

Good Practice in interventions for teaching dyslexic learners and in teacher training in English-speaking countries

Jenny Thomson, Harvard Graduate School of Education July 2010

1. Are there specific linguistic features of English that might make it more difficult for people with dyslexia to read and write?

English is known as an orthographically deep language, which means that the correspondences between sounds and symbols are not in a 1:1 relationship. The translation between oral and written English is a notoriously unpredictable process, for while written English has remained largely unchanged over the centuries, the use of sounds has evolved significantly, creating many cases of mismatch between individual sounds and letters. This results in many ways of spelling a single sound, for example the long "a" sound can be represented by at least eight different letter patterns: a, a-e, ai, ay, eigh, ei, ea, ey. Conversely, a single letter can be pronounced multiple ways, for example the letter 'a' in the sentence, He was carefully planting all the cabbages carefully around the many potatoes. The high incidence of both these types of inconsistency in English impact both spelling and reading respectively.

Interestingly, while the most obvious unit of consistency to think about is the individual letter or phoneme (the smallest meaningful unit of speech, often corresponding to a single letter e.g. 'b' or 'p'), systematic statistical analyses of English have now demonstrated that the most predictable level of word analysis is that of onset-rime ².



Any syllable can be divided into an onset consonant and a rime, the latter containing the vowel and an optional coda, or final consonant(s), for example, c-ot. Thus, while the English language system appears to follow few consistent rules at the level of individual letters and sounds, when considering larger 'chunks', patterns can be found. Given that these patterns are less obvious and often need explicit teaching, achieving a sense of mastery in reading and spelling can be difficult in English, especially for children with dyslexia.

2. Literacy and Society

In all the English-speaking countries from which questionnaires were returned, there was a consensus that literacy is encouraged throughout society. We live in times when knowledge has become the most important form of capital. While economic, social and cultural activities are thus deeply dependent upon knowledge and information, acquisition of knowledge and information is itself dependent upon literacy.

Yet, it is also important to note the results of international reports, such as OECD PISA, the Programme for International Student Assessment³ which consistently highlights large gender gaps in the reading performance of 15 year olds across English speaking countries and beyond, with girls consistently outperforming their male peers. Rather than attributing these differences to between-sex brain development differences, which have not yet yielded consistent relationships to learning, the report places responsibility at the level of schools and societies who, "do not always succeed in fostering comparable levels of motivation, interest or self-confidence in different areas among male and female students" (p.48).

There are also disparities in literacy provision across the lifespan. As soon as children enter school, a key goal is learning to read, to enable lifelong reading to learn.

Accordingly, across countries, significant daily class time is devoted to literacy in the primary grades, teachers accept this as one of their key roles and can receive training



and resources to help in this endeavor. However even two or three years into a child's school career, the role of explicit literacy instruction diminishes and so for students who are not yet independent readers the number of teachers who are trained to provide appropriately-tailored help and the number of age- and skill-level- appropriate teaching materials declines. Provision becomes even less consistent for adults. While the NCSALL in the United States reports that more than 40 percent of working-age adults in the United States lack the literacy skills and education needed to succeed in family, work, and community life (http://www.ncsall.net/index.php?id=17) national infrastructures for training adult literacy teachers, providing professional development and clear career trajectories or even supportive day-to-day working conditions are sorely lacking. With less research evidence also available concerning best practice for adult literacy instruction and limited financial resources devoted to either the research or practice in this area, successful literacy acquisition appears to be the exception as opposed to the norm.

However, even where financial resources are present, allocation constraints can affect successful literacy acquisition for struggling readers. Across education systems, schools and districts who are juggling finite resources will apply the economics of scale in terms of deciding whether to allocate funds to a school-wide program that may yield small gains across a large number of children, versus providing individualized help that may yield larger gains, but for fewer children.

3. Rights and Recognition for Individuals with Dyslexia

Across the English-speaking countries surveyed, rights and recognition for individuals with dyslexia appeared to be very variable. Even *within* countries, there can be differential recognition between the medical and educational fields, which has implications for the rights accorded to people with dyslexia, and how these rights change over the lifespan.



The term "dyslexia" was first coined in 1887 by a German ophthalmologist and since this time has undergone many changes of definition, as well as acceptance. Typically, the term has been adopted more by medical fields and researchers, while decisions regarding funding allocations are determined by education authorities. The latter tend to avoid the term dyslexia, with educators in North America using the term 'specific learning disability' and the UK and Australia using the term, 'specific learning difficulty'. However, despite the difference in labels, common trends and dilemmas of definition can be seen across countries. The first dilemma is the usefulness of giving a child a label at all. Since the 70s, the governments of Australia and New Zealand have argued against both a formal definition of learning disability, as well as against categorical funding for those experiencing specific learning difficulties. Rather, non-categorical funding has been available for the very lowest achievers, which has often acted to the disadvantage of students with specific, not general learning difficulties.

