

# The Efficacy of Phonics-Based Instruction of English as a Second Language in an Italian High School: A Randomised Controlled Trial<sup>1</sup>

La eficacia de la Instrucción Basada en Pronunciación en una Clase de Inglés como Segunda Lengua en una escuela secundaria italiana: Una Prueba Controlada Aleatoria.

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## Abstract

Recent neurological breakthroughs in our understanding of the Critical Period Hypothesis and prosody may suggest strategies on how phonics instruction could improve L2 language learning and in particular phoneme/grapheme decoding. We therefore conducted a randomised controlled-trial on the application of prosody and phonics techniques, to improve phoneme-grapheme decoding, to test these findings on a typical late high school cohort of Italians. A trial group of 24, 17-18 year-olds followed a short 10-week, 20-hour trial course and were compared to a control (14 students) preparing for the Cambridge First Certificate exam. The trial group were given phoneme/grapheme decoding material and event-related-potential reinforcement in substitution of traditional exam practice, taught from a current textbook and web-site material. Results showed that the trial-group significantly improved in both orthography ( $p=0.048$ ) and pronunciation ( $p=0.000$ ), in particular in the long vowel and digraph categories.

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Furthermore, they significantly improved in a shortened interview category ( $p=0.024$ ), for lexis, discourse and pronunciation. Due to the trial's small size, we concentrated on reducing type 2 statistical errors to a minimum. We believe that our results confirmed the neurological findings of the use of prosody in TESOL and confirmed the validity of phonics techniques for L2 teaching. We also consider that the results are sufficiently robust to warrant a full-sized trial of phonics and prosody as a valid TESOL teaching technique.

*Key words:* Critical Period Hypothesis, prosody, phonics, orthography, pronunciation, phoneme-grapheme decoding, TESOL.

### Resumen

Los recientes avances neurológicos en la comprensión de la Hipótesis del Período Crítico y la Prosodia pueden sugerir estrategias en como la instrucción en fonética puede mejorar el aprendizaje de una segunda lengua L2 y, en particular, decodificar los fonemas/grafemas. Por tal razón, se condujo una prueba controlada aleatoria sobre la aplicación de técnicas de prosodia y fonética para mejorar la decodificación fonema-grafema y probar estos hallazgos en una cohorte normal de una escuela secundaria italiana. Un grupo de prueba de 24 estudiantes entre los 17 y 18 años siguieron un curso corto de 10 semanas de 20 horas en total y se comparó con un grupo de control de 14 estudiantes que se preparan para el examen Cambridge First Certificate. Al grupo de prueba se le entregó material para la decodificación de fonemas/grafemas y refuerzo potencial relacionado con el evento en sustitución de la práctica tradicional para el examen que se enseña de un libro de texto y material web. Los resultados mostraron que el grupo de prueba mejoró significativamente tanto en ortografía ( $p=0.048$ ) como en pronunciación ( $p=0.000$ ), en particular en la vocal larga y categorías de dígrafos. Además, mejoraron significativamente en una categoría de entrevista abreviada ( $p=0.024$ ) en léxico, discurso y pronunciación. Debido al pequeño tamaño de la prueba, nos concentramos en reducir los errores de tipo 2 al mínimo. Creemos que nuestros resultados confirmaron los hallazgos neuronales del uso de la prosodia en TESOL y confirmaron la validez de las técnicas de fónica para la enseñanza de la segunda lengua L2. Consideramos que los resultados son lo suficientemente robustos para garantizar una prueba a gran escala de fónica y prosodia como una técnica válida de enseñanza en TESOL.

*Palabras clave:* Hipótesis sobre el Período Crítico, prosodia, fónica, ortografía, pronunciación, decodificación fonema-grafema, TESOL,

### Resumo

Os recentes avanços neurológicos na compreensão da Hipótese do Período Crítico e a Prosódia podem sugerir estratégias em como a instrução em fonética pode melhorar a aprendizagem de uma segunda língua L2 e, em particular, decodificar os fonemas/grafemas. Por esse motivo, conduziu-se uma prova controlada aleatória sobre a aplicação de técnicas de prosódia e fonética para

melhorar a decodificação fonema-grafema e provar estas descobertas em uma coorte normal de 7<sup>a</sup> a 9<sup>a</sup> Série e Segundo Grau na Itália. Um grupo de prova de 24 estudantes entre 17 e 18 anos seguiram um curso curto de 10 semanas de 20 horas em total, e foi comparado com um grupo de controle de 14 estudantes que se preparam para a prova Cambridge First Certificate. Ao grupo de prova foi entregue material para decodificar de fonemas/grafemas e reforço potencial relacionado com o evento em substituição da prática tradicional para a prova que se ensina de um livro de texto e material web. Os resultados sinalaram que o grupo de prova melhorou significativamente tanto em ortografia ( $p=0.048$ ) quanto em pronúncia ( $p=0.000$ ), principalmente na vocal longa e categorias de dígrafos. Além disso, melhoraram significativamente em uma categoria de entrevista abreviada ( $p=0.024$ ) em léxico, discurso e pronúncia. Devido ao pequeno tamanho da prova, nos concentramos em reduzir os erros de tipo 2 ao mínimo. Achamos que os nossos resultados confirmaram as descobertas neuronais do uso da prosódia em TESOL e confirmaram a validade das técnicas de fônica para o ensino da segunda língua L2. Consideramos que os resultados são o suficientemente robustos para garantir uma prova a grande escala de fônica e prosódia como uma técnica válida de ensino em TESOL.

