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THE PROCESS OF READING AND THE TEACHING OF READING SKILLS TO PUPILS WITH DYSLLEXIA

Blagovesta Troeva

New Bulgarian University

Abstract. The paper explores the strategies applied in teaching reading skills to pupils with the dyslexia. It starts with an analysis of some of the most influential theories of reading development in languages with an alphabetic orthography and the implications they have for teaching reading skills. Next, it identifies the areas of reading acquisition that are most frequently affected in dyslexia, acknowledging the complex and inhomogeneous nature of this specific learning difficulty. Drawing on research on reading interventions, the paper discusses the focus given to structured phonics presented in a rich language environment. It suggests that comprehension developing activities alongside the development of phonological skills should not be underestimated. Additional principles guiding instruction are identified and discussed – multisensory teaching, the role of context, mixed-ability grouping, reinforcement, overlearning and metacognition. Taking into account the variations of each learner's profile, the author concludes that accommodating the reading instruction to meet each student's individual needs is what teachers should aim at in order to secure the most inclusive learning environment.

Keywords: dyslexia, reading development, strategies, teaching reading skills

Introduction

I hear and I forget. I see and I remember.

I do and I understand

Confucius, 551BC – 479 BC, cited in Vaillancourt, 2009

Unlike speaking, which comes relatively easy through imitation, reading is an invention from about only 5,000 years ago, has not been enshrined in our genome, and is a skill that needs to be taught (Stein, 2008). It is a major component of literacy, a socio-cultural phenomenon whose features change in

temporal and geographical terms. Its merit is contingent on societal priorities (Elliot et al., 2008), undoubtedly rising in the western world where the notion of illiteracy often carries ‘negative associations with limited ability of social value’ (Cook-Gumpertz, 2006 cited in Elliot et al., 2008).

This line of development parallels the growing commitment to inclusion, interpreted by some as, ‘the process of increasing the participation of learners within and reducing the exclusion from, the cultures, curricula and communities of neighbourhood centres of learning’ (Booth, 2000). An individualized approach ensuring high quality and equitable teaching for all is required by national and international documents such as the *UN Convention on the Rights of Persons with Disabilities* which stipulates that, ‘effective individualized support measures are provided in environments that maximize academic and social development, consistent with the goal of full inclusion’¹⁷⁾.

Dyslexia is considered to be a specific learning difficulty³⁾. It is generally believed to be caused by deficits in the phonological representation or processing (Snowling & Hulme, 2011). Children with dyslexia find it difficult to map letters onto sounds, which is experienced as difficulties in decoding written words (Vellutino et al., 2004). It might be expected that this is the area where intensive teacher support would be required. However, reading in a language with a deep orthography like English is a complex process (Snowling, Hulme, 2011). Decoding print and understanding the alphabetic principle are an essential step towards proper reading but as Snowling and Hulme point out, children also need to ‘read fluently and with understanding’ (2011). For this reason, a narrow focus on phonological skills is likely to be insufficient. A number of government-funded reports both in England (Rose, 2006, 2009) and the USA (12), as well as Section 1.25 of the SENDCP (DfE, DfH, 2014), have recommended a number of approaches to address the difficulties in reading acquisition.

The paper will focus, first, on some of the most influential theories of reading development in languages with an alphabetic orthography and the implications they have for teaching reading skills. Next, it will attempt to identify the areas of reading acquisition that are most frequently affected in dyslexia. Finally, it will look at research on reading interventions that has informed teaching practice.

Developing Reading Skills

Before analyzing what strategies are applied in teaching reading skills to pupils with dyslexia, we have to identify the main skills that need to be developed in reading acquisition. Ehri (2005) offers a four-phase model of reading development, in which a major stepping stone towards the acquisition of reading is decoding written words along with mastering of the alphabetic principle. Decoding refers to the ‘ability to use speech codes to represent information in the form of words and word parts’ (Vellutino et al., 2004), whereas

the alphabetic principle corresponds to ‘how letters in printed words map onto the phonemes in spoken words they represent’ (Snowling, Hulme, 2011). From relying only on visual clues for relating a written word to its sound or semantic representation at the pre-alphabetic stage (Beech, 2005), beginner readers start learning the names and sounds of the letters in the alphabetic system, initially managing to link only some of the letters to sounds, usually the first and the last ones at the partial alphabetic stage (Ehri, 2005). Next, they start forming full connections between graphemes and phonemes, and process the constituent letters of words at the full alphabetic phase (Beech, 2005). They can decode unfamiliar words and retain spellings of words they have already seen several times in their memory (Ehri, 2005). At the fourth, consolidated alphabetic phase, an increasing number of sight words are retained in their memory, which in turn makes the acquisition of new words easier (Beech, 2005). This development of ‘sight words’ vocabulary is considered essential by Ehri (Ehri, 2005).

