

The development of a multilingual test for dyslexia

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Artikel ur

Svenska Dyslexiföreningens och
Svenska Dyslexistiftelsens tidskrift

Dyslexi –

aktuellt om läs- och skrivsvårigheter

Nr1/2003

The development of a multilingual test for dyslexia

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Introduction

The purpose of this paper is to discuss the needs of an assessment tool to identify the specific literacy difficulties of the multilingual individual. In order to do this, it is necessary to ask the following questions:

- 1) What is dyslexia, and how does it vary across languages?
- 2) Does the identification process vary with different languages?
- 3) Can computers help assess the dyslexic multilingual individual?

But before doing that, the most important question of all needs to be asked: Why do we want to assess the multilingual person?

This is the most important question, it is the one that should lead the discussions, but it is the one most often ignored. Rather than address the real issues, people argue about the tools, methods and talk about monolinguals. But both national and international policies and accords, eg the Salamanca Statement (UNESCO, 1994), clearly acknowledge “characteristics, interests, abilities and learning needs” and that “education systems should be designed and educational programmes implemented to take into account the wide diversity of these characteristics and needs.”

Furthermore, the Salamanca guidelines suggest the need to take full account of individual differences (Statement 21), adapting to the needs of the child (Statement 28), providing additional assistance and support to children requiring it (Statement 29), identifying difficulties and assist pupils to overcome them (Statement 31), and appropriate teacher training (Statement 42).

No mention of language background is made. These statements are true for all language context, and this includes the multilingual individual.

To me, the whole purpose of doing an assessment, irrespective of whether the person is monolingual or bilingual, is to inform the individual education plan (IEP). The purpose of that plan is to decide how best to teach, who will do it, where, when, using what resources, and when will its success be measured. The evaluation should lead to the development of that IEP, through the assessment of attainment, and cognitive processing.

With the monolingual individual, the question is “Why is this person failing to learn literacy skills?” When it comes to multilingual individuals, it should be a similar question “Why is this person failing to learn literacy skills in the language of tuition?” That is, whilst the research question may be related to relative difficulties in both the mother/home language, the education question, the question the teacher wants answered, concerns the language of instruction.

Implicit in most testing procedures with monolingual individuals is the long term exposure to the same teaching methods as the peer group. Simple questions, such as whether they missed a lot of schooling

due to illness, will reveal differences that need to be taken into account. In most cases it will be possible to easily identify difficulties that are due to different cognitive processing, as opposed to teaching. However, this assumption about exposure cannot be made with the multilingual individual. If dyslexia is seen as a difficulty in the acquisition of literacy skills, then the difficulty can only be identified with respect to time. That is, if they have not been taught as the others have been taught, then the difficulty cannot be demonstrated.

Using concrete examples, if there are a group of Arab speaking children in a classroom who all started at the same time, and one is failing, it may be argued (assuming no other issues are involved) that this child is demonstrating difficulties in language acquisition.

However, by contrast the author was asked to investigate the literacy difficulties of four Chinese youths. An initial assessment of literacy attainment suggested that they all has the same difficulties, including poor reading and spelling of non-words. All four were put on a “phonics” programme, and all four learned very quickly. It transpired that their previous learning of English was using the whole word approach, where each word was learned as nothing more than a set of strokes, like a Chinese character. That is, their apparent “difficulties” were due to a lack of exposure to the same teaching as the (monolingual) peer group. It should, however, be noted that further assessments did demonstrate that two had real cognitive processing deficits, and their advance slowed after an initial burst, suggesting that they could be classified as dyslexic, given the time principle had been demonstrated.

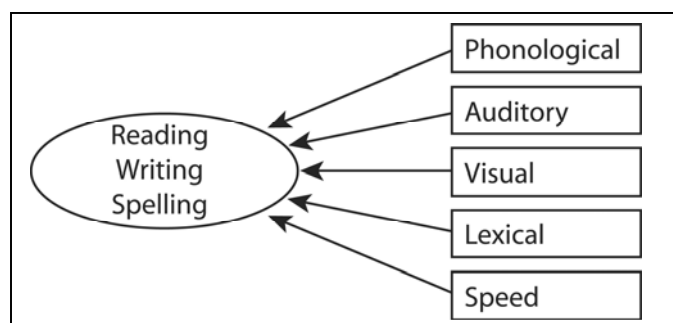
What is dyslexia, and how does it vary across languages?

There are as many definitions of dyslexia as there are practitioners. So rather than review all the different definitions, which can be found elsewhere, let us take one in particular, for which the author of this has to declare a vested interest: it is his. The definition, which has been adopted by a number of organisations states:

Dyslexia is a difficulty with the acquisition of reading, writing and spelling which may be caused by a combination of phonological segmentation and assembly, visual and auditory processing deficits. Word retrieval and speed of processing difficulties may also be present. The manifestation of dyslexia in any individual will depend upon not only individual cognitive differences, but also the language used. (ADO, 2000)

This definition (see Smythe and Everatt, 2000 for a fuller description), acknowledges that the term dyslexia should be reserved for literacy acquisition difficulties. Furthermore, it suggests that there is not just one possible underlying cause (eg phonological, as mentioned in definitions such as the IDA definition (1994)), but a number of possible causes, and that in any one individual it is necessary to assess as many of the literacy related cognitive processes as possible (see Figure 1).

