IQ-achievement discrepancy at the .05 level. Another requires that the student has had literacy support services at Stage 3 in the Code, that the student falls within the bottom 2% on reading accuracy, and that he/she has a reading age of less than 8 years. Still another requires a full-scale IQ score of 90 or higher, and a discrepancy between intelligence and achievement that is 'reliable' at the .02 level. A Regional Strategy Group (an inter-Board special

education group, comprising the Boards' statementing officers and principal educational

psychologists) has recently been set up to address variation in criteria and to establish a common strategy across Boards.

If parents disagree with the Board's final decision, or if no decision is made, they have the right to appeal to the Special Educational Needs Tribunal, which has the powers to make, amend, or cease to maintain statements.

## **England and Wales**

The procedures for identifying specific learning difficulties in England and Wales are similar to those in Northern Ireland. A *Code of Practice on the Identification and Assessment of Special Educational Needs*<sup>24</sup> was issued in 1994, and therefore preceded the Education (NI) Order 1996. The Code includes a definition of specific learning difficulties/dyslexia that is similar to the definition currently in use in Northern Ireland, and also sets out a staged model of identification.

The Code of Practice document specifies the range of evidence which Local Education Authorities (LEAs) should seek when deciding on whether or not a statutory assessment is warranted. LEAs are advised to seek clear, recorded evidence of the child's scholastic achievement along the following lines:

- Are there extreme discrepancies between attainment in different core subjects of the National Curriculum or within one core subject (e.g., English)?
- Are expectations of the child, as indicated by a consensus among those who have taught or closely observed him or her, supported, where appropriate, by standardised tests of cognitive ability or oral comprehension, which are significantly above his or her attainments?
- Is there clear, recorded evidence of clumsiness; significant difficulties of sequencing or visual perception; deficiencies of working memory; or significant delays in language functioning?
- Is there evidence of problems sometimes associated with specific learning difficulties, such as severe emotional and behavioural difficulties as indicated by clear, recorded examples of withdrawn or disruptive behaviour, an inability to concentrate, or signs that the child experiences considerable frustration or distress in relation to his/her learning difficulties?

The LEA is advised to 'consider very seriously' the case for statutory assessment where the balance of evidence presented to and assessed by the LEA suggests that the child's learning difficulties:

- are significant and complex;
- have not responded to relevant and purposeful measures taken by the school and external specialist;
- may call for special educational provision that the school cannot reasonably provide within the resources normally available to mainstream schools in the area

As in Northern Ireland, parents can appeal the LEA's decisions regarding their child's learning needs.

## **Conclusion**

There is considerable variation between and within educational systems on such matters as the

definition of specific learning disabilities/difficulties in general, and dyslexia in particular, the identification and assessment of students who may have specific learning disabilities, and the criteria used in determining the nature and level of provision. Nevertheless, some broad commonalities can be observed:

- Definitions and criteria stipulate that ability must be in the average range or above.
- Criteria for access to special education services often call for a large or 'statistically significant' discrepancy between general ability and achievement in one or more key curriculum areas.
- Students are excluded from receiving special education services designed for those with specific learning disabilities if their difficulties are due to other primary emotional, behavioural or socio-economic problems, sensory impairments or intellectual disabilities.
- Staged processes of assessment that allow schools to address a student's learning difficulties before they become serious are often implemented.
- Parents are involved in key stages in the decision-making process and often have a right to question or appeal decisions.
- Special education provision is made for students with the most serious difficulties, often within a mainstream setting.
- Parents may lodge a formal appeal if they disagree with an educational authority's response to their child's learning needs.

### **3.4 Criticisms of Definitions and Identification Criteria**

For the past decade at least, there have been strong criticisms of definitions of specific learning disability (including dyslexia) employed in educational practice, and of criteria used to determine severity and to regulate access to special education services and other provision. Such criticisms have drawn attention to:

- The use of exclusionary criteria to define specific learning disability; for example, some definitions exclude students on the basis that differences or economic disadvantage contribute to their learning difficulties;
- The failure of some definitions to point to the causes of specific learning disability; some definitions may be more useful in pointing to what a specific learning disability is not rather than what it is;
- The use of full-scale IQ scores to indicate potential in reading. It is argued that other measures such as listening comprehension are better predictors of reading achievement.<sup>25</sup>
- The requirement of a large ability-achievement discrepancy. Statistical problems may arise in computing discrepancies between scores derived from two tests that correlate strongly with each other, such as IQ and reading achievement.