*Palavras chave:* Hipótese sobre o Período Crítico, prosódia, fônica, ortografia, pronúncia, decodificação fonema-grafema, TESOL.

## Introduction

The use of phonics techniques as defined as ‘a system for encoding speech into written symbols.’ (Mesmer & Griffith, p 2. 2004), is well established, as a means of teaching the basis of literacy in most L1 English speaking countries (Ehri, Nunes, Stahl & Willows, 2001, Stuart 2005, Torgersen, Brooks & Hall, 2006). However, despite a long tradition (for example, Chomsky & Halle, 1968, Jones, 1996) of acceptance that the relationship between phonology and orthography and in particular the phoneme-grapheme code is crucial, decoding skills are still considered peripheral in the TESOL literature. There has been recent neurological linguistic research that points to the link between prosody and the application of teaching methods (Nickels, Opitz, & Steinhauer, 2013). These are in effect basic phonics techniques, specifically related to improving both orthography (phoneme-grapheme decoding PG) and pronunciation (grapheme-phoneme decoding GP). The aim of this randomized trial was to create a classroom environment to test the validity of these inter-disciplinary findings on a group of students who would normally be beyond the usual primary age considered as benefitting from L1 phonics techniques, i.e., 17-18 year old students.

### The Problem in Italy

In Italy, the classroom approach to teaching English is still heavily influenced by the grammar-translation method, with a supplement of communicative strategies principally taught by native-speaker (NS) teachers (*Ministero d’Istruzione dell’Universita e della Ricerca’ - 2012*). Furthermore, Italy regularly ranks below the OECD average and recently results have been worsening (PISA 2015).

The problem with all instruction (NS or NNS) is that there is no or little possibility to teach PG/GP decoding. This lack of instruction on the phonemic structure of English or phonics rules, means that there is no systematic knowledge at any level or age of basic literacy skills as conceived in L1 educational systems (Ehri et al. 2001). We could therefore consider that both spelling and pronunciation errors derive directly from an L1 interpretation of the decoding system. This is particularly a problem for Italians, and with other similar ‘transparent’ languages such as Spanish, (Martinez, 2011) given the relative lack of correspondence between vowels and digraphs, as a quick glance at the respective phonemic charts will illustrate (see Appendix 1). We therefore hypothesize that a short classroom course concentrating on these decoding skills could improve basic communication and literacy skills, even for older students.

## Definitions

It is important to define the basic aspects of our argument to clarify the link between decoding skills and improved communication for young adult TESOL students. We concentrated on phonics techniques which taught both PG decoding, the ability to recognise and spell correctly any given oral expression, and GP decoding, or the ability to pronounce written sentences correctly. These phonics techniques, according to Nickels et al. (2013), concentrated on the prosodic emphasis of supra-segmental phrasing. Thus, in the terms of this trial, prosody is defined as a series of exercises (see appendix 3), which use the natural prosody of rhymes, songs or dictation to reinforce phonic patterns. These in turn, create Event Related Potential (ERP) events, which Nickels et al. (2013) among others, describe as being crucial to open neurological circuits for efficient learning. ERPs can be defined as neuro-imaging, which potentially show effective events/methods that could scaffold an individual's learning process. Finally, in the context of this trial, we define meta-cognitive phonics techniques as the concentration on exercises that teach phonics patterns rather than sight words (Khabiri, and Rezagholizadeh, 2014), so that the students, when taught for example, '-ment' or '-tion', would be able to recognise or even invent new lexis intuitively (see for example, Dickerson, 1975), rather than relying on memorized sight words. This would give classroom confirmation of Hensch's (in Bardin 2012) interpretation of how older students could overcome CPH barriers to learning by relying on cognitive reasoning rather than rote learning.

## Problems of apply phonics for L2 instruction

There are several possible explanations of why phonics-based approaches in L1 English teaching have not led to research in TESOL. Perhaps the most obvious is that L2 learners, especially at low levels, have much less English phonemic awareness than L1 primary learners. In particular the L2 creates interference patterns in their ability to decode English phonemes (Trofimovich & Baker, 2006). Using phonics to establish phoneme and grapheme decoding skills simultaneously is clearly very different from building literacy skills from already established L1 phonemic patterns. Therefore, our first task was to establish how and whether it was useful to translate typical PG/GP decoding skills from typical L1 phonics techniques into L2 teaching methodology in a TESOL classroom.

It is evident that GP correspondences in English are less overt than in other more transparent languages such as Spanish (Martinez, 2011)

and Italian, or even relatively closely related languages such as Dutch (De Graaff, Bosman, Hasselman & Veraven, 1999), which have simpler phoneme-grapheme correspondences. Martinez (2011), did show the advantages of using English L1 phonics techniques for Spanish TESOL learners. She found that for successful L2 acquisition, students used their own L1 phonics patterns, which coincided with English patterns. A secondary aim of our research was to discover precisely which phonics patterns should be taught to improve English orthography and pronunciation for Italian learners.

While the term ‘phonics’ is not common in TESOL literature, many important aspects of it have been dealt with comprehensively under other guises. Ur (2012) amongst others, very clearly recognized the importance of phonemic awareness and in particular decoding skills, in L2 language learning. There is some recognition of phonics in the TESOL literature (for example, Khabiri; Roqayeh Rezagholizadeh, 2014 and Johnson, R. C., Tweedie, G. R, 2010); it is however rarely considered a valid technique in itself. Other phonics-related research, is now dated (for example, Dickerson, 1975 and Wong, 1992) but did touch on elements such as prosody and decoding.

