

Dyslexia and the Phonological Deficit Hypothesis

Developing Phonological Awareness in Young English Language Learners

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Abstract The present essay aims at investigating the relationship between dyslexia, phonological awareness, and the development of reading skills, both in a first language (L1) and in a foreign language (FL) – and especially in the English language. The first paragraph offers a theoretical overview of the notions of dyslexia and phonological awareness. The essay moves on to examine the relationship between early phonological awareness skills in preschool children and the later development of their literacy skills. The authors then describe an intervention program to foster phonological awareness skills in English-speaking preschoolers, and propose to employ this practice – in an adapted manner – in Italian preschools. What follows is a focus on the role of phonological awareness in primary school children. After reviewing the main approaches in the field of language teaching methodology, and their degree of 'dyslexic-friendliness', the authors present a phonics teaching proposal to strengthen not only phonological awareness skills in primary school children, but also to approach children to literacy in the form of regular correspondences between sounds and letters in English, through the educational tool of storytelling.

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1 The present essay was conceived by the two authors together. Paragraphs 1 and 2 were written by Antonella Pesce, whereas paragraphs 3, 4 and 5 were written by Verusca Costenaro.

1 Phonological Awareness and Reading Abilities

Especially in the last few years, a vast body of research has investigated the role of phonological awareness in the acquisition of reading skills. Although great evidence has been produced to support the beneficial effects of an early approach to phonological activities to facilitate later reading acquisition, the role of phonological awareness is still generally underestimated, both in the first language (L1) and in the foreign language (FL). In order to understand how reading-impaired children can benefit from early introduction to phonological activities both in L1 and FL, this paragraph will acquaint the reader with one of the core deficits at the basis of developmental dyslexia – the phonological deficit – and the relationship between underdeveloped phonological awareness and reading impairments.

1.1 The Phonological Deficit Hypothesis: a Barrier to Reading Acquisition

In the school environment, there is still much confusion about the actual deficits at the basis of developmental dyslexia and on the actual difficulties that these children encounter when learning a foreign language. According to the latest definition provided by the International Dyslexia Association (2002),

Developmental 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; they are not the result of generalized developmental disability or sensory impairment.

This definition differs from earlier ones, as it introduces what is nowadays identified as one of the major causes for the onset of this specific learning disorder, namely a difficulty in language processing from the written code to the oral code which is usually due to underdeveloped phonological awareness. The so-called ‘phonological processing deficit hypothesis’ seems to provide a plausible explanation of the way developmental dyslexia compromises reading abilities. Research evidence supports the importance of processing phonological (sound) information to reading development (Gillon 2004) and have proven that early expertise of phonological abilities is an essential prerequisite for the development of reading abilities. A phonological impairment present in preschool years

and persisting after formal reading instruction will therefore represent a barrier to reading acquisition both in the native and in a foreign language.

1.2 The Phonological Deficit Hypothesis and Developmental Dyslexia Profiles

Varying severity of impairment within phonological processing also produces different kinds of symptoms; this explains why developmental dyslexia may assume different forms and affect different language processing routes. As it has been previously mentioned, classical explanations of dyslexia identify its cause in poor phonological skills – the phonological deficit hypothesis, and its combination with poor short-term memory – the dual deficit hypothesis (Wimmer et al. 1998).

However, the hypothesis of a phonological deficit at the basis of reading impairments allows for a distinction of different kinds of developmental dyslexia (Snowling 1987). The standard model proposed by cognitive neuropsychology identifies three kinds of dyslexia in relationship to the specific language processing route it affects. A first distinction is between what is generally referred to as ‘phonological dyslexia’ and ‘surface dyslexia’. The former refers to the difficulty in using the phonological or sub-lexical reading route which allows immediate correspondences between words’ sub-lexical units, such as graphemes, and their corresponding phonemes. Children affected by phonological dyslexia will have a low level of phonological awareness; consequently, they will struggle to read pseudo-² and unfamiliar words, and accuracy level will be particularly low. The latter, instead, will predominantly affect the lexical (or visual) route, which implies the ability to readily recognize an entire word by its whole sound (Cornoldi 1999). In other words, surface dyslexia compromises the ability to immediately associate a word’s written form with its semantic and phonological form through a mnemonic operation which allows children to identify words within a range of previously memorized lexical items. Children who cannot use the lexical route will therefore rely entirely on the sub-lexical phonological route, which will make their reading rate particularly slow.

The last kind of dyslexia is perhaps the most severe one as it affects both the lexical and the sub-lexical reading routes with debilitating effects on the basic abilities involved in the reading process. This kind of dyslexia is usually identified as deep (or mixed) dyslexia and, in addition to common symptoms of other kinds of dyslexia, it is characterized by higher levels of processing difficulties, involving the semantic route.

² A pseudo-word is a unit of speech that appears to be a word in a certain language, while in fact it has no meaning.