A similar progression of the reading skills acquisition is outlined in Frith’s (1985) model of reading development, involving a logographic, alphabetic and orthographic stages. Sight word reading is less highlighted but still present in it as at the last, orthographic, stage learners make an instant, systematic and non-visual analysis of words. Unquestionably, however, *decoding appears to be a major component of reading development* in both developmental models of reading. Stuart et al. (2008) remark that its significance pertains to all recent theories of reading development in languages with an alphabetic orthography.

How do Ehri’s and Frith’s models inform the teaching of reading skills? On the one hand, they pinpoint decoding and mastering the alphabetic principle as the two major gateways to reading acquisition. On the other hand, they draw a picture of the specific steps in the reading acquisition process. According to Frith (1985), the three stages are sequential, and each is built on the previous one. That would mean that decoding skills and knowledge of the phoneme-grapheme correspondence precede the acquiring of sight words. Conversely, Ehri (2005)’s phases presuppose a greater flexibility, children being able to exhibit behavioural characteristics of different phases. Still, Ehri (2014) acknowledges that the accumulation of skills from one phase secures the reader’s movement to the next one. Snowling (2000), however, argues that research does not prove a universal sequence of reading development, as this process is strongly influenced by the language orthography (Wimmer, 1996, cited in Snowling, 2000). Nevertheless, as far as the acquisition of reading in English is concerned, the two theories provide a rough guideline of what processes teachers should enhance and expect for their pupils to master while learning to read.

The alphabetic writing system imposes a great load on the visual system for children (at Ehri’s pre-alphabetic phase) and decoding is the primary tool to reduce that load (Vellutino et al., 2004). The acquisition of decoding skills

allows for new unfamiliar words to be decoded and is the basis for the further automatization of reading (Snowling, 2006). However, despite having utmost significance, decoding skills, sight word reading and alphabetic knowledge are not sufficient for the development of skilled reading. One more important aspect is accounted for in the Simple View of Reading (SVR) (Gough and Tunmer, 1986, Hoover and Gough, 1990), whose framework was adopted by the National Primary Strategy in England in 2007 and serves as a ‘useful framework’ both for the assessment and teaching of ‘all’ children (Kelly, Philips, 2013).

The SVR suggests a combined influence of decoding and linguistic comprehension on skilled reading, ‘both necessary for reading success, neither sufficient by itself’ (Hoover & Gough, 1990). Linguistic/language comprehension is founded on lexical knowledge, semantics and syntactic processes, as well as pragmatics (Snowling, 2006). Though the original term ‘decoding’ may mislead into believing that it entails only grapheme to phoneme conversion (Ouellette, Beers, 2010), it does not rule out orthographic or visual word recognition. By ‘decoding’ Gough and Tunmer mean ‘the ability to recognize words presented singly out of context’ (Gough, Tunmer, 1980, cited in Rose, 2006). To represent this dimension more correctly, later works on the SVR use the term ‘word recognition processes’ (Fig. 1).

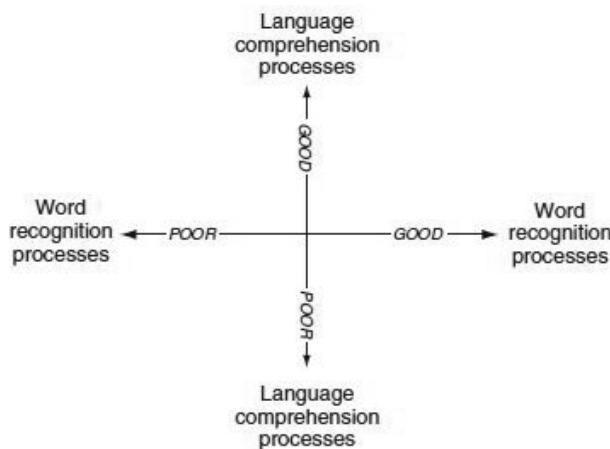


Fig. 1. The Simple View of Reading

Having reviewed these three major theories of reading development, we may conclude that the major skills involved in reading are word recognition (including both serial decoding and sight word reading), and language comprehension (associated with meaning on all levels of language). It has to be noted, however,

that while comprehension is learned in the course of learning to speak, word recognition is not such a natural process as ‘the brain is specialized for processing spoken language, but not written language’ (Liberman, 1992, cited in Reid, 2003). That appears to mean that while teachers of reading are expected to facilitate the acquisition of skills in both dimensions, a focused support would be more necessary in the development of decoding and sight word reading.