More recent work by Jenkins (2002), looked at the distinction between core and peripheral pronunciation skills, although this does not consider the importance of phonemic decoding. She pointed out that intonation and especially the use of schwa sounds is not always core for understanding. This may be so for general comprehensibility but overlooks the importance of the systematic nature (Ehri, 2001) of the GP decoding process. Interestingly, Venezky (1999), looked at the link between spelling and pronunciation, but still considered it as a separate written norm, not an essential part of the whole. Another interesting exception is Gardner’s (2008) discussion of phonics techniques in EAL (English as an Additional Language) lessons. She discusses the changes in the UK curriculum concerning languages, which we also consider, and shows how they transformed teaching practice in the US and the UK, as she notes –

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(phonics) “...*produced the transformation that here benefitted, the linguistic, sociocultural and cognitive development of learners, particularly EAL.*” (Gardiner 2008, p 263).

Our thesis is, if this is so for EAL (English as an Additional language) and L1 language learners, why is phonics not considered for L2 TESOL learners? Another secondary aim was to investigate the link between decoding skills and to explore whether they could improve L2 communicative strategies.

Finally, recent and pertinent neurological and psychological research has re-proposed the importance of both the cognitive and prosody-related aspects of phonics for L2 English learning. The neurologists Hensch and Bilihoral (for example, 2008) looked at neurological aspects of language learning in their work on the Critical Period Hypothesis (CPH). This has redefined the age-old linguistic problem of how languages are learned and offers glimpses of how learning problems may be overcome, even outside critical periods. This is best summarized by Bardin (2012) in an editorial in the journal *Nature*. The use of prosody, rhyme and music has been shown to switch on the neurological processes as also shown by Nickels, Opitz and Steinhauer (2013). They found in a class of adult German L2 English learners, that by creating Event Related Potentials (ERPs), neurological links were created that made L2 language learning easier. These findings are buttressed by the extensive work of the British neurologist Goswami (2004) and co-workers, who established the role of rhyme and music in overcoming dyslexia in L1 English speaking children. The psychologist, Suggate (2016) also considered the importance of phonics for the retention of reading capacity for children with learning disabilities. We believe that these inter-disciplinary insights, considering neurological and psychological data need to be tested empirically in a TESOL classroom in order to consider their full practical significance.

By using a quantitative approach, we aimed to establish measurable criteria, applied to a recognized TESOL certificate, in our case the Cambridge First Certificate exam (FCE). We also needed to eliminate as far as possible, any type-two statistical errors, i.e., bias between the content of the trial and control cohorts, bias in the teaching techniques and bias in evaluation criteria and marking. If we could establish that a phonics-based approach was at least as effective as a traditional exam preparation approach for the FCE, then we could look in more detail at the content and material of phonics in TESOL.

### **Review of the literature**

There are relatively few studies pertaining strictly to phonics in the TESOL literature, in a meta-analysis, Shanahan and Beck (2006) found 52 studies concerning phonemic awareness and 38 specifically on phonics instruction for L1 literacy. In contrast, they found only five empirical studies on phonics instruction for L2, all on reading skills, and no qualitative work. Since then (Suggate 2016), there has been some additional research which we will consider here. To fill this gap in the literature, we carried out an inter-disciplinary approach following

four basic streams: 1) inter-disciplinary work mainly from a medical (neurological, paediatric and psychological) perspective on language learning and language disorders, 2) phonics in the L1 literature and how it may relate to TESOL; 3) elements of a phonics and decoding in past TESOL literature, including prosody and meta-cognitive approaches; 4) research on decoding in L2 language learning.

### **Neurological and Psychological developments on language learning**

There has been some ground-breaking research on medical aspects of language learning that under-scores this trial. In particular, the neurological work of the Japanese American neurologist Hensch, summarized in Bardin (2012) on the ‘ungluing’ of the neural circuitry implicit in the CPH, fixed in childhood, is fundamental to understand the changes in conception of CPH for language learning. Hensch and Bilihorial (2008) previously showed how it would be possible to shift emphasis away from a simple linguistic approach to an abstract cognitive one as the receptive neurological window remains open longer. Thus, older students could benefit from the staggered opening and closing of their relative ‘critical periods’. Linguistically, Singleton and Muñoz (2009) and indeed Nikolov (2009) also noted the importance of CPH on various elements, (motivation, age group etc.). Interestingly, Zang (2009) in an article on semantic prosody also called for EFL educators to be instructed in semantic prosody and for it to be integrated into EFL curricula.

In another neurological slant on language learning, Nickels et al. (2013) looked at the effects of Event Related Potentials (ERP), neurological events which aid retention, on L2 acquisition. They show that prosodic activity neurologically ‘switches’ language acquisition on through ERPs, even in a classroom-only environment. They came to the conclusion that by using the advantages of prosody in learning, even older TESOL students could benefit.

Finally, in a series of significant neurological research studies, Goswami (2004), Huss, Verney, Fosker, Mead, and Goswami (2011) and Cumming, Wilson, Leong, Colling and Goswami (2015), look at the importance of rhyme and song on developing prosody in children with dyslexia. They showed that it may be an inability to recognize prosodic clues rather than ‘word blindness’, which is a cause of dyslexia, a factor which can be largely overcome by learning nursery rhymes and songs. Summarizing, both segmental and supra-segmental elements have been shown to modify the neuro-cortex that influences language learning.