The role of IQ scores in the assessment of specific learning disabilities/dyslexia is particularly



controversial. Several studies have failed to find differences between 'dyslexic' students (i.e., those with a statistically significant IQ-reading achievement discrepancy) and other poor readers (those with low reading achievement but no discrepancy) on measures of reading, spelling, phonological processing, and language and memory skills.<sup>26</sup> In particular, it has been found that the closer a cognitive process is to reading, the less likely it is that differences between readers with learning difficulties arising from dyslexia and other poor readers will emerge.

The role of full-scale IQ scores in the identification of specific learning difficulties/dyslexia is particularly controversial.

It has been argued in a recent report of the British Psychological Society's Division of Educational and Child Psychology<sup>27</sup> that dyslexia cannot be identified on the basis of an obtained difference between intellectual ability on an IQ test and reading (and/or writing) skills. However, the report noted that the outcomes of IQ tests can contribute to programme planning in that a profile of IQ subtest scores may point to a student's strengths and weaknesses in particular cognitive processes underpinning reading and writing. The report adopted the following working definition of dyslexia that separated description from causal explanations:

Dyslexia is 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.

This definition represents dyslexia as a function of the reciprocal effects of learning opportunities and the type and extent of phonological and semantic strengths and weaknesses. Although intra-individual constitutional factors are afforded a central place, environmental factors may also play a key role since the environment is regarded as the source of educational and psychological intervention. Reference to a 'staged process of assessment through teaching' points to the importance of providing appropriate teaching in the first instance, and taking the student's response to such teaching into account during assessment. A potential drawback of the British Psychological Society's definition is that it does not distinguish between students with decoding difficulties arising from dyslexia, and those that arise from low ability.

A number of researchers have also provided evidence that the testing or observation of discrepancies other than those between ability and reading achievement would be more useful in the process of identifying students with dyslexia. For example, it has been shown that students with dyslexia display a discrepancy between their scores on listening comprehension tests and reading comprehension tests in favour of the former.<sup>28,29</sup> This finding might be expected since listening comprehension does not require the decoding skills which may be deficient in students with dyslexia. Attention has also been drawn to the usefulness of discrepancies between oral and written language, discrepancies between curricular areas,<sup>30</sup> and discrepancies between non-word reading skills compared to word reading.<sup>31</sup>

## **Conclusion**

Clearly, there are problems associated with the use of a full-scale IQ as a measure of potential in reading and related areas, and with the application of discrepancy criteria involving assessed intelligence and reading achievement in identifying dyslexia. It is for these reasons that the Task Force proposes an alternative model of identification in Chapter 5 of this report. This alternative model, which, in the initial phases, is based on the Department of Education and Science's *Learning Support Guidelines*, may involve the student moving through a series of phases, each of which

involves a progressively more intensive response to his or her learning needs, in terms of assessment and of the provision of supplementary teaching linked to specified learning targets. The first phase occurs when the child is between 3 and 5 years and involves attention to the child's learning differences in his or her classroom or pre-school setting. The second phase occurs when the student is between 5 and 7 years, and has learning difficulties arising from dyslexia. The student may require additional support from class and learning support teachers. The third phase, which, for most students, would occur between 7 and 12 years of age, includes a formal consideration, by a multi-disciplinary team, of the severity of the student's learning difficulties, the student's response to the interventions that have been put in place by the school, the outcomes of ability and achievement tests, and whether or not special education provision is warranted. A fourth and final phase occurs during post-primary education, where the student's learning needs may shift from basic learning processes to the acquisition of compensatory strategies and study skills. The implications of the model for the identification of dyslexia are addressed in Chapter 5.