1.3 Phonological Awareness: Implicit and Explicit Phonological Abilities

Poor phonological awareness is a characteristic feature of dyslexia which becomes evident through a delay or difficulty in forming segmental phonological representations, compromising later phoneme-grapheme associations at the basis of the alphabetic principle. With regard to the development of phonological awareness, it can be useful to distinguish between **implicit** phonological abilities and **explicit** phonological abilities (Goswami 2000; Goswami, Bryant 1990). **Implicit phonological abilities** usually refer to early phonological processing abilities which are used by preliterate children in oral language without reflecting on the structure of spoken words. Early phonological abilities are performed in an unconscious and automatic way and they represent what is generally referred to as the **epilinguistic phonological competence**, which involves intuitive judgements on similarities between words, syllables, onsets and rimes. They usually include simple tasks such as naming, repeating words and pseudo-words and tasks on sub-syllabic units which draw on short-term verbal memory. These abilities are referred to as **early** phonological awareness (Bentin 1992). Conversely, **explicit phonological abilities** imply **a metalinguistic competence**, which is the ability to perform explicit judgements on the structure of spoken words through intentional operations on speech sounds which involve phonological memory, analysis and synthesis of phonological elements (Nijakowska 2010).

Phonological awareness therefore implies the ability to identify, discriminate and manipulate the sound structure of words. It represents the knowledge that the speech stream can be segmented into smaller parts - words, syllables and infra-syllabic units such as onset and rime, and phonemes - and that these elements can be manipulated and processed. Most importantly, oral language development is critical to reading success (for a review of studies, see Adams 1990). Thus, phonological awareness is the metalinguistic competence which enables beginning readers to realize that spoken words are composed of sound sequences and that the most basic sounds - phonemes, at least for the alphabetic writing systems - correspond to written symbols such as letters or groups of letters (digraphs and consonant blends).

1.4 The Developmental Stages of Phonological Awareness

There is ample evidence that in the course of the development of phonological awareness, young children progress from larger to smaller sound units (Aglioti, Fabbro 2006; De Cara, Goswami 2003; Fabbro 2004; Nijakowska 2010). Most studies have shown that preschool children can quite naturally segment words into syllables but cannot manipulate or isolate

single phonemes until they enter formal education, that is when they are introduced to the alphabetic principle³ (Bruce 1964; Liberman et al. 1974; Treiman, Baron 1981). Other studies have proved that preschool children are more confident in detecting rhymes (Wimmer et al. 1994) and that they are able to match words on the basis of common sub-syllabic segments but are unable to match words on the basis of single phonemes (Bradley, Bryant 1985; De Cara, Goswami 2003). The difference between children's early ability to detect, count and manipulate syllables or sub-syllabic clusters and children's later acquisition of phonemic awareness provides evidence that phonological awareness is a gradually developing ability (Bentin 1992; De Cara, Goswami 2003; Fabbro 2004; Wimmer et al. 1994). Moreover, based on the holistic view of children's early lexical representation according to which children's primary goal in language acquisition is to recognize and produce whole words rather than learn phonemic contrasts, one plausible source of the developmental emergence of phonological awareness was attributed to the phonological neighbourhood density principle. Phonological neighbourhood density refers to the awareness of the relationship between similar-sounding words in the child's mental lexicon, based on common sub-units within words such as syllables, rhymes, and ultimately - with the introduction to literacy - phonemes (De Cara, Goswami 2003). This implies that children can naturally establish relationships between similar sounding words sharing larger sub-lexical units, rather than between words only sharing a single phoneme. The latter is, in fact, a competence that they acquire with formal instruction on grapheme-phoneme correspondences (De Cara, Goswami 2003).

Because of their phonological deficit, children at risk for dyslexia fail to create basic mental phonological representations **before** school age, when same-age children are expected to naturally develop rhyme and syllabic awareness. Therefore, they are unable to gradually proceed to establish phoneme-grapheme correspondences in the following stages of literacy - with the introduction to the alphabetic principle.

1.5 Levels of Phonological Awareness

A possible explanation for the gradual progression in the development of phonological skills - from larger to smaller speech segments or units - is that phonological awareness is not an innate aptitude (Bentin 1992) but that there exist 'levels' of phonological awareness (Goswami, Bryant 1990; Gillon 2004) which children become familiar with. Here below is a table,

³ The alphabetic principle - which is the foundation of any alphabetic writing system - includes being able to link the letters of a language to the particular set of phonemes that comprise the spoken form of that language.

adapted from Dalouis (2012) and Gillon (2004), which includes phonological awareness levels, and the skills developed by children for each level:

Phonological Analysis Level	Characteristics	Tasks
Syllable	Syllabic awareness (early phonological awareness) Children naturally develop syllabic awareness as they acquire language abilities	<ul style="list-style-type: none"> - segmenting words into syllables - identifying syllables - deleting syllables - completing words with missing syllable - matching words containing same syllables
Onset-rime	Rhyme awareness (early phonological awareness) usually developing around the early age of four	<ul style="list-style-type: none"> - recognizing rhyming words - rhyme oddity detection tasks - recognizing, generating rhymes - blending onsets and rimes
Syllabic structure	Syllabic structure awareness (late phonological awareness) It develops with formal instruction on the concepts of vowels and consonants.	<ul style="list-style-type: none"> - recognizing words with same syllabic structure - identifying syllables' vowels and consonants
Phoneme	Phonemic awareness (late phonological awareness) It is a more demanding task usually developing with formal instruction on phoneme-grapheme correspondences and with the introduction to the alphabetic principle	<ul style="list-style-type: none"> - categorizing, matching, isolating, blending, segmenting individual speech sounds (phonemes) - identifying words beginning or ending with same phoneme - counting phonemes in a given word or syllable - completing words with missing phonemes - substituting phonemes in a word

Table 1. Levels of phonological awareness, adapted from Dalouis (2012, p. 111) and Gillon (2004, p. 4).