## **L1 Phonics Literature**

Due to the vast depth of L1 phonics literature, we have been highly selective in the choice of many sources, considering here only a small selection of seminal work. Ehri, Nunes, Stahl and Willows (2001), established the fundamental link between grapheme and phoneme decoding and literacy, as did Byrne, Fielding and Barnsley (1989) and Kidd, Villaume and Brabham (2003). Furthermore, phonics instruction is not only explicit but also systematic. De Graaf, Saskia, Bosman, Hasselman and Verhaeven (1998) and Mesmer and Griffith (2005) looked at the importance of systematic and analytical phonics. They found that a systematic approach was more efficient than a random introduction of phonics patterns. We relate this systematic nature to an L2 environment where many phonics patterns are already established thanks to the subjects' L1 phonics patterns. However, in contrast to de Graaf, we recognize that 'systematic' in L2 phonics is fundamentally different to L1 instruction, based primarily on the interference between the English and Italian phonetic systems.

Torgerson, Brooks and Hall (2006), stated that systematic phonics training can benefit children at different achievement levels. We developed this insight here, as our cohort was older than a typical phonics cohort (i.e., early primary or even pre-school children). In terms of the actual methods used during instruction, Rasinski, Rupley, Nichols Christensen and Bowey (2005) proved instrumental in the choice of material. These authors looked at the link between phonics and fluency and in particular the use of rhymes and songs, an aspect well developed neurologically by Huss et al. (2011) and Cummings et al. (2015).

There has also been some specific work on decoding, relevant to this study. Morgan, Moni and Jobling (2006) look at the implications of using phonics for young adults with learning difficulties. The implications of their work is that phonics can be a valid technique for this age groups. Furthermore, Rasinki, Rupley and Nichols (2006), link the two basic elements of phonics and prosody, in their case, phonics and fluency as an element of reading and performing poetry.

## **Elements of Phonics in the TESOL literature**

As already mentioned, while the term 'phonics' is not common in TESOL literature, many important aspects of it have been dealt with comprehensively. As mentioned earlier, the link with phonemic awareness is amply explored by Ur (2012). However, this recognition

is not followed up by examining phonics in L2 teaching or any specific reference to PG decoding. Other research did explore other aspects related to phonics but these were generally before the full development of communicative language teaching developed in the 80's and 90's. This early work included, for example, the role of pronunciation (Dickerson, 1989) reading skills (Wong, 1992), the development of self-monitoring skills implicit in explicit/systematic phonics (for example in Firth, 1987) and prosody (Wang, 2009). Wong (1992) looked at spelling and generative phonology and made the connection between listening comprehension and reading, all are crucial in phonics.

The importance of self-monitoring and meta-cognition, emphasized by Morley (1991) and Hall, Myers and Bowan (1999), amongst others, could directly be considered an element of explicit phonics instruction. As mentioned earlier, Zang (2009) called for an integration of semantic prosody into EFL instruction anticipating Nickel et al (2013). Venesky (1999) also made the link between spelling and pronunciation. However, he still considered orthography as a discipline in itself rather than making the logical step of considering PG decoding as being a fundamental element of literacy. Ur (2012), states in no uncertain terms the importance of phonemic awareness and hence the need to empirically test a phonics-based course to evaluate its effects on phonemic awareness.

Finally, Kaushanskaya, Jeewon and Van Hecke (2013) looked at whether phonological familiarity exerted any effects on lexis **learning** for familiar versus unfamiliar referents and whether successful vocabulary **learning** is associated with an increased second-**language** experience. If decoding skills is based on the introduction of familiar references in word groups, then it follows that this could rationalize instruction for lexis learning. Another approach to pronunciation moved away from L1 pronunciation patterns to L2 user models (Cook, 1999:185). This is acceptable for L2 pronunciation models but does not recognize the affect that decoding patterns may have on production or on literacy skills. Here, we attempted to look at the link between decoding ability and general communication skills.

## **L2 Phonics research**

There has also been a limited amount of work on phonics in the L2 classroom. Jones (1996) pointed out the potential advantages of using phonics for L2 instruction, also illustrated in Heidi (2014). They both describe the basic similarity of L1 and L2 phonics instruction and the possibility of students benefitting from L1 instruction insights. Martinez

(2011) described the specific benefits of explicit and systematic TESOL phonics for Spanish speakers, particularly for literacy skills and reading comprehension. The difficulty her Spanish-speaking subjects had with long vowels is comparable with the problem our Italian students had with short vowels. This point was also developed by Helman (2004). Considering Spanish learners' pronunciation of English, he noted the importance of considering L1 interference (Helman, 2004). This would suggest that L2 phonics instruction involves discovering how an L1 may either interfere or aid PG decoding in English.

Certain L2 meta-cognitive studies suggest how phonics could be applied in TESOL. Samuel (2010) expands on the importance of meta-cognitive techniques and in particular conscious pattern-finding exercises. This approach is also shared by Gardner in what she describes as student 'experience and empowerment' (Gardner, 2008). Share (1999, 2001) also emphasized the importance of self-teaching, important in language learning and an essential aspect of phonics' patterns acquisition. Kahraman, (2012) showed the importance of pronunciation correction for L2 Arab speaking teachers and therefore GP decoding. Meta-cognition is also treated by Nishanimut, Johnston, Joshi, Thomas and, Padakannaya, (2013) who found that using L1 metalinguistic knowledge seemed to benefit literacy skills in English for ESL students. Finally, Pittman (2007) also noted a phonemic approach could overcome these difficulties with African American Vernacular English (AAVE) speakers, which would occupy the middle ground between L1 and L2 instruction. Finally, Alshaboul, looks at how L1 phonemic awareness relates to L2 literacy. In particular Alshaboul, Asassfeh, Alshboul and Alodwan (2014), investigate the difficulty that Arab speakers have due to L1 phonemic interference on reading EFL texts. They explain that the recognition process leads to slow and less accurate L2 lexical recognition.