The Skills that are Compromised in Dyslexia

Difficulties in acquiring reading may have multiple determinants (Frith, 1999). In her causal model of dyslexia, Frith (Frith, 1995) poses that in order to have dyslexia there has to be a neuro-developmental disorder, a ‘biological origin leading to a cognitive deficit and resulting in a particular pattern of behavioural signs’, with environmental factors affecting all these levels.

The International Dyslexia Association (IDA)’s (2015) definition of dyslexia states:

Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.

Thus, IDA’s definition identifies the SVR’s dimension of word recognition as the primary level of difficulty and recognizes the possibility of accompanying comprehension deficits. Analysing the deficits at the cognitive level, according to Snowling and Hulme (Snowling, Hulme, 2011), ‘offers a necessary and sufficient level of explanation for the development of principled interventions’. Other, more detailed definitions of dyslexia pinpoint not only deficits in phonological awareness, but also such affecting working memory, slow processing speed (Fawcett, 2002), the automatic development of skills, co-occurring visual and auditory deficits (BDA, 2014a) or co-morbidity (combined occurrence of dyslexia with neurodevelopmental disorders such as ADHD or autism).

The theory that has gained popularity with a substantial number of researchers is the *phonological deficit hypothesis* (Snowling, Hulme, 2011). At the cognitive level, the speech sound sequence is phonologically represented by the phonological system (Martin, 2000, cited in Farrell, 2006). If individuals experience difficulties drawing on this representation, they might find it difficult to develop awareness of the difference between sounds as well. Sprenger-Charolles et al. (2006) explicate that the specific difficulty in attending to

phonemes comes from the fact that as elements of the spoken language they are generally not available as discrete units. If phonological awareness (PA), defined by Vellutino et al. (2004) as ‘conceptual understanding and explicit awareness that spoken words consist of individual speech sounds (phonemes) and combination of speech sounds (syllables, onset-rime units)’, is impaired, this might cause difficulties with decoding written words, which as we saw above, is a major component of reading.

It needs to be acknowledged that the PA deficit theory has been not been unanimously accepted (Castles, 2006; Elliot et al., 2008). Castles (2006) affirms that PA is an important factor but other factors contribute as well, and finds some reason in Castles and Coltheart’s (Castles, Coltheart’s, 2004 cited in Castles, 2006) hesitation as to whether deficits in this area cause difficulties with non-lexical reading or the causality is the other way round. PA has been found to be impaired with children who have difficulties reading non-words, but not with children who have difficulties reading exceptional words (Snowling, 2006). On the other hand, there have been cases where even difficulties reading non-words have not been accompanied by difficulties with PA (Hart, 2004, cited in Castles, 2006). Moreover, some argue that PA plays lesser role in the acquisition of reading skills in languages with a more transparent orthography. In such languages, according to Ziegler and Goswami (2005) other phonological markers such as poor verbal memory or rapid naming will be more indicative.

Contrary to these findings, Stanovich and Siegel’s study (Stanovich, Siegel, 1994, cited in Snowling, 2006) concludes that poor phonology is related to reading difficulties *irrespective* of the language characteristics. Snowling (ibid) sides with these authors’ interpretation of dyslexia as *a core phonological deficit*. In their influential review, Vellutino et al. (Vellutino et al., 2004) reaffirm that the available evidence of weak phonological coding being a major underlying cause for dyslexia is substantial.

Dyslexia may be accompanied by *working and short-term verbal memory deficits* (Hatcher & Snowling, 2002). According to the Model of Working Memory (Baddley, Hitch, 1974, cited in Massey, 2008) this type of memory consists of three strands: the phonological loop (responsible for verbal information), the visuo-spatial sketch pad (responsible for visual imagery) and the central executive (controlling the awareness of the information being processed). Working memory is essential in holding the information in the short-term memory while completing a particular task, as well as storing and retrieving information from the long-term memory (Kelly, Philips, 2013). If individuals with dyslexia do not receive complete information in one of the strands (e.g. the phonological loop), the transference of the information from the short term to the long-term memory might be inhibited or inaccurate (Massey, 2008). According to Hatcher and Snowling (Hatcher, Snowling 2002), difficulties with short-term

memory are ‘the most consistently reported’ difficulties found in individuals with dyslexia. Long-term memory limitations have also been observed, which can lead to difficulties in phonological information and word retrieval (ibid).