The following paragraph will examine phonological awareness in relation to literacy acquisition – especially reading skills, and the importance of fostering phonological awareness abilities in preschool children. An example of a teaching practice to develop preschool children’s phonological awareness abilities will be provided.

2 Phonological Awareness in Preschool Children and Later Reading Acquisition

Research has shown that phonological awareness in a language is a prerequisite to reading acquisition in that language (for a review of studies, see Adams 1990). Activities testing early phonological awareness during preschool age have the predictive power to reveal which children are likely to experience difficulty with reading and spelling (Gillon 2004). In the same way, weak phonological awareness during early years of literacy, with the introduction to the alphabetic principle, has been found to be a strong predictor of possible reading failure in subsequent stages. The beneficial role of an early approach to phonological activities during preschool age for later acquisition of reading skills and the overcoming of potential language-related difficulties in at-risk children has been widely demonstrated by research findings (for a review of studies, see Gillon 2004).

Within the school environment, it is therefore important to be able to detect early symptoms of poor phonological abilities as early as possible and focus on activities that develop early phonological awareness to facilitate the acquisition of reading skills. In preschool at-risk children, this kind of activities will foster the acquisition of compensatory strategies to achieve a sufficient degree of automatism in manipulating speech segments. Compensatory strategies will be useful later on as children approach literacy stages at the beginning of formal instruction, when they will need to readily establish and recognize phoneme-grapheme correspondences.

2.1 Multi-Sensory Intensive Phonics Instruction for Preschool Children

Within an L1 context, overcoming reading difficulties heavily depends on intensive and specialist speech teaching and therapy, often extending over long periods of time. Findings of several imaging studies investigating brain activation after phonologically driven reading training have shown the increased activation of areas typically employed by unimpaired readers. This seems to prove that teaching methodologies and practices such as **intensive phonics instruction** before formal education play a vital role in creating brain activation patterns, allowing the subsequent development of compensatory reading strategies in at-risk children (Nijakowska 2010).

The majority of languages with a transparent orthography are taught using highly structured phonics methods that explicitly teach letter-sound mappings and syllabic structure. Thanks to the high reliability of the mappings, this kind of teaching method is extremely effective because learners receive positive feedback throughout the learning process (Goulandris 2003) and can be encouraging even for children presenting a phonological deficit. Opaque orthographies, instead, will require intensive phonics

instruction of reading strategies also based on larger phonological units, such as onset and rime, in order to provide children with adequate measures to master a more holistic reading route. As already mentioned, phonological awareness is a prerequisite to the mastering of language-related skills in a child's first language. But what happens when a preschool child is exposed to a foreign language? According to the Linguistic Interdependence Hypothesis on language transfer (Cummins 1981), during the L2 acquisition process, phonological skills are indeed transferred from L1 to L2. As a consequence, in the context of FL learning, intensive phonological activities will play a pivotal role in restoring phonological awareness both in L1 and FL.

'Phonics' refers to a re-known teaching/learning method traditionally employed in English speaking educational settings, which includes explicitly teaching of sound-letter correspondences for reading and spelling. «A is for *apple*, b is for *bat*, c is for *cat*» are examples of phonic activities. However, multi-sensory phonics instruction differs from traditional phonics programmes as it is supposed to be based on the development of language-related skills as well as other skills, such as motor, visual, tactile or auditory skills, and will be therefore perceived as more enjoyable by preschoolers. If this is true for the development of early phonological awareness in L1, it derives that a multi-sensory phonics programme is even more suitable for the development of early phonological awareness in FL in preschoolers as it responds to their need to associate abstract phonological segments to sensory experiences. The presence of a suspected phonological deficit implies that at-risk children will need to greatly rely on their senses to support the acquisition of language-related skills.

Multi-sensory phonics instruction both in L1 and FL, however, is not merely beneficial due to the language transfer principle, but also because especially in the preschool environment, it can be easily integrated with multi-sensory ludic activities that support children's language acquisition and the association of language activities – that at-risk children often tend to avoid because they perceive them as frustrating, unpleasant experiences – with more pleasant, enjoyable experiences that can also foster memorisation of language-related activities. However, while there can be a wide range of teaching resources available for the teaching of multi-sensory phonics activities for preschoolers in L1, when it comes to the teaching of a FL, it can be useful to refer to teaching resources developing phonological awareness produced for the same language as an L1. This kind of teaching resources will have to be selected and adapted to the children's needs and age as well as to the contest of FL in which it will be taught.