Linked to the proposal for a phased model of identification are the criteria that would be applied by the multi-disciplinary team in identifying students with severe learning difficulties arising from dyslexia, and, by implication, in deciding whether or not special education services are warranted. Following a review of current criteria in Chapter 4, it is recommended that the Department of Education and Science and other stakeholders such as the National Educational Psychological

Service, work towards a consolidation and revision of circulars. This would involve establishing new criteria for access to special education services that take into account the information about a student's difficulties that would accrue if the phased identification model is accepted and implemented, in addition to measures of student ability and achievement.

As part of an ongoing process of revising criteria for access to special education provision for students with learning difficulties arising from dyslexia, it is important to consider emerging alternative measures of learning potential in the areas of reading, spelling and writing. Any new measures that emerge, and for which there is strong evidence relating to their validity and value, should be given careful consideration in the context of the revision of criteria.

### **3.5 Information Processing and Dyslexia**

Some recent definitions of dyslexia, including the definition proposed by the British Psychological Society, point to the likelihood that phonological processing problems<sup>32</sup> are implicated. One area of processing, phonological awareness, has gained particular prominence in the research literature. Phonological awareness is the awareness of the phonological elements of speech – the segments that are more or less represented by the letters of the alphabet and letter combinations. This awareness, which develops gradually, has been shown to be causally and reciprocally related to reading: phonological awareness is a prerequisite for reading development, while reading itself contributes to the development of phonological awareness. Training in phonological awareness skills has been shown to increase reading and spelling achievement. However, it is also recognised that difficulties in other areas of phonological processing, such as the retrieval of phonological information from long-term memory ('automatised lexical retrieval' or 'rapid naming'),<sup>33</sup> and the formation of accurate and stable phonological representations in working memory may affect the acquisition of phonological awareness and the development of reading skills.<sup>34</sup> Whereas in phonologically more difficult languages, such as English, the greatest difficulties appear to occur in phonological processing, in phonologically easier languages such as German, lack of skills needed to achieve automatisisation appear to play a greater role.<sup>35</sup>

Dyslexia is often characterised by phonological processing problems including difficulties with

phonological awareness and automatic retrieval of phonological information from memory

A number of other processing differences have been linked to phonological processing and to dyslexia. These include differences in neuro-biological processing<sup>36</sup> and in visual processing.<sup>37</sup> Recent research on neuro-biological processing, for example, has involved isolating particular phonological processes in particular areas of the brain and examining the inter-connectivity of those areas as subjects engage in a range of phonological tasks. Such research, which is possible using functional brain-imaging methods such as fMRI (functional magnetic resonance imaging), provides strong evidence of a biological basis for reading and reading disability.<sup>38</sup> However, research in this area is still evolving, and it may be some time before there are direct implications for identification or instruction.

The precise role of visual processing deficits in dyslexia remains unclear, and it is now acknowledged that linguistic and visual explanations of dyslexia may not be mutually exclusive.<sup>39</sup> One line of research has found differences between discrepancy-defined dyslexics and normal readers in the structure of the magnocellular pathway between the retina and the cortex. However, it has also been argued that such differences may be just an accidental concomitant of reading difficulty.<sup>40, 41</sup>

### **3.6 Dyslexia and Its Main Characteristics**

The Task Force proposes the following description of the term dyslexia:

Dyslexia is manifested in a continuum of specific learning difficulties related to the acquisition of basic skills in reading, spelling and/or writing, such difficulties being unexpected in relation to an individual's other abilities and educational experiences. Dyslexia can be described at the neurological, cognitive and behavioural levels. It is typically characterised by inefficient information processing, including difficulties in phonological processing, working memory, rapid naming and automaticity of basic skills. Difficulties in organisation, sequencing, and motor skills may also be present.

It recognises that the learning difficulties arising from dyslexia:

- occur across the lifespan, and may manifest themselves in different ways at different ages;
- may co-exist with difficulties in the area of number;
- may be associated with early spoken language difficulties;
- may be alleviated by appropriate intervention;
- increase or reduce in severity depending on environmental factors;
- occur in all socio-economic circumstances;
- co-exist with other learning difficulties such as Attention Deficit Disorder, and may or may not represent a primary difficulty.