A large number of individuals with dyslexia have accompanying *auditory or visual processing difficulties* (Massey, 2008). Auditory processing problems may result in difficulties perceiving rapid sounds (Massey, 2008). Deficits in *rapid serial naming*, although more moderately contributing to dyslexia than PA, have been found in more severely impaired dyslexics (Pennington et al., 2001). Visual factors related to convergence, accommodation and tracking have also been identified in certain cases (Farrell, 2006). If accompanied by an impairment of the magnocellular system, printed words may seem moving around or blurred (e.g. Stein, 2001). Still, another problem might be a visual defect causing difficulties with light source, glare, black and white contrast known by the terms Meares-Irlen Syndrome or Scotopic sensitivity (Fawcett, Reid, 2009). Frequently associated with dyslexia, Singleton (2009) contends that such a deficit is a case of visual stress and is not neurologically linked to dyslexia.

The above reviewed features are only part of the possible manifestations of dyslexia, which is influenced by a ‘complex combination of interacting factors’ (Hatcher, 2006). Certain environmental factors may influence the biological, cognitive, and behavioural levels (Firth, 1999), and can aggravate or ameliorate the symptoms of dyslexia (Frith, 1999; Rose, 2009). These could be the pupil’s socio-economic status, the transparency of the language, the value given to literacy, the teaching style (Frith, 1999), previous interventions, co-occurring difficulties (Rose, 2009), the education policy, the staff training, the school and classroom learning environment (Reid, 2003), parental support, peer influence, the mother tongue (Kelly, Philips, 2013). Psychological factors like motivation, interest, self-esteem, preferred learning styles also play a significant role (ibid). All these influences will remain outside the scope of this paper which will further narrow down its focus on the recommended strategies for teaching reading to pupils with dyslexia based on intervention research.

Participants in the majority of UK studies on interventions for reading difficulties have not been specifically identified as having dyslexia, according to Singleton (2009). However, the author points out that most of the participants were on the special educational needs (SEN) register, so it is ‘highly likely’ (2009) that a considerable part of them had dyslexia. Notably, it is believed that most of the strategies that work for poor readers are applicable to children with dyslexia as well and vice versa (Farrell, 2006).

The Teaching of Reading to Learners with Dyslexia

Reading interventions form a ‘virtuous circle’ (Snowling et al., 2011), creating both the basis for teaching practice and serving as a tool to refine

reading acquisition theories. Response to intervention (RTI) has been a way to identify children with reading difficulties (Singleton, 2009). Although interventions are often limited in time and might be applied in out-of-classroom settings, it seems rational to expect that the major principles found to be facilitating poor readers would be implemented in teachers' daily classroom practices as well. It is believed that most of the strategies that work for poor readers are applicable to children with dyslexia as well (Farrell, 2006). Skills acquired during intervention programmes are generally found to be maintained subsequently¹⁴). Notably, Snowling et al. (Snowling et al., 2011) acknowledge that the effectiveness of intervention depends on many circumstances such as the characteristics of the learner, previous interventions, programme characteristics, instructional features.

Recent research shows that there is a need of balanced approach to intervention. The Rose Review (2009) chose the SVR as its theoretical framework, which suggests that speech and language skills should work in interaction. A balanced approach is supported also by Snowling (Snowling, 2006) who claims that interventions should be directed at both phonemic awareness and use of phonological, semantic and syntactic cues inside texts. This coincides with the recommendations of the US National Reading Panel (2000) for use of: phonological awareness, phonics, text reading/fluency, vocabulary and comprehension strategies (Griffiths, Stuart, 2013). Further support of oral skills is considered important by Duff et al. (Duff et al., 2008), and 'a foundation for literacy development' (Snowling, Hulme, 2012).