2.2 Developing Early Phonological Awareness in Preschoolers: an Example of a Multi-Sensory Programme

In England, the Department for Education and Employment (1998) has formalized a *National Literacy Strategy* which has brought forward the teaching of reading from the age of five years. Nevertheless, English children learn to read more slowly than children from other countries, who although beginning formal education later, can reach higher levels of accuracy much sooner (Ziegler, Goswami 2005). The delay in the acquisition of reading skills in English children is caused by the problems related to the low degree of transparency of the English language and the high inconsistency of grapheme-phoneme correspondences. The long history of studies regarding reading difficulties in English has led to the production of a vast range of teaching resources and dyslexic-friendly reading programmes to develop phonological awareness and compensatory reading strategies for English speakers. As for preschool learning programmes devised for at-risk children with delayed language development, it is worth mentioning an example of a multi-sensory learning programme with a ludic approach from the English speaking world, *Before Alpha: Learning Games for the Under Fives*⁴ (1999).

Before Alpha represents an instructional practice that was developed to foster phonological abilities in preschool children learning English as their L1 and is structured in a modular way so that children can gradually attain a certain degree of confidence and proficiency in specific language skills. This programme was originally devised as a one-year course for use with children with delayed language development, between the age of five to six years, to monitor their development through the course year. The effectiveness of this programme and its startling results have made it a benchmark for all educators involved in the early stages of literacy of all children in the English-speaking world. This methodology is here proposed as an effective instructional tool to develop phonological awareness and language skills and could be used, in an adapted, revisited form, with all young learners of English as a FL (Pesce 2012).

The language activities featured in the *Before Alpha* programme are based on the integration of different kinds of skills:

1. **motor skills**, both fine and gross: manual dexterity for fine motor control, for example in mimicry activities in finger play rhymes⁵ and action rhymes;

4 In the same series, a learning programme for schoolers has been designed by the same author, *Alpha to Omega: The A Z of Teaching Reading, Writing and Spelling*.

5 A *finger play rhyme* involves the use of the hands and fingers to mimic a rhymed short story.

2. **visual perception and discrimination:** visual sequencing, visual categorisation, visual memory, appreciation of the relationship between shapes, knowledge of left and right, up and down, backwards and forwards, knowledge of colours and numbers;
3. **auditory perception and discrimination - phonological awareness:** auditory sequencing of sounds, auditory awareness of rhyme and rhythm, auditory memory of sentences which can be improved by the aid of hand clapping to stress syllabic rhythm which is usually readily available to children;
4. **full spoken language competence:** correct use of tense and concord, correct use of pronouns, correct sentence construction, ability to follow instructions and to organise thoughts so that instructions can be given.

Simple games and activities involving the above-mentioned competences can help children make the first link of associating pleasurable experience with verbalisation (Hornsby 1999), which is a prerequisite to the acquisition of the alphabetic principle. This kind of programme provides an example of a successful phonological multi-sensory integrated learning strategy, which involves **phonological training, binocular control and balance training**, in accordance with the hypothesised interrelation between the phonological deficit and other core deficits in dyslexic children.

With special regard to the phonological dimension and the use of this kind of activities for English speaking children to develop phonological awareness in children learning English as a FL, the programme dedicates a large part to the development of auditory perception and phonological discrimination which could be selected and used in the context of English as FL. The first stages begin with rhythm awareness activities, such as beating time with musical instruments, auditory perception activities for basic ear training, like identifying tin contents and the sounds associated with them, identification of sub-syllabic units in words and their redundant repetition in nursery rhymes (like in «Baa baa black sheep» for redundant repetition of initial 'b'); picture lottos with objects beginning with 'p', 'b', 't' or 'd' for correct pronunciation and phonological awareness, and finger play rhymes to develop rhyme awareness while integrating speech with actions, which children usually enjoy doing without bothering too much about meaning, like in the example:

Ten little men standing up straight
(hold up both hands with fingers straight)
 Ten little men open the gate
(open all fingers)
 Ten little men make a big ring
(join thumbs and little fingers to make a ring)
 Ten little men bow to the king

(*bow hands down to table*)

Ten little men running to play

(*run fingers all over table*)

Ten little men hiding away

(*hide hands behind back*).

This finger play rhyme, for instance, proposes a redundant repetition of initial 't' in «ten» to reinforce articulatory awareness of the phoneme 't', and develops rhyme awareness in phonologically similar words (see the phonological density neighbourhood principle in preschoolers' rhyme awareness in § 1.4), such as «straight» and «gate», «ring» and «king», «play» and «away». The programme moves on to the next stages, with similar activities that are structured in the same way all throughout the programme, but always adding a new task, once children have acquired a sufficient degree of automatism and confidence in previous stages.

Learning programmes like *Before Alpha* highlight that, especially in deep orthographies such as English (where there is not a regular correspondence one sound - one letter), in which rhyme awareness is a crucial, essential prerequisite (Wimmer et al. 1994), reading starts with *nursery rhymes* through which the child learns to enjoy the rhythm and rhyming of words without bothering too much about meaning. The association of *nursery rhymes* with *finger play rhymes*, thanks to which the child learns to integrate the senses of sight, hearing, touch and movement, is a perfect example of a successful multi-sensory learning strategy, especially because it focuses on the malleability of children phonological abilities during preschool education.