Figure 1: Literacy difficulties may have many underlying causes.



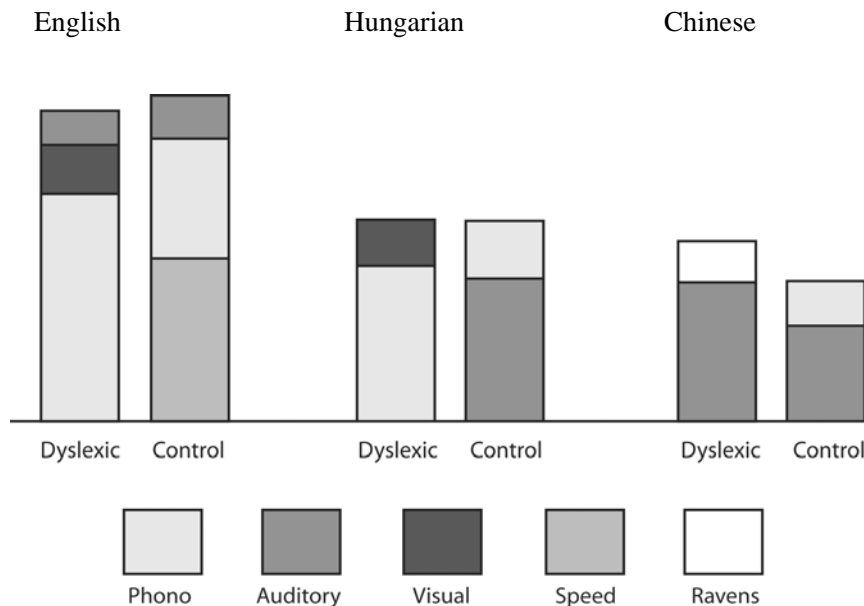
It also distinguishes between the phonological manipulation, as opposed to non-manipulated sound processing (short term memory, sound comparison etc). Finally, it suggests that different languages will have different cognitive requirements, and thus any one specific cognitive deficit in an individual will have different consequences, depending upon the language in question.

This definition is based on international research (Smythe and Everatt, 2000) which shows that it is important to use a diverse battery of tests to identify specific difficulties. Furthermore, not only do the profiles of dyslexics vary between languages, but so too will the cognitive skills of the able readers.

Does the identification process vary with different languages?

The assessment procedure will be affected not only by the relationship between cognitive processing and literacy skills, but also the legislative demands. Most countries where there is any specification in legislation, with the exception of the USA, only demand that all skills and abilities are measured without specifying criteria or methods. This leads to constant debate about interpretation. In the USA, criteria will vary between states, and even the mainstay of their assessment process, the discrepancy criteria, is now being overhauled to remove the demands of a discrepancy relating to intelligence, since validity for its inclusion has never been demonstrated (see, for example, the National Center for Learning Disabilities committee on Learning Disability guidelines which has now stated that “consensus was achieved regarding the lack of scientific evidence to support an IQ-achievement discrepancy formula as the basis for identification, classification and providing special education and related services to students with specific learning disabilities”).

Figure 2: Cross linguistic comparison of cognitive processes that predict spelling for dyslexics and controls.



What does multilingual mean?

The term multilingual may be different things to different people, but a “typical” situation may be as follows:

Spoken language

Home	Gujerati
Playground	Gujerati/English
Classroom	English
Television	English
Saturdays	Arabic
Community	Gujerati

Written language

Classroom	English
Saturdays	Arabic

Thus not only could the difficulties of multiple languages involve more than just two languages, but also compounded by multiple scripts. But while a “diagnosis of dyslexia” may sound useful, it does not provide additional information to help determine an appropriate individual education for the dyslexic multilingual individual.

Put another way, if they have failed to learn, say, rhyming skills, which many would say are one of the major building blocks of literacy in English, are they not entitled to support irrespective of whether or not they are termed dyslexic. Why should they have to have other deficits (eg short term memory) in order to qualify for help.

How do we assess the dyslexic multilingual individual?

There are two components to the process. The obvious one is the need for an assessment tool which will identify the specific difficulties. But the other, often ignored part of the process is the need for a mechanism to engage that process. In other words, how do you decide who to put forward to what is often a lengthy and expensive process? Fortunately, there is a tool to hand which, if used with due caution, will aid the process. It is the checklist.

Checklists – the helping hands of assessment

Although often regarded as an inadequate tool, this simple device should not be ignored for the identification of those who may require further analysis. It has one major advantage over more specific tools – there are many components which are behavioural identifiers, and therefore by definition are not dependent upon language. This does not mean that dyslexia should be considered as something other than a language difficulty, but that there are a number of signs which often accompany literacy difficulties. Although this may vary from list to list, such indicators may include:

- Problems with memory (remembering list, homework, keys, maths tables)
- Problems with motor skills (tying shoe laces, ties, clapping)
- Problems with organisation (getting ready for school, work)
- Slow compared to the peer group (ie same language background)
- Demonstrates abilities in other (non-literacy dependent) areas.