## Methodology

### Study design

Our study design, a randomised controlled trial, directly compares a control and trial group of 17-18 year-olds during an extra-curriculum preparation for the FCE exam. The FCE exam was chosen because the teaching and testing criteria are well established and widely available and therefore both the experimental protocol and materials can be replicated. It is also an exam used by many schools internationally as a communicative adjunct to curriculum L2 English. Given our need for direct comparison, the Student 't' test was considered the most

appropriate statistical tool to show the significance between the delta of an initial test and final test after the teaching period. The deltas were compared to examine the relevance of orthography, pronunciation and a general oral skills test based on independent criteria, i.e., on criteria published on the FCE resources for the teacher web-site (Cambridge ESOL, 2016), that is criteria based on grammar, discourse, lexis and pronunciation. These comparisons would indicate whether phonics could be a valid tool for TESOL instruction. We then applied an ANOVA (Analysis of Variance) multi-factor analysis of the control and trial cohorts to find whether there was any relative advantage of the teaching techniques used. All statistic calculations used the applicative program (primer) *Statistica per Discipline Biomediche* - Stanton A Glantz, (Italian edition Adriano Decarli). Obviously, this would then need to be verified on a larger scale, precisely as occurred in the large L1 studies in the US and the UK (Ehri et al. 1999, Torgensen et al. 2008).

The study groups were initially between 17–24 (both trial n= 24 and control n=17), 17-18 year-olds from the same school, randomly assigned to each group by the school. There was a slight majority of female students and all students were pre-tested at B2 level, according to the Council of Europe criteria (2001), intermediate level. A level of B1 (lower-intermediate) or C1 (upper-intermediate) were considered exclusion criteria, although no students were excluded on this basis. Each student signed an informed written consent agreement, which explained the purpose of the research. As the study classes were optional, attendance was not compulsory and there was a certain degree of random dropout (final numbers: trial n= 23, control n=14). However, attendance remained high enough, especially for the trial group, to consider the results to be statistically robust. As Winter (2013) points out, it is not the size of the samples in these cases that is important when considering statistical relevance, but rather the avoidance of type 2 statistical errors, a point we explore in depth in the discussion.

Trial lessons consisted of 10 two-hour extra-curriculum sessions. All students followed their regular English lessons during class hours. These regular sessions generally followed a grammar-translation method with non-native language teachers concentrating principally on grammar, syntax, sentence level structure and literature. The students came from a variety of different classes and were randomly assigned to the trial lessons by the English teacher organising the course and the school administrative staff.

Both the trial and the control lessons were taught by two NS teachers. Both control and trial teachers had passed through the schools' selection process, had the same amount of experience teaching these courses. The difference in teaching materials was based on the type of lessons involved, principally phonics for the trial course and only exam practice for the control course. Thus, the content of the exam practice for the FCE exam included oral, listening and writing exercises, as well as recognition of exam procedures and mock exams. These exercises can be found in the text (Brook-Hart, 2008) used as well as from the Cambridge English ESOL web-site (2016).

In the trial class, phonics techniques replaced the oral exam practice components and consisted of at least 60 minutes of the two-hour lessons. It should be noted that all students were still given other exam preparation tasks. These included essay writing skills (paragraph writing and construction), sentence construction and exam procedure recognition. However, the main difference between the trial and control cohorts were the phonics techniques summarized in appendix 3. It should be noted that with the exception of the dictation exercises (a common technique for all students during curriculum lessons), there was no explicit instruction in orthography. We tried to assure that the testing material excluded any specific items that had been introduced during the trial class, so these students had no direct advantage in the orthography test. One exception was the word 'Love' for the vowel + 'v' group, a high frequency lexis, which should have been recognised by all students regardless of experimental group. Furthermore, both cohorts received approximately the same amount of time spent on the oral skills inherent in the pronunciation and interview FCE tests.

The general pattern of the phonics component of the trial lessons was as follows: Each lesson concentrated on one phonics pattern, for example the first being the CVC rule, consonant + vowel + consonant = short vowel. The patterns deemed to create problems for Italian learners had been identified in preliminary work at the school and can be summarised in table 1. Briefly, these areas were phonemic areas which differ from Italian to English, i.e. there was L1 interference in the decoding process. The students were asked to recognise the phonics pattern in question by using word games or other devices (for example, Pelmanism, word family recognition etc.) based on drilling the phonics pattern in question. Much of this material was very similar to the 'silly questions' material described by Gardiner (2008). The patterns were reinforced and peer corrected using either dictation or exercises the phonics text book used in class (Hornsby, Shear and Pool, 2007), or other reinforcing exercises, for example inventing words (De Graaff et

al. 2009), to strengthen meta-cognitive retention. Finally, an ERP was created either using pre-existing learning rhymes or songs (for example *'The digraph chant'*), or adapting other online material (for example, the adaption of the Beatles' song, *'All you need is Love'*). A full list of the material used can be seen in Appendix 3.

*Table 1.* Phonemic categories presenting problems for Italian L1 students

Short Vowels	Long Vowels	Digraphs	Consonants changing vowel sounds 'l', 'r' 'w'
Consonant – vowel+ consonant = short vowels	'-ight'	sh/ch/th-	'ar', 'ir- 'er', 'or- 'ur-
o+ve*, 'o+ th'	Double vowels 'oo' 'ee'..	-ng/-nk	'war-/'squa-'
Initial vowels	Two vowels together 'ai', 'oa', 'ea', 'ia'..	Grammar morphemes, -s/- ed/-er/-ing/'ve..	'wor-'
	Terminal 'e'	Etymological digraphs, ph-, th-..	'-lk', '-al'..