Moreover, because of the interrelation between phonological skills in L1 and FL, the multi-sensory approach to teaching phonological and orthographic features of language allows at-risk children to partly catch up with unimpaired learners both in the native and in a foreign language. However, although offering a vast range of examples of simplified activities to master phonological activities in English L1, programmes like the one devised in *Before Alpha* should be taken and adapted accordingly to the needs of children who are being introduced to the sounds of English for the first time. To facilitate preschool children acquisition of phonological awareness in English, for example, teachers should take into account the phonological neighbourhood density principle (§ 1.4) which applies across languages (De Cara, Goswami 2003) to choose which words they will be working on, and select words by similarities on the sub-lexical level, rather than by contrasts. For example, similarities can occur on the syllabic structure (for example, CVC) in words sharing same rime, like in «b-at, m-at, p-at, c-at». Beginning from similarities will allow children to naturally detect contrasts in differing sounds (b, m, p, c). This will help developing a phonological awareness of smaller sound units, therefore

preparing children for later acquisition of phonemic awareness, with the introduction to the alphabet principle and phoneme-grapheme correspondences.

3 Phonological Awareness in Primary School Children: the Methodological Dimension

After discussing what phonological awareness is, its relation to children's literacy skills, and a phonics programme to develop phonological awareness skills in English in Italian preschoolers, we now move on to examine how phonological awareness skills in English could be fostered within a primary school setting, in order to introduce pupils to literacy in English, in the form of regular letter-sound correspondences. Special attention will be devoted to how the overall learning setting could be made the most accessible for dyslexic learners.

When English is introduced in Italian primary schools or any other level, it has the status of a 'foreign language' (FL) taught mainly as a school subject. As a consequence, language teachers play a crucial role in dyslexic learners' acquisition processes, in that their methodological choices will affect such processes more or less remarkably (Daloiso 2012). The next sections will review the most influential approaches in contemporary teaching methodology in relation to the specific features of dyslexic learners. Our aim is identify the most appropriate operative model to foster phonological awareness skills and knowledge within a primary school educational setting.

3.1 The Structural Approach

This approach has its root in the behaviourist psychology theories and audio-lingual approaches, where the learner is viewed as a *tabula rasa* to be simply 'trained' by teachers. Great emphasis lays on 'drills', i.e. exercises that present language forms to be repeated several times in order to be retained and create 'mental habits' in learners (Balboni 2002). The structural approach strictly considered does not seem to be effective for dyslexic learners, as (Daloiso 2012, pp. 78-79):

- it proposes a mono-sensory input, mainly auditory in nature;
- it includes explicit teaching of grammar but not of the phonological grammar;
- it simply conceives language as a set of rules to be memorized.

There are, nonetheless, some positive aspects in the structural approach

that could be maintained and integrated in the teaching process addressed to dyslexic learners, such as (Costenaro 2011):

- the ‘explicit’ teaching of grammar. The dyslexic learner needs to be guided at the meta-cognitive level by making explicit not only contents but also procedures and rules underlying the functioning of a language. However, when working with young learners who may not be cognitively mature to deal with abstract explanations of the language (Daloiso 2009b), the way in which this may be tackled is essential: they could be exposed to short, spontaneous, reflective moments on what they experience first-hand (Costenaro 2011)
- drilling as a focus on the ‘form’ of the language. The mechanical nature of drills could be mitigated by inserting them in a broader, multi-sensory learning setting. When working with English phonemes, for instance, having children listen attentively to and repeat sounds could be viewed and carried out in the form of a pleasant activity embedded in a broader instructional context, such as storytelling, or a playful setting where the task is carried out in the form of a competition between groups of pupils (Costenaro 2011).

3.2 The Communicative Approach

This approach draws from the theories of pragmatic and functional linguistics dating from the 70s and 80s of the last century, and views language mainly as a communicative tool, rather than a ‘static’ subject to be learned. The advantages of employing a communicative approach when working with dyslexic students can be summed up as follows (Daloiso 2012, pp. 80, 81):

- it conceives language as a communicative tool rather than a sum of grammar rules;
- it aims at developing a communicative competence and thus focuses on socio-pragmatic accuracy rather than grammatical accuracy;
- the learner is actively engaged in the learning process rather than being passive;
- it includes functional, meta-linguistic and (inter)cultural competences
- which do not confine the acquisition process to learning language skills but broadens the notion of abilities to be developed.

On the other hand, the communicative approach includes some features that are not completely dyslexic-oriented, such as the focus on a mono-sensory input, the implicit teaching of grammar, and the risk of creating

situations of ‘communicative pressure’ where students are required to use the language from the very onset (Daloiso 2012, pp. 80-81).

3.3 The Communicative-Formative Approach

As seen in the previous paragraph, the communicative approach, as applied to the teaching of a foreign language to dyslexic students, does not seem to be sufficient in itself. Studies carried out by the so-called Venetian school and Freddi in particular (for a review of studies, see Freddi 1990a) have shown that the instrumental function is not the only one performed by a FL. The FL has an additional ‘formative role’, in that it represents a tool for learners’ overall growth, namely their cognitive, cultural, relational, psycho-emotional, and semiotic development. This hybrid approach has been named ‘communicative-formative approach’. On a whole, it offers the same advantages as the communicative approach. The additional notion of language as a ‘formative’ tool carries dyslexic-oriented implications in that, despite the language skills (i.e., reading and writing skills) that the learner is able to acquire, the learning process may represent a chance of growth at other levels (Daloiso 2012).