How does this translate into teaching strategies recommended for pupils with dyslexia? The principles that Rose (Rose, 2009) highlights are: phonics instruction, 'highly structured, systematic, "little and often", using graphic representation, allowing time for reinforcement and encouraging generalisation'. The majority of guidebooks on dyslexia (Reid, 2011) or intervention studies (Oakland et al., 1998) advocate the use of a multisensory approach. The Singleton (Singleton, 2009) report on interventions for dyslexia subdivides 'systematic' into structured, cumulative, sequential, consisting of small steps, and adds more elements such as overlearning, reinforcement, metacognition. The main outlined principles will be elaborated on in the following sections.

Phonics

Snowling and Hulme (Snowling, Hulme, 2012) argue that as the crucial skills needed in order to learn to decode print are *phonemic awareness and letter-sound knowledge*, the two major aspects of the alphabetic principle (Hatcher et al., 2006), these are the areas where intervention should focus on. Singleton (Singleton, 2009) summarizes the gains of the phonologically-based interventions in the UK directed at poor readers as having the following

effect sizes: 0.56 for reading accuracy and 0.91 for reading comprehension (sizes of 0.8 being considered 'high'). In contrast, whole-language approaches recommended by some researchers (Noell et al., 2006) and based on the idea that immersion in reading opportunities and deriving meaning from context will develop reading skills naturally, have proved to be less effective¹⁴). Singleton (ibid) argues that beginner readers cannot be assumed to learn through the same cognitive processes as experienced ones. Still, Reid (Reid, 2003) supports Adams (Adams, 1990) in his recommendation for the use of both phonological and whole-language approaches to reading.

As dyslexia is essentially characterized by a phonological deficit (Snowling, Hulme, 2011), teaching decoding skills is particularly significant for individuals with dyslexia. The role of *systematic phonics* was substantially emphasized in the Rose (2006, 2009). *Phonics* develops phonemic awareness and builds up knowledge of grapheme-phoneme correspondences and spelling patterns. *Systematic* entails 'an explicit, organised and sequenced fashion, as opposed to incidentally or on a "when-needed" basis' (Torgesen et al., 2006). It may refer both to synthetic phonics, which is characterized by sounding-out and blending, and to analytical phonics, which involves inferring of phoneme-grapheme correspondences from sets of words sharing a sound and a letter (ibid). A debate regarding the effectiveness of the two forms is represented by opinions that synthetic phonics is 'the best route' for most beginner readers (Rose, 2006) versus one insisting that there is not strong evidence of the advantages of one over the other (Torgesen et al., 2006).

In addition to the unresolved dispute between synthetic and analytical phonics, the place of sight word reading has also been part of the dyslexia discourse. Reid (2003) reminds that phonic programmes directed at children with specific learning difficulties (SpLD) like dyslexia, do not dismiss the necessity to teach sight vocabulary that cannot be acquired via sound blending, e.g. with words like 'one'. On the other hand, for Wyse et al. (2013) an early introduction of sight vocabulary needs to be employed as 'sensitivity to larger phonological units including words, rhymes and syllables occurs at an early age and before awareness of individual phonemes'. The more sight words are retained in memory, the easier new words are acquired (Beech, 2005). Moreover, rapid and automatic recognition of written words bolsters up the understanding of sentences and texts (Sprenger-Charolles, 2006).

The dispute, called the 'reading wars' between whole-world and phonics approaches, was triggered by the irregularities of the English orthography¹¹). Goswami (Goswami, 2007) pointed out that English requires phonics to be taught at more than the phonemic level. As a language, it is 'both deep and complex' (Ehri, 2005), as on the one hand, one letter can correspond to more than one sound, and on the other hand, the language has a lot of consonant

clusters (e.g. CVCC words) unlike languages like Italian which follow a CVCV pattern. Goswami (Goswami, 2007) postulates that for English the onset-rime awareness is very important part of phonological awareness. Goswami and Mead (Goswami, Mead, 1992) show that children's making analogies between spelling patterns (e.g. beak – peak) facilitates their reading of unfamiliar words. Although Strauss and Altwerger (2007) perhaps go too far claiming that 'the English phonics system operates at a level of complexity that essentially defies teachability', they too recommend a focus on larger word units such as rimes. Snowling (Snowling, 2000) challenges this view by presenting a number of studies that show that knowledge about riming patterns appear more slowly than that of grapheme-phoneme connections, so it is unlikely for such knowledge to assist children in their first reading attempts. Still, *analogy* is one of the four strategies for reading unfamiliar words put forward by Ehri (Ehri, 2002), besides decoding, sight reading, and prediction.