Thus a simply constructed checklist may help in the identification of the individual who should be put forward for further assessment. Obviously this recommendation will be dependent upon other factors, such as the teaching and learning environment, and the time spent submerged in the language of acquisition. At the very least, the checklist provides a simple reminder that a person is having some

specific difficulties, and that their progress should be reviewed after an agreed time, to see if progress suggests an alternative approach should be tried.

The assessment framework

As suggested in the definition, it is important when assessing the individual to assess them over and above phonological awareness assessment. Not only is it important to consider individual difference, but also remember that what may be true in one language may not be true in another language environment. As an example, in Hungarian, a highly transparent language (eg there is a perfect sound letter correspondence, the word for “at risk of dyslexia” is “diszlexiaveszélyeztettség”. As may be perceived, concerns will not only be about segmentation and assembly skills, but also phoneme discrimination, and auditory short term memory. Fortunately, morphemic awareness can offer some assistance to development of literacy skills. Another example is Japanese, where 50% of kanji (Chinese character) reading errors are due to visual errors even for non-dyslexics. These examples reinforce the notion that it would be inappropriate to use a test battery that may be widely used elsewhere, as the cognitive processing requirement for the acquisition of literacy skills in Swedish are very different from English.

The “definition” given above highlights the need for the assessment battery to include diverse measures. These areas, using their fuller names, may be referred to as:

- Phonological segmentation and assembly skills

- Auditory processing

- Visual processing

- Lexical access

- Speed of processing.

Unfortunately for the assessor, not only does each of the categories sub-divide (eg auditory processing includes sound discrimination and auditory short term memory) but also no one test will measure perfectly that cognitive ability. However, the following list of tests does provide a basic list of areas that should be included in any test battery.

Levels of current attainment should include:

- Reading skills*

 - Single word decoding

 - Comprehension

 - Speed

- Spelling*

 - Single word

 - Non-word

- Maths*

- Language considerations*

Cognitive profile

- Phonological segmentation and assembly skills*

 - Rhyme

 - Alliteration

 - Phonemic/syllabic awareness

- Auditory processing*

 - Phonological/auditory memory

 - Phoneme discrimination

- Visual processing*

 - Visual short term memory

Visual perception
Speed of processing
Rapid naming
Lexical access

Testing in the first language

The problem of identifying multilingual individuals with specific learning difficulties when trying to work in their first language is not only the problem of finding the right test, but also those to perform the tests. Fortunately, most of the testing can be done in the language of teaching, since the question is about difficulties in the language of tuition. This decreases the need for tests and testers that work in the individual's first language. However, for confirmation of the difficulties, and when their knowledge of the language of teaching is low, it may help to perform some tests in their first language. Of course some tasks are language independent (eg visual memory tasks) but to perform most in the first language, particularly important when the person has limited language knowledge in the language of tuition, needs the information (tests and instructions) presented correctly in that language. However, given the tasks are largely the same each time, if the test delivery can be automated, then computers could help overcome the shortage of trained professionals that could deliver the test. This is not to suggest that the computer could be as good as a human assessor, but that it may help in many cases, speed up the process, and require specialist for less time.

Using computers

This is where technology comes into its own. Computers could be used in many ways as part of the assessment process, and part of the current research is to identify ways they can be used, and implement the procedures. A number of tasks have been identified where a sound file can be played, and a response can be made through use of the keyboard. For example, tests of phonological awareness (rime and alliteration) and sound discrimination only require an easy to computerise either/or response. Auditory short term memory (eg digit span) can be presented by the computer, with responses with being on the keyboard (if keyboard skills are good), handwritten or dictated for later entry. Visual tasks have no language barriers (except instructional). Tasks such as rapid naming can be timed using computer presentation. (Uncorrected errors may not be easy to detect if the test moderator cannot speak the person's language, but this type of error is usually not a major problem in assessment.) Thus, with appropriate linguistic input, many tasks may be developed and delivered by the computer, without the need for local specialist knowledge. Further support can also be made available by using such techniques as video facilitated assessment, currently under development in Wales. However, this still assumes some form of 'norms' for the tests are available.

Conclusions and implications

Every individual has the right to appropriate education (UNESCO, 1994) and this is irrespective of the first language and the language of teaching. If the individual has a specific difficulty, are they not entitled to help, without concern for labels such as dyslexia. After all, is not a phonological difficulty still a problem that needs extra tuition no matter what the cause. We currently do not have the norms to assess with certainty those individual from diverse language backgrounds. But we do have the theory, and can use computers as the tools, to develop the resources to identify the needs of these individuals. This would overcome the problem of a lack of specialists, and deliver the testing where it is needed, in the classroom. Of course, this does not mean we will have all the resources to teach them appropriately, but until we can assess those difficulties, how can we expect to know what to do about it. Only then will we be able to provide the learning environment to which the multilingual dyslexic individual is entitled.

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