### Trial

There were three basic statistical tests in which improvements in the delta (difference between pre- and post-test scores) per cohort were first analysed individually using a Student 't' test and then compared to each other using an ANOVA analysis. The Student 't' test was the basic statistical test used, as we wanted to find the relative improvement of the trial and control groups, although the ANOVA data also measured cohort improvements relative to each other. The tests were sub-divided based on the principal phonics categories (short vowels, long vowels, consonant-plus-vowels, digraphs), we had previously identified as being the principal GP decoding problem areas for Italian speakers. These categories can be categorised as differences between English and Italian phonemes and therefore decoding and are not meant to be definitive but rather a start for possible future research into L2 decoding problem areas, although not restricted to Italian (Martinez, 2009).

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### Overall results

There were statistically significant improvements overall for both pronunciation and orthography for the trial cohort compared to the

control. These general improvements were concentrated statistically in two categories, long vowels and digraphs, with improvements in the other categories, which however were not statistically relevant. Thus, large improvements in long vowels ( $p < 0.000$ ) in the digraph category for both pronunciation and orthography) compensated for relatively weak results in the short vowel and the consonant-plus-vowel sections. These weaker areas were as much interest as the areas that did improve and will be subsequently analysed in detail.

The interview section also improved statistically significantly for the trial cohort compared to the control. This section was originally conceived to incentivise the students, by giving them a test more similar to the oral test in the final FCE exam. The test also highlighted the course content's relevance for general spoken skills. It must be pointed out that the general improvement was quite surprising as only the pronunciation category ( $p < 0.000$ ) of the four categories described in the Cambridge criteria was considered core to our phonics' instruction criteria. Only the grammar section did not improve significantly ( $p = 0.203$ ), with statistically significant improvements for discourse ( $p = 0.034$ ), lexis ( $p < 0.000$ ) and pronunciation ( $p < 0.000$ ). To understand these and to eliminate any statistical bias we need to look at the sub-categories for each test separately.

### **Orthography (phoneme-grapheme decoding)**

The orthography test consisted in an examiner reading out aloud twice, a series of 32 sentences, each of which contained three or four elements of one phonics pattern. The students were instructed to write these sentences down and urged to write what they had perceived, even if they felt they had not fully understood the sentence. This was important as we did not want the students to leave gaps whenever a group of phonemes was not recognised, but rather we wanted to see the students' perception of unfamiliar phonemes. Each of the 3-4 elements of the pattern had to be correct in order to score one point. The rationale of the marking system was to test recognition of phonics patterns rather than individual words. One correct word may have represented a learned 'sight word' (an individually learned word with no recognition of the pattern). Thus, the first eight sentences tested short vowels, the next group, long vowels and so on. It was important to perform the orthography test first, in order to introduce the lexis and context, thus aiding comprehension and giving a cognitive schemata for the subsequent pronunciation test.

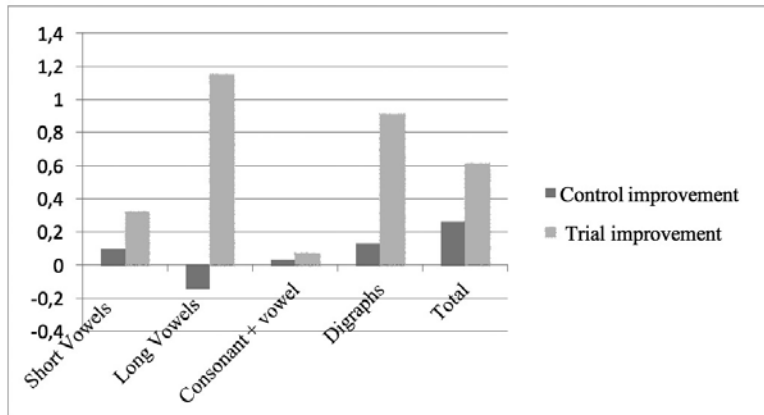


Figure 1. Cohort compared improvements in amounts of errors made (Orthography)

*Graph shows improvements (fewer errors) with the exception of the Long Vowel category in the control cohort.*

Improvements in the long vowel and digraph categories were statistically significant ( $p$  values both  $p < 0.000$ ). Indeed, there was no appreciable improvement at all for the long vowel section in the control cohort (+0.17 errors), underlining that generally spelling is a persistent and stubborn problem to overcome. We believe the improvement for the trial group was due to the recognition of the relatively simple morphophonemic patterns, the mainstay of phonics in L1 learning. The richness of material, even considering the obvious cognitive gap (the material was designed for 8-12 year old L1 learners, compared to our older cohort) also helped reduce the affective filter of the trial group making the whole course seem more 'fun'.

There was virtually no improvement in either cohort for the consonant-plus-vowel category (score +0.17). At the time of the study, we had no specific material to aid instruction so this category was introduced in a more traditional explanation-practice technique with no ERP inducing material. Subsequently, we found material for this category, which we intend to use in future research. It should also be noted that in L1 teaching these categories are systematically taught within a considerably longer time framework, whereas here, they were introduced as stand-alone lessons.