Ehri (Ehri, 2005) too warns that 'decoding skills may not be sufficient to move readers to the full phase if it is not practiced as a tool for building a sight vocabulary but is simply applied as a strategy for sounding out the letters in words'. Furthermore, reports on fluency after the application of phonologically based interventions do not reveal a considerable improvement (Reid, Green, 2007). A possible reason might be Katzir et al.'s (2006) finding that fluency has a multidimensional nature and is determined not only by phonological awareness, but also by rapid letter naming and orthographic patterns recognition. Although Torgesen and Hudson (2006) recognize that fluency is determined by multiple factors, they identify the most influential one to be the speed of word recognition.

Reading Comprehension

Slower and effortful decoding has been found to exhaust the working memory resources needed for comprehension (Kirby & Savage, 2008, Reid & Green, 2007). Together with word recognition skills, language comprehension skills have a critical role in the acquisition of reading, or as Wyse et al. state 'reading comprehension is the essence of reading' (Wyse et al., 2013). Snowling (Snowling, 2006) asserts that while the mapping of sounds and letters, which defines as a 'speech skill', is a prerequisite for reading in an alphabetic system, wider, 'language abilities' are necessary in order to 'understand the meanings of words and sentences, to integrate these into texts'. The latter entail 'lexical knowledge, semantics and syntactic processes', that is, they are closely connected to vocabulary and sentential context and therefore will be presented together with these two themes. Participants in Troeva's (2015b) study report that vocabulary and semantic skills help pupils with dyslexia to "take-off" in their reading development. Wray (Wray, 1981, cited in Wyse et al, 2013) rightly

remark that it is unfortunate that comprehension is often considered a higher-order skill as most children are being read to stories and taught to narrate stories in an early pre-school age, therefore their comprehension skills should not be underestimated.

As slower word recognition and information processing may hamper comprehension (Reid, Green, 2007), learners with dyslexia are often entitled to time differentiation for task completion. Frith (Frith, 1985) points out that even if children with dyslexia manage to develop alphabetic skills these will require more effort and may not be retained under stress. Time is a 'crucial element' especially when accommodating the needs of children with auditory or visual difficulties (Massey, 2008).

The Role of Context

Everatt et al. (2007) comment on the evidence that the syntactic context of a word can aid its recognition in both accuracy and speed, and that context priming effects have been found greater among individuals with dyslexia than peer controls. West and Stanovich (Stanovich, 1978, cited in Sprenger-Charolles, 2006) explain this with the fact that skilled readers have already acquired automaticity of word identification. That means that in the presence of poor decoding skills utilization of semantic and syntactic cues can act as a compensatory strategy (ibid). Another reason for the importance of context is that it provides children with the opportunity to use a very powerful strategy for reading unfamiliar words – prediction (Ehri, 2014). Still, Reid (Reid, 2003) reminds that in order to make a full use of the benefits of contextual reading, readers must have already acquired a stock of sight vocabulary. On the other hand, exposure to texts facilitates the acquisition of sight vocabulary, which in turn encourages more reading, which additionally increases the lexical store – a phenomenon described as the so-called Matthew effect (Stanovich, 1986).

Engagement

Engagement has been considered key to facilitating literacy acquisition, and especially the aspect of reading comprehension (Wigfield et al., 2008), 'central to the progress in reading'⁷⁾. A predominantly phonics-based approach seen by Dombey⁷⁾ as 'an unbalanced diet' having 'thin gruel', should be diversified not only in order to fill in for areas that have not been sufficiently addressed, but also involving teachers' creativity to make lessons more engaging and keep up the pupils' level of interest. An original study conducted by Anderson (Anderson, 2009) revealed the necessity of matching readers and texts effectively and argued that 'unless dyslexic pupils are able to construct their identities as *interested readers*, silent reading sessions are a complete waste of time for them and so are unlikely to contribute to reading development'.

Grouping

Grouping by ability has often been adopted with the assumption that it will boost motivation, independence and academic achievement. Dyslexic learners' low levels of self-esteem and accompanying anxiety are quoted as some of the possible reasons for their poor educational achievement (Everatt et al., 2007). However, some researchers such as Wilkinson and Penney (2013) question whether ability grouping has been successful in relieving these. They claim that 'many students may be underachieving in schools not because they lack "ability" *per se* but rather because their achievements potential is proscribed by systems of judgment that are not inclusive of diverse abilities..., a lack of appropriate differentiation across the spectrum of "ability" sets'. This view seconds Hall and Harding's (Hall, Harding's, 2003) finding that *effective* teachers 'grouped and re-grouped children for *instructional* purposes rather than created fixed *ability* groups'.