In North America, federal recognition of specific learning disabilities, which includes dyslexia, is well-established, and for school children, legal recognition is intricately connected with entitlement to extra services (Individuals with Disabilities Education Improvement Act, 2004). These services will either be geared at remediation of the core reading difficulties for younger students, with an increasing emphasis on compensation for older students, such as use of a word processing, learning study skill strategy to bypass reading difficulties.

In adults, legal recognition provides less rights to remedial help, but rather is geared towards prevention of discrimination in employment or access to everyday services. Examples include the Disability Discrimination Act (DDA) 1995 in the UK, The Americans with Disabilities Act of 1990.



4. Assessment Procedures for Dyslexia

Across the countries surveyed, no country had a single, agreed upon metric for identifying dyslexia. One reason for this is that we know from the research that dyslexia is not a discrete entity. The phonological difficulties associated with dyslexia are present on a continuum and so the choice of what is a "significant" problem is necessarily arbitrary.

A consensus on the key elements of a formal assessment are the need to assess:

- a) phonological processing skills, including phonological awareness, phonological memory and rapid naming
- b) reading and spelling skills, ideally across single word and connected text levels c) wider cognitive skills and developmental history, to rule out other explanations for
- the literacy difficulties.

A widely-used, yet controversial criteria for identification has been the discrepancy criteria: i.e. a significant discrepancy between a child's wider cognitive skills or potential, as measured by an IQ test, and their reading ability. However, while relatively clear, this criteria means that many children have to fail for long enough to get a diagnosis, a very unsatisfactory situation when we know that early intervention is an optimal strategy.

An emerging alternative criteria in the US and UK is a diagnosis based on the Principles of Response-to-Intervention (RTI). In this scenario dyslexia is defined by significant and unexpected reading difficulties that are not responding to the provision of evidence-based practice, with no stipulation of an IQ-reading discrepancy. This strategy definitely holds promise, questions also remain to be clarified including how do we measure students' responsiveness to an intervention, what interventions are used, how much responsiveness is 'enough'? By getting rid of the discrepancy criteria, distinguishing students with specific versus general learning disabilities become less clear.



5. Effective Teaching Methodologies for Dyslexia

a) Content

Key features of best practice for content teaching:

- I) explicit training in phonological awareness
- II) strong focus on phonological decoding and word-level work
- III) supported and independent reading of progressively more difficult texts
- IV) practice of comprehension strategies while reading texts

Major reviews of early reading instruction for both classroom-wide success as well as specialist teaching for individuals with dyslexia concur that the key features of teaching reading at the earliest stages are that it is multi-sensory and phonologically based^{4,5}. At the core of dyslexia is a phonological deficit and so this must be addressed.

The idea of multi-sensory phonics is not at all new, and is derived from the principles pioneered by Orton, Gillingham and Stillman in the 1920s and 30s. It involves the simultaneous linking of visual, auditory and kinesthetic information to enhance memory and learning. Key resources for finding out more about multi-sensory approaches are shown in the box below.



Phonics program resources

International Dyslexia Association:

http://www.interdys.org/InsInt.htm

Offers a matrix comparing multisensory reading programs

Florida Center for Reading Research (FCRR):

www.fcrr.org

Provides reports of reading programs and their research-base

What Works Clearinghouse:

www.ies.ed.gov/ncee/wwe

Collects and reviews empirical research on educational products

The Center on Instruction:

www.centeroninstruction.org

A US site providing resources including research reports on educational products for reading, math, science, special education, and English language learning

Best Evidence Encyclopedia:

www.bestevidence.org

Created by the Johns Hopkins University School of

Education's Center for Data-Driven Reform in Education, USA

Canadian Language and Literacy Network:

http://www.cllrnet.ca/



b) Process

Key features of best practice for teaching process:

- 1. Phonetic
- 2. Multisensory
- 3. Cumulative & Sequential
- 4. Small, Scaffolded Steps
- 5. Insure Automatization Through Practice and Review
- 6. Provide Mental Modeling
- 7. Provide Opportunities for Success