3.4 The Experiential and Playful Methodologies

Within a primary school educational setting, the communicative-formative approach finds one of its most appropriate methodological realization in both the «experiential methodology» (Daloiso 2007) and the «playful methodology» (Caon, Rutka 2004; Freddi 1990b). Both methodologies conceive the learning process in ways that can be easily accessed also by dyslexic students, for instance, by doing and by experiencing the world around them, by observing, imitating, manipulating, and using all of their senses. The playful aspect of learning activities additionally adds in creating an anxiety-free and safe learning setting, where language especially has a formative role in the student’s acquisition path. What teachers should do at the end of each activity is introduce an explicit phase of ‘meta-cognitive conversation’, respectful of children’s ages and cognitive levels, in order for children to understand what they did and why they did it.

3.5 The Need for an Operative Model Tailored for Dyslexic Children

After reviewing the most influential teaching approaches and methodologies, we now propose to embed their most dyslexic-oriented features into

the most suitable operative model for dyslexic children. When dealing with primary school learners, it should be remembered that, despite their specific language difficulties, they are still undergoing their process of linguistic and cognitive growth. Therefore, the most popular traditional model based on the differentiated involvement of the right and left brain hemispheres, the ‘teaching unit’, does not seem to be the most appropriate model for children under seven or eight years of age in general (Daloiso 2009b). A more flexible model seems to be required for young learners in general and for dyslexic children in particular. What we propose as a dyslexic-oriented model is a set of acquisition paths with the following features (Ayres 1995; Catts 1991; Costenaro 2011; Daloiso 2007):

- **short:** it should last no more than one hour, so as to assist children who have impaired short-term memory and might be cognitively overloaded with longer sessions;
- **flexible:** it should naturally integrate various ongoing educational paths, and meet the contingent needs typical of childhood education. This would help dyslexic children by integrating the learning input into a more flexible and broader learning context;
- **systematic:** it should be organized in a logical order, including tasks going from easier to more difficult skills (e.g., from syllable to phoneme awareness), and respecting the ‘natural’ sequence of acquisition in the L1 (e.g., from oral skills to written skills). Sequentially structured teaching methods additionally help dyslexic children be aware of the teaching/learning processes and understand what is going on in the classroom;
- **direct:** children should be actively engaged in the teaching/learning process, so as to become more self-confident and motivated. This can be done by employing teaching materials close to children’s everyday experiences, such as nursery rhymes, chants, songs and stories from books;
- **explicit:** children should constantly be assisted and guided in their learning process. This implies, for instance, modelling speech forms for children and scaffolding their attempts at producing them, as well as providing immediate and clear feedback on correct/incorrect attempts (Justice, Kaderavek 2004);
- **multi-sensory:** this allows pupils to experience the learning process through all of their senses.

A sample teaching/learning path to foster phonological awareness skills at the phoneme level within a primary school setting will be presented in paragraph 4.

4 From Phonemic Awareness to Early Literacy in the Primary Classroom

This paragraph proposes a sample teaching path which could be employed to foster phonemic awareness in primary school children, as well as introduce them to literacy in English. This path has been experimented in English-speaking countries with children learning English as an L1, and is here proposed in an edited form in order to be adapted to the specific context of English as a FL. A concrete realization of the here presented dyslexic-oriented methodological framework has recently been made possible thanks to a collaboration between Oxford University Press Italy and a team of researchers from Ca' Foscari University Venice, Dr. Michele Daloso, Dott.ssa Luciana Favaro and the presently writing author. This team has designed some innovative teaching/learning materials in the form of a booklet that is due for publication at the beginning of 2013. This booklet, which will be distributed in schools alongside the primary school workbook *New Treetops 1*, aims at introducing Italian first-graders to phonological awareness at the phoneme level by making children – and especially potential dyslexic children – work on some particular sounds of the English language through some short, systematic, direct, explicit, playful and multi-sensory learning ‘sound paths’.

Likewise, this paragraph proposes to employ the popular tool of storytelling with a new goal, that is, introduce phonological awareness activities at the phoneme level. This level has been chosen as the English language presents some sounds that either do not exist in the Italian phonological system (e.g., /θ/) or are articulated differently (e.g. /h/ is aspirated in English). This can significantly hinder the comprehension and production processes of those children who have difficulties in recognizing and reproducing the auditory input. The phase of oral work on phonemes is followed by some activities which explicitly link the oral code to the written code, by requiring children to directly associate sounds with their most frequent written realizations.

4.1 Phonemic Awareness and Storytelling

The teaching path here proposed is addressed to the whole primary class in general and to dyslexic children in particular. This path draws from research within the Anglophone educational setting, where researchers (Price, Ruscher 2006) have proposed to embed instructional strategies to foster phonological awareness skills at various levels into routines of book sharing between adults and children. The path here presented includes a series of phases, going from a focus on meaning to a focus on form (phonemes), to a final step where form and meaning are integrated. Teachers

could choose simple storybooks that have already been employed or some new short stories. Here below is a table adapted from Price and Ruscher (2006, p. 33) with a sequence of instruction for a phonological awareness program embedded in storytelling.