Systematic Approach

The components of the systematic approach were introduced earlier in the paper with Singleton's¹⁴⁾ and Torgesen et al.,'s (Torgesen et al., 2006) definitions of the term. Singleton asserts that these principles of structured, cumulative and sequential teaching are 'firmly enshrined in mainstream specialist teaching for dyslexics'¹⁴⁾. In research literature, *structure* is associated with a logical progression, explicit linking between new and old material, and development in small steps (Reid, 2014). Structure facilitates learning as the child with dyslexia may have a good understanding of classification, patterns and regularities, and use these to learn through analogy¹⁴⁾.

In a study conducted by Wyse et al. (Wyse et al., 1999 cited in Reid, 2003) it was found that a structured approach to reading was even more important than training in phonological awareness. A *sequential and cumulative* teaching provides structure as well, but also allows learners to master certain skills before moving on to a next level (ibid). Thus, the instruction will involve logical progression of the material with small steps explicitly linked with each other.

Multisensory Techniques

The *multisensory* principle, involving simultaneously or sequentially four sensory modalities – oral, visual, auditory and kinesthetic-tactile, has been widely recommended for children with dyslexia⁹⁾. The using of the four channels enhances memory and learning and helps for the reinforcement of strong modalities, improvement of weak ones and automaticity (Walker, 2000). Children are facilitated in building the necessary brain pathways in order to establish connections between sounds and letters and process them with greater accuracy and speed⁹⁾.

Snowling & Hulme (Snowling, Hulme, 2011) express certain reservations pointing out that multisensory approach in teaching children with dyslexia is based on evidence only from small-scale studies but lacks such from large-scale research. They find greater value in training in the alphabetic principle as the evidence for its efficacy is ‘considerable’ (Snowling, Hulme, 2011). IDA (2009) also acknowledges that the multisensory approach has not been well-researched in controlled comparative studies yet. Nevertheless, they highlight the fact that elements of it have been included in reading intervention programmes and have proved successful.

It is a fairly established fact that identifying children’s preferred learning style (auditory, visual, tactile, or kinaesthetic), and introducing new material in view of it, increases their chances for success and motivation (Reid, Green, 2007). That does not mean, though, that the weaker sensory modalities of the student should not be engaged¹⁵⁾. Employing different modalities and channels of transferring knowledge increases learners’ opportunities for reinforcement and overlearning – two other major components of dyslexia-friendly learning.

Overlearning, Reinforcement and Metacognition

As it is noted in BDA’s (2014a) definition of dyslexia, it may cause difficulties with ‘the automatic development of skills’. One of the ways to achieve automaticity is through *overlearning* (Reid, 2003). Overlearning does not involve rote repetition but employing different channels for mastering the new information (Reid & Green, 2007), such reinforcement being necessary because of the reported difficulties with short- and long-term memory in children with dyslexia (Reid, 2003). *Reinforcement* is related to the idea that regular practice automatizes the skills¹⁴⁾. *Metacognition* refers to the fact that pupils need to be aware of the possible strategies to use in different contexts (ibid). Being interviewed by the researcher in 2014, the head of a London borough’s literacy department insisted that it is indispensable to embed in the students the concept of being a learner – ‘it’s like a shift in the way that they perceive what they are doing and the way it is transferring’.

A quantitative study evaluating all these principles was conducted by the Institute of Education and the University of York and presented in Rose (2009). It came out with a list of features that teachers taught most important when teaching pupils with dyslexia. As far as teaching strategies are concerned, the highest ranked feature was the multisensory teaching and learning (91% for KS1 and 94% for KS2). Teaching a structured programme of phonics comes with 82% for KS1 and 75% for KS2. Consolidation and reinforcement of material already covered received respectively 73% and 81% (ibid).

Targeting Dyslexia or Targeting All

The distinguishing of dyslexia from other learning difficulties is not founded on sufficient evidence according to some authors. They claim the recommended

teaching strategies come mostly from research involving poor readers in general, and that focused instruction aiding word recognition, especially through decoding, is essential for *all* beginning readers (Stuart et al., 2008; Rose, 2009).

Elliott et al. (Elliott et al., 2008) go as far as to argue that dyslexia serves as ‘conceptual clearing-house for a number of reading skills deficits and difficulties, with a number of causes’ (2008). In their opinion, as many signs of dyslexia seem the same as those of other literacy problems, it does not help teachers to differentiate their instruction to dyslexic and non-dyslexia children with reading difficulties.