Finally, it is recognised that, since students' learning difficulties arising from dyslexia range along a continuum from mild to severe, they require a continuum of interventions and other services.

Since the difficulties presented by students with dyslexia range along a continuum from mild to severe, there is a need for a continuum of interventions and other services.

13 In H.G. Liddell and R. Scott. (1925). *A Greek-English Lexicon*. London: Oxford University Press.

14 Critchley, M. (1981). *Dyslexia – an Overview*. In G. Th. Pavlidis, and T.R.Miles (Eds). *Dyslexia Research and Its Applications to Education*. Chichester: Wile.

- 15 *The New Shorter Oxford Dictionary on Historical Principles*. (1999). Oxford: Clarendon Press.
- 16 Harris, T.L. and Hodges, R.E. (Eds). (1995). *The Literacy Dictionary: The Vocabulary of Reading and Writing*. Newark, DE: International Reading Association.
- 17 See, for example, Department of Education. (1988). *Guidelines on Remedial Education*. Dublin: Stationery Office.
- 18 i.e., a school with a special class for students with specific learning disabilities
- 19 Resource teachers are appointed to schools on an ex-quota basis in order to provide additional teaching support for children with special educational needs arising from disabilities (including dyslexia), who are fully integrated into mainstream schools.
- 20 The content of this section is based on a paper, *Learning Disabilities, A US Perspective*, which was delivered to the Task Force by Daniel Hallahan, University of Virginia on October 2000.
- 21 Individuals with Disabilities Education Act, Amendments of 1997, Sec. 602(26), p. 13).
- 22 Mercer, C.D., Jordan, LA, Allsop, D.H., & Mercer, A.R. (1996). Learning disabilities definitions and criteria used by state education departments. *Learning Disability Quarterly*, 19, 217-232.
- 23 Education (Northern Ireland) Order 1996. *Code of Practice on the Identification and Assessment of Special Educational Needs* (p.71). Department of Education, Northern Ireland.
- 24 Department for Education and Employment. (1994). *Code of Practice on the Identification and Assessment of Special Educational Needs*. London: Author.
- 25 Stanovich, K.E. (1991). The theoretical and practical consequences of discrepancy definitions of dyslexia. In M. Snowling and M. Thompson (Eds.), *Dyslexia; Integrating theory and practice*. London: Whurr.
- 26 Siegel, L.S. (1992). An evaluation of the discrepancy definition of dyslexia. *Journal of Learning Disabilities*, 10, 618-629.
- 27 British Psychological Society. (1999). *Dyslexia, Literacy and Psychological Assessment*. Leicester: Author.
- 28 Aaron, P.G. (1989). *Dyslexia and Hyperlexia*. Antwerp: Kulwer Academic Publications; Aaron, P.G. (1994). Differential diagnosis of reading disabilities. In G. Hale (Ed.), *Dyslexia Matters*. London: Whurr.
- 29 Stanovich, K. (1991). Discrepancy definitions of reading disability: Has intelligence led us astray? *Reading Research Quarterly*, 26, 7-29.
- 30 Reid, G. (1996). Difficulties, discrepancies and differences. In G. Reid (Ed.), *Dimensions of Dyslexia: Assessment, Teaching and the Curriculum*. London: Whurr.
- 31 Snowling, M. (2000). *Dyslexia*. Oxford: Blackwell.
- 32 Phonological processing may be defined as the ability to process sounds in spoken language.

- 33 Wolf, M. (1999) Towards a New Conceptualisation of Dyslexia. In *Annals of Dyslexia*, XLIX, 3-28.
- 34 Vellutino, F.R., Scanlon, D.M., & Reid Lyon, G. (2000). Differentiating between difficult-to-remediate and readily remediated poor readers: More evidence against the IQ-achievement discrepancy definition of reading disability. *Journal of Learning Disabilities*, 3, 223-238.
- 35 Grigorenko, E.L. (2000). Developmental Dyslexia: An Update on Genes, Brains and Environments. *Journal of Child Psychology and Psychiatry*, 42, 91-125.
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