Table 2. Cohort compared improvements in orthography  
 All statistically significant ( $p < 0.05$ ) differences are shown in gray,

	<b>F (Anova)</b>	<b>t-test</b>	<b>P</b>	<b>Statistical significance</b>
<b>Short Vowels</b>	2.71	1.645	0.109	n.s.
<b>Long Vowels</b>	<b>20.13</b>	<b>4.486</b>	<b>0.000</b>	
<b>Consonants + vowel</b>	0.05	0.232	0.817	n.s.
<b>Digraphs</b>	<b>18.29</b>	<b>4.295</b>	<b>0.000</b>	
<b>Total</b>	<b>4.21</b>	<b>2.053</b>	<b>0.048</b>	

n.s. = not significant, statistical significance set at  $p < 0.05$

### **Pronunciation (grapheme-phoneme decoding)**

The pronunciation test consisted of each student reading sentences aloud, and was assessed on the same series of 32 sentences used for the orthography test. This test follows the Orton-Gillingham method (1997) (in De Graaff et al. 2009: 322-323) for testing pronunciation. There was an important exception in that we tried to give all words a context (that is they were given in sentences rather than individual words) and were chosen from lexis that the students' regular teachers had indicated should have been familiar and had been introduced during their regular curriculum lessons. This was important as it is generally recognized that it is difficult to pronounce unknown vocabulary or lexis out of context (Yule, 2010).

*Graph shows improvements (fewer errors) with the exception of the Long Vowel category in the control cohort.*

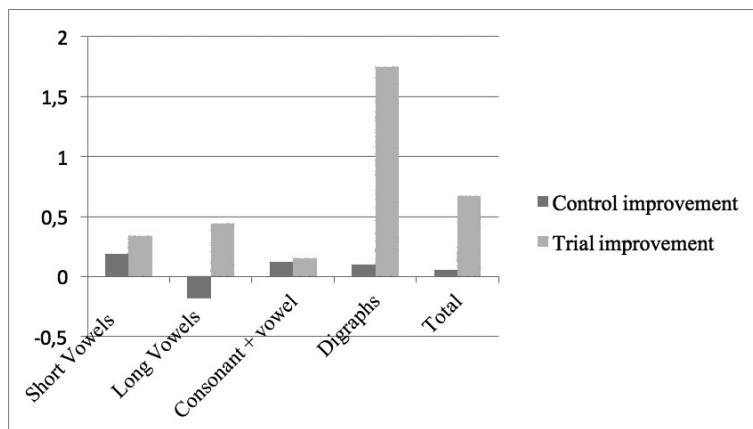


Figure 2. Cohort compared improvements in amounts of errors made (Pronunciation)

There was a statistically significant improvement for both long vowels and digraphs (both  $p < 0.000$ ). We believe that this was due to the large amount of material available as reinforcement (see appendix 3) and to the relative ease of relating to new grapheme representations (such as, /ð/, /θ/, /tʃ/, /ʃ/) which, although different in Italian, do not constitute a serious phonological problem. While short vowels did improve, they did not do so statistically ( $p = 0.283$ ). We believe that this may be due to the fact that the Italian vowel system does not have true short vowels but what can rather be considered allophones (especially the /i/, /ɔ/ and /u/) (see Italian phonemic chart, Appendix 1). The consonant-plus-vowel area also did not improve significantly. Again, during the trial we had had no access to additional ERP material, which we intend to include in the future.

Table 3. Cohort compared improvements in pronunciation

*Delta post – pre-test of Control and trial cohorts difference in number of errors.*

	F (Anova)	t-test	P	
Short Vowels	1.19	1.089	0.283	n.s.
Long Vowels	<b>6.01</b>	<b>2.452</b>	<b>0.019</b>	
Consonants + vowel	0.03	0.186	0.854	n.s.
Digraphs	<b>119.01</b>	<b>10.856</b>	<b>0.000</b>	
Total	<b>20.93</b>	<b>4.575</b>	<b>0.000</b>	

n.s. = not significant, statistical significance set at  $p < 0.05$

## The interview

The interview test was based on four categories outlined in the Cambridge syndicate's guidelines i.e., grammar, pronunciation, discourse and lexis. For our purposes, we were mostly interested in pronunciation and to a lesser degree lexis, due to the introduction of word families in the trial cohort. The other categories were not considered to be related to the trial methodology except in as much as they affected the overall significance of the test results. The interviews were shorter (between 3-5 minutes) than the actual oral tests carried out during Cambridge exams, although the criteria used were the same and both examiners were qualified and experienced FCE examiners. It should be noted that the interviews were not meant to replicate the FCE oral exams and cannot be considered a direct indicator of final FCE oral score. The marking system was expressed as a score from 1-5, divided into half points. So, unlike the previous two tests where the reduction in errors was counted, here, there was a positive score count.

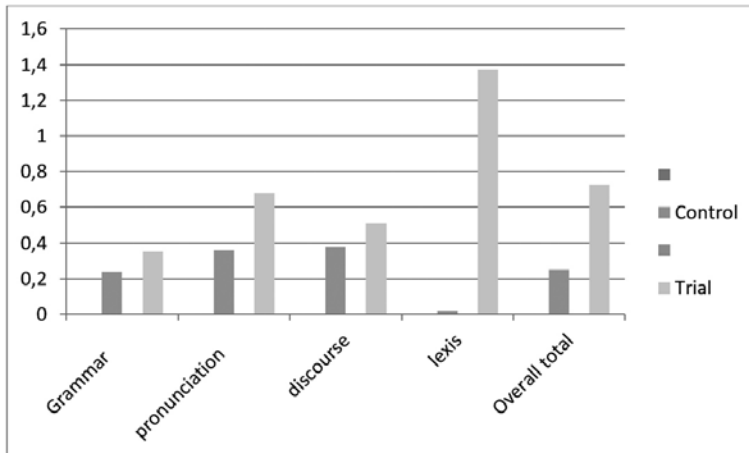


Figure 3. Improvement (average improvement in scores) for the Interview

The improvement in the trial cohort was statistically relevant for the overall score ( $p = 0.024$ ) and for pronunciation ( $p < 0.000$ ), discourse ( $p < 0.034$ ) and lexis ( $p < 0.000$ ), although not for grammar ( $p < 0.074$ ). As already mentioned, the improvement for pronunciation was the main category we were interested in. The improvement for the lexis group may have been due to the inclusion in the trial group of