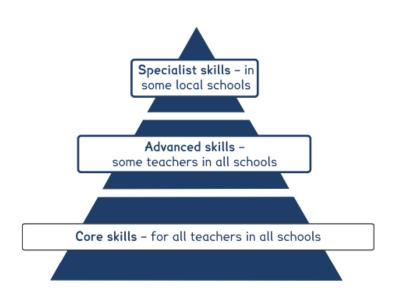
Perhaps the best way to elaborate on the optimal teaching process is to examine the practices of successful specialist schools for individuals with dyslexia. Many such schools exist across English-speaking countries and the Benchmark school is highlighted here, Pennsylvania, U.S.A, largely due to the very explicit ways its practice has been outlined in a published article, including details about the school organization, admissions policy, staffing, environment, curricula and ethos. The article⁶ can be downloaded here: http://www.msularc.org/docu/benchmark.pdf

6. Teacher Knowledge

The importance of teacher knowledge was something that came out clearly from the questionnaires as an area of need. Across English-speaking countries, classroom teachers reported feeling unconfident about how to detect a child at risk of dyslexia and varying accessibility to specialist support.

A useful resource to emerge this year comes from the Rose report⁵, published in the UK. In terms of teacher knowledge the report advocates for a 3 tier system, as summarized below.





Rose Report: www.dcsf.gov.uk/jimroseanddyslexia

Rose recommends that basic teacher education should at a minimum enable classroom teachers to know the key risk signs of dyslexia, and know where to seek advice on what steps are needed to help them. An example of such information is available on the British Dyslexia Association Site: http://www.bdadyslexia.org.uk/about-dyslexia/schools-colleges-and-universities/primary-hints-and-tips.html. This working knowledge should be a normal constituent of initial teacher training of those destined to teach beginner readers, and updated through in-service training. Rose then recommends that within every school there should be one teacher who has the expertise to select literacy interventions, as well as implement, monitor and evaluate them. Finally, there should exist a tier of highly specialist teachers, who play a role in training other teachers, monitoring the implementation of programs and devising tailored programs for specific children.

As well as teacher knowledge, the questionnaires also highlighted the more general importance of teachers being cheerleaders for this group of students with dyslexia, for



whom the experience of learning may have contained more effort and/or disappointment than their typically-reading peers. Factors commonly identified as conducive to learning were:

- Ensuring success. Creating achievable, mutually-agreed upon learning goals to create a positive sense of self-efficacy, which in turns increases the amount of future effort a student is willing to expend in literacyrelated tasks.
- Increasing motivation through literacy materials/activities that connect to a student's interests or functional needs.
- Teacher beliefs. Both teachers and students reported the learning potential engendered when a teacher believes and demonstrates a certainty that progress is possible, and celebrates progress as it occurs.
- Teacher validation of student learning style. By accepting the current student's way of learning a climate of trust is established that helps facilitate positive change.
- Explicit modeling of successful learning strategies. Many practitioners
 reported that modeling for a student the strategies and processes
 involved in achieving their next learning goal allowed students to
 gradually internalize these steps, growing as independent learners in the
 process.
- Positive learning environments
- Timely feedback

7. Dyslexia and Inter-Agency Collaboration

Across countries, cross-agency collaboration around dyslexia appears to be inconsistent, unless legally required in order to meet the needs of specific students, where such laws are in place (e.g. USA and UK).



For example, in the UK and elsewhere, at the level of the individual child, if a significant learning need is identified, professional teams collaborate when developing interventions and programming for dyslexic learners. These teams are typically comprised of parents, teachers, mental health workers, health professionals, educational specialists and speech language therapists. The exact degrees of collaboration, however, vary from county to county, depending on the degree of funding, the sources of funding (which professionals are funded by education vs. health services) and identification criteria for eligible students. Where collaborations appear to work best is where time is actively allocated in scheduling for joint goal-setting and relationship building, which builds mutual trust, ensuring a basic level of shard knowledge around reading difficulties and ongoing progress checking.

At the level of communities, districts and nations, a message that emerged was the powerful impact of non-governmental organizations in facilitating collaborative solutions to address the educational needs of dyslexic learners. In the US, for example, the International Dyslexia Association (which also has ten global partners in Austria, Brazil, Czech Republic, Germany, Great Britain, India, Ireland, Israel, Japan, Kuwait, Latvia, The Philippines and Singapore) effectively focuses resources on providing information, supporting research, professional development as well as advocacy and public policy.



Summary

- Intensive, multi-sensory systematic phonics instruction should be at the heart of dyslexia intervention
- Early identification is critical, and teacher preparation should facilitate this
- Dyslexia can have serious effects on an individual's wider academic, social and emotional development: attainable goals and expectation of success are key

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