Reid (Reid, 2003) rightly notes that teaching approaches should be designed in relation to the individual pupil and not to the ‘syndrome – dyslexia’. Even though a certain pattern of core difficulties is recognized among learners with dyslexia, these students do not represent an identical discrete entity with identical profiles’ (Reid, 2003). Therefore, Reid (*ibid*) points out that the decision about these approaches needs to be informed by the individual pupils’ assessment, including their strengths and weaknesses, preferred learning styles, interests, and motivation.

Do Pupils with Dyslexia Follow the Same Process of Learning to Read?

Some researchers claim that we cannot speak about dyslexia but only of delay as children with dyslexia develop their reading skills following the same stages of development as other children (Cassar et al., 2005, cited in Elliott et al., 2008). However, Frith (Frith, 1985) posits that the progress of children with and without dyslexia is different in at least two aspects. Those who have difficulties proceeding from the logographic level onwards, develop compensatory strategies and logographic skills to an extent greater than that of other children, and also, the excessive focus on phonics instruction may help them develop alphabetic skills but these will require much more effort than in other children, and may not be maintained under stress (*ibid*).

Also, for children with dyslexia the decoding system may not be self-sustaining as with the others. Stuart et al. (Stuart et al., 2008) explain that when beginning readers successfully decode unfamiliar written words, those are added to the sight vocabulary store. The more words are accumulated in this store, the more previously unknown phonetic rules the child will infer, until s/he reaches the phase when s/he will not have to be taught how to decode. However, as Rose (Rose, 2009) points out, pupils with dyslexia may have an impaired development of the self-sustaining word recognition system. Their word recognition processes may never be finalized. This might imply that for some children, the basic principles of grapheme-phoneme correspondence need to be continuously reinforced.

In a study where teachers of students with dyslexia were interviewed about strategies of teaching learning skills, a head of a London borough's literacy support centre strongly asserted:

'I think, there is enough evidence to suggest that... there is a profile which has a cognitive issue behind it, which also has an impact on learning and access to curriculum. And I don't think that should be ignored. I think because it is not a medical condition, then someone thinks it's not really there and there is no evidence. Certainly, in my experience, there is evidence.....

And if we don't say that certain children have a specific difficulty then we are letting them down.'

Blagovesta Troeva¹⁶⁾

Conclusion

The paper explored a number of influential models of reading in order to identify the major skills needed for its acquisition. Together with research findings on dyslexia and literacy difficulties, they provided a conceptual framework for the adoption of certain teaching strategies. Decoding abilities were found to be both a corner stone in reading development and the area posing difficulties for the majority of learners with dyslexia. Intervention studies confirmed the expected role of phonological awareness and letter-sound correspondence in reading development and highlighted the role of structured phonics presented in a rich language environment. While targeted comprehension development has been accounted for in a number of research papers, there is still disagreement about its role in the early stages of reading acquisition. Therefore, the relationship between developing phonological and comprehension skills in pupils with dyslexia needs further exploration. Additional principles guiding instruction were identified and discussed – multisensory teaching, the role of context, mixed-ability grouping, reinforcement, overlearning and metacognition.

These principles govern the ideology and content of a considerable number of intervention programmes, as pointed out by Singleton¹⁴⁾. Since there has not been a significant difference between the strategies that work for readers at risk with and without dyslexia, certain authors advocate for a more general and open support available to all children with literacy difficulties. Elliott et al. (Elliott et al., 2008) stress that for many the statementing with dyslexia is seen as the only means of getting additional and more specialised support, which puts some poor readers at risk of being excluded from a differentiated support. Such claims are justifiable and necessitate taking into account the variations of each learner's profile and accommodating the reading instruction to meet each student's individual needs.

Dyslexia is just a signpost that indicates the need of a more focused intervention and a differentiated approach. However, it is the living personality of the student

which will determine the application of certain strategies of reading instruction. Reading development follows a certain route, a road described by a number of reading theories. Nevertheless, each traveller would display an inimitable variety of personal features, and it is the teacher's responsibility, being well versed in inclusive principles and techniques, to help everyone go forward in their unique journey.

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✉ **Ms. Blagovesta Troeva**
New Bulgarian University
Sofia, Bulgaria
E-mail: troeva@gmail.com