Step	Focus	Activity	Description
1	Meaning	The teacher displays picture cards or objects	Emphasis is on the key content words. The teacher displays picture cards/ objects to introduce key words, facilitate comprehension, and motivate children
2	Meaning	The teacher shares the book	Emphasis is on the story content. The teacher tells the story several times, and encourages overall comprehension through visual aids and paralinguistic clues
3	Educator modelling form	The teacher provides demonstrations	The teacher models phonological awareness activities for children, so that they know what is expected from them
4	Children practising form	Children are engaged in activities and games	The teacher uses words from the book in games and activities for repeated practice of the targeted phonological awareness skill
5	Integrating meaning and form	The teacher shares the book again	The teacher highlights children’s acquired knowledge of the targeted phonological skill while re-telling the book

Table 2. Sequence of instruction for a phonological awareness programme embedded in a storytelling routine (adapted from Price, Ruscher 2006, p. 33).

4.2 A Sample Phonemic Awareness Path Embedded in Storytelling

This section provides an example of a set of phoneme awareness activities embedded in the story *Winnie the Witch* (Paul, Thomas 1987). Such path is a revision and an adaptation of the one proposed and designed by Price and Ruscher (2006: 56-65). In the storybook, Winnie lives in a house that is all black, with her cat Wilbur. Wilbur is also all black, except for his green eyes. This makes things complicated in the house, as the cat blends in with the furniture, making it difficult to see him. Winnie tries to solve this problem by changing the cat’s colour with her magic wand several times, but it never works out. One day Winnie has an idea and decides to keep her cat black and change the colour of her house instead. This book is a useful tool to work on the phoneme level of words, as it includes many one-syllable words with short vowel sounds (e.g., *cat, sat, can, bath, black, grass, sit, him, witch, red, bed, legs*), long vowel sound patterns

(e.g., *sheet, sleep, green, tree, came, chair, blue*), or R-controlled vowel sound patterns (e.g., *turn, bird, door, floor*). Before starting the storytelling experience, teachers should explain to the children that they will listen to a story first, and then will carry out some new activities with the sounds of the English language. If children have troubles grasping the meaning of the word «sound», the teacher can expose them to a series of sounds, from environmental sounds (the wind blowing; a pair of scissors cutting) to sounds in Italian (Costenaro 2011). What will happen during the storytelling should be clear to all children. Following is a description of the sound path suggested in order to introduce the phoneme awareness task of blending sounds to form words. This is considered an easier task at the linguistic and cognitive level, as compared to segmenting words into single sounds. Research (Adams 1990) has shown that being able to blend sounds to form words is a fundamental skill preparatory to being able to associate sounds with letters. The following path is an adaptation of the one proposed by Price and Ruscher (2006, pp. 56-65) (Costenaro 2011):

Step 1: Focus on meaning. The teacher presents the key words of the story through picture cards, such as *house, cat, witch, black, bed, chair, green*, then shows pictures from the book itself. As an alternative, the teacher introduces the story through real objects found in the story, such as the animal toy of a cat, a little Lego house, a real chair etc.

Step 2: Focus on meaning. This second phase is still dedicated to enhance and strengthen story content comprehension. The teacher tells the story in simple and carefully selected English words. Paralinguistic clues such as facial expression, gestures, body language, voice tone, intonation, can be used in order to facilitate children's story comprehension (Costenaro 2006; Steinbock, Costenaro 2005). The story can be told more than once.

Step 3: Teacher modelling form. The teacher models the phoneme awareness task - blending - that children will carry out on their own during step 4. The educator initially models the blending task using words that are taken from the storybook, and has children listen to him/her carefully without expecting them to take part in the activity. The teacher can decide to focus on the regularly spelt one-syllable word *cat*. Children are expected to have understood if not already retained the meaning of this word, as they have seen it in the storybook pictures or in the use of an animal toy during step 1 and 2. The educator explains the task by telling the pupils that he/she will say the sounds in a word in a weird way, namely, in little bits. The teacher models the blending activity by pronouncing the sounds contained in the word *cat* with enough space between them: «/k/ pause /æ/ pause /t/», and then pronounce the whole word, «*cat*». The teacher repeats the activity several times and encourages children to listen attentively but

do not require yet that pupils blend the sounds together to create the word. Within a context of English as a FL, learning to accurately recognize and articulate the short vowel sound /æ/ is essential, in order for instance to differentiate such words as *cat* and *cut*. If teachers do not feel safe in their pronunciation model for children, they can make use of specific websites in order to have children listen to and see an English-speaking model.⁶ When pronouncing the letter /t/ in *cat*, the teacher should be careful to stress how it differs from the Italian consonant. The teacher could playfully touch his/her upper front teeth while pronouncing the Italian /t/, and then have children see that in English the tongue ‘goes a different way’ and actually touches the area right above the upper front teeth.

Step 4: Children practising form. Children are actively involved in the phoneme awareness task previously presented. The teacher could first work with the same word *cat*, and motivate the children by explaining that s/he will need their help to put the word back together again. When pupils have practised the task with the word *cat*, the teacher can introduce new words, not necessarily known by the children, such as rhyming words: *mat*, *bat*, *fat*. During this phase, the focus is on the phonetic form of words, thus teachers’ main concern should not be on the meaning of words. If pupils naturally ask what a word means, the teacher could devise strategies to have them forget about the contents for a while and concentrate on the sound structure: «This is a game with the sounds in words. Listen: /m/ long pause /æ/ long pause /t/ are separate sounds. If we don’t blend these sounds, we cannot have a full word. Only when we have a full word, we will find out its meaning».⁷ In order to make the blending task more accessible to dyslexic children, some multi-sensory strategies to enact the visual and kinaesthetic senses should be devised. The teacher could assign three blocks of different colours to pairs of children and ask them to put the blocks near to one another, left to right, when the teacher pronounces the three sounds in the word *cat*. The left to right direction should be explicitly stressed, in order to assist all those non-native Italian children whose alphabetic system significantly differs from the Italian one. The teacher can then encourage pupils themselves to move the blocks near to one another and at the same time blend the sounds in order to pronounce the whole word. Children can additionally be encouraged to count the number of blocks they use, in order to understand how many sounds are in the word *cat*.

6 A phonetics link which proposes a multi-sensory approach to the pronunciation of the English sound system is for instance <http://www.uiowa.edu/~acadtech/phonetics/english/frameset.html>.

7 Due to its conceptual complexity, the teacher can say this in Italian.

Step 5: Integrating meaning. The teacher retells the story, and when s/he encounters the word *cat*, he/she reviews the blending task encouraging children to give answers: «Do you remember what “/k/ pause /æ/ pause /t/” is?», or asks children to count sounds out loud in the word: «Do you remember how many sounds there are in “cat”?» As before, this can be asked in Italian. Thus doing, children are guided to review the task previously carried out within the embedded context of the book sharing experience. This pleasant and anxiety-free learning setting can in its turn help children anchor the input learned in their long-term memory.

The storytelling framework can represent an effective introductory strategy to make children feel safe and confident – as they know what storytelling is about. After this first phase, we suggest that teachers continue to work on the targeted task outside the storytelling setting, so that children have the possibility to practice the activity in different contexts.

4.3 Introducing Literacy: from Sounds to Letters

After children have practised blending tasks with words taken from the storybook and new words, and have practised the pronunciation of most difficult sounds in such words, the teacher can introduce some simple tasks to associate each sound with its written realization. Capital letters are to be introduced first, as they are easier to be recognized and reproduced. It should also be kept in mind how crucial it is to have dyslexic children approach the written code in a systematic and multi-sensory way. The age of the learners will be crucial in this phase. With older children already knowing the Italian alphabet and how to write, the main focus will be to have them notice that there are words in English which function like most Italian words, that is, one sound corresponds to one letter only (as per the phonics approach). First-graders will have to be guided in a slower manner to learn to recognize all the single letters in a word like *cat*. The teacher should be careful to first choose words that do not differ significantly from Italian words, that is, do not contain letters like the diagraph *th* or the trigraph *tch*.

During this phase children are guided to recognize and associate regular sound-letter correspondences of familiar one-syllable words (Costenaro 2011). This should be done with a multi-sensory approach. Pupils could be divided in small groups and be assigned a set of big coloured plastic letters. The teacher could then pronounce the word slowly stressing its single sounds, /k/ /æ/ /t/, and encourage the children to choose the letters from their set and put them close to one another in order to form the word, and read it. Or the teacher could divide the class in small groups of children and assign each group a big alphabet letter card. Then the teacher could call to the front of the room one child from the /k/ group, one child from the /æ/

group, and one child from the /t/ group, and have the three children stand close to one another while sequencing their sounds to form the word. This activity can be carried out in the form of a competition, where the teacher pronounces a three-letter word out loud and has pupils from each group get together to form the word as quickly as possible.

When children read a whole word, it is important for teachers to give an immediate feedback if the pronunciation is not appropriate. If children for instance read the short vowel /æ/ in *cat* as the Italian sound, the teacher should pronounce it ‘the English way’ at once, stressing it and inviting the pupils to repeat the sound alongside. The teacher could tell the children that the English letter *a* is a ‘tricky letter’, as it is pronounced a bit differently as compared to the Italian letter *a*.

What is crucial during this phase of literacy introduction, is to be explicit with pupils about the mechanism of translation of sounds into letters. In order to make the process easier for children, it is recommended that regularly spelt words are tackled first. When encountering irregularly spelt words in the course of their learning process, children will then have to learn how to activate the most appropriate visual memory strategies in order to retain words.

5 Conclusions

Throughout this essay, the main focus has been on the notion of phonological awareness skills as related to young dyslexic learners and their reading skills. One of the main goal has been to suggest some methodological strategies and practices to assist young learners in developing their meta-phonological abilities when approaching the English language. The learning programmes and paths suggested to include phonological awareness tasks and games in the English syllabus show that it is indeed possible for Italian educators and teachers to find effective and pleasant ways to foster some crucial – and often neglected – language abilities and knowledge in English that will successively affect young learners’ reading and writing skills.

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