teaching word families and word creation, typical phonics' exercises. Thus, once the construction of a suffix (or prefix) such as, for example, '-ment' or '-tion' were understood, then students could 'invent new lexis intuitively' (Dickerson, 1989). The improvement in discourse for the trial group is less easy to explain. Possibly, the emphasis of supra-segmental parsing as explained by Nickels et al. (2013) in prosody exercise, aided oral discourse. However, given that this category was not under examination here except as being part of the global interview score, we cannot make any assumptions about the efficiency of phonics techniques to improve discourse.

*Table 4.* Cohort compared improvements for the interview (ANOVA).

	F (Anova)	t-test	P	
Grammar	3.39	1.841	0.074	n.s.
pronunciation	37.83	6.151	0.000	
discourse	4.86	2.205	0.034	
lexis	518.31	22.766	0.000	
Total	5.59	2.364	0.024	

Improvement in score (1-5), n.s. = not significant, statistical significance  $p < 0.05$

## Overview

The results of the test clearly showed that the trial cohort improved in all three overall categories significantly more than a traditional, exam practice course of 10 weeks. Furthermore, long vowels and digraphs improved remarkably for both orthography and pronunciation, whenever abundant prosodic material was available. It was only the short vowel and consonant-plus-vowel categories, which did not improve significantly. The short amount of time available could explain our inability to statistically improve short vowel recognition due to the recognised problem for all L2 learners to improve allophone recognition and production. The consonant-plus-vowel category on the other hand was complex, had no readily available material on line to create ERP exercises and had relatively little time dedicated to it during the ten-week course. However, the difficulty of improving this area does emphasize even more the relative success of the other categories. It also poses the question of why certain areas improved considerably while others did not. We will now exam these differences.

## Discussion

We need to return to our primary objective to consider the implications of these results. As we noted, phonics and a prosodic approach to TESOL is not currently the object of widespread research, so many doubts remain concerning its efficacy or indeed theoretical base. Recent neurological research on the role of CPH (Bardin, 2012) and the opening of language reception windows, prosody for L2 classroom learning (Nickels et al. 2013) and prosody, rhyme and music (Cummings et al. 2015) in treating dyslexia, have established a theoretical base which could indicate an important role for phonics-based instruction in TESOL. Our primary objective was to relate these results directly to the TESOL classroom. If positive, we could move on to try to understand how phonics works in TESOL, how it differs from L1 phonics teaching and finally, what materials need to be developed to exploit any possible benefits of a phonics-based approach. This would need to be examined, in more extensive and intensive research than this current work was designed to fulfil.

Before considering the validity of these results, we need to examine the possibility of any type 2 bias in the statistical results, especially given the relatively small size of the cohorts involved. We therefore need to look at the study trial design to gauge whether these results are valid and what needs to be improved in future research. We will consider cohort composition, both teachers and students, the course content and finally the testing methods and variables.

## The classes

Both classes were of comparable age, sex, motivation and ability and had been randomised by the school before the trial began. While the randomisation process had not used computer-randomising programs, there is little reason to expect any bias in composition, as the school had no knowledge of the protocol or which cohort (control or trial) the students were assigned to. The trial teachers were of comparable experience and the only difference between the cohorts was the trial teaching material. The content of the control course was dictated by the content of the exam practice book and on-line material available (Cambridge ESOL, 2016) for the FCE exam. This material is considered standard and while the approach of individual teachers may differ, it can be considered the communicative-based norm for this type of examination preparation course. The trial-cohort lesson content is described in the methods section and is illustrated in appendix 3. The emphasis of the course was to introduce phonics patterns meta-

cognitively, allowing students to recognise the patterns and then create prosodic exercises as ERPs to reinforce retention (Nickels et al. 2013), or music as in Cummings et al. (2015). Any trial results should therefore be the result of the instruction techniques deployed.

### **The testing**

The aim of the pre/post-tests was to measure improvements in orthography and pronunciation (De Graaf et al. 2009), and in the interview, to test general oral skill improvement. Neither trial nor control cohort received any explicit advantage in these test items in terms of practice with the trial techniques. This is true with the possible exception of the following; 1) Dictation exercises (although not the tested items) are a very common technique in curricula courses so neither groups would have been at an advantage. 2) the control group did have more time to practice the interview section of the trial although the results did not show any appreciable advantage for the control group.

We did not follow-up the students to understand their real FCE results as their final result would have involved too many other variables to be relevant for this research. The variables, grammar and discourse, in the interview were not the subject of this research so we do not claim any relevance for these results except in as much as they affected the final interview score. The lexis category, although not central to this research, was introduced as a phonics exercise in trial classes due to the use of word family exercises and meta-cognitive word creation. The pronunciation category was central to the research.

### **The examiners**

The examiners were both qualified FCE examiners and therefore can be considered competent and appropriate for the task involved. They had no prior knowledge of the research protocol and were blinded to which students belonged to which cohort. The students they tested were randomised for both pre- and post-test, so neither examiner had either all trial or all cohort subjects (i.e., they were cross-tested). The interview was not a duplicate of the FCE but was a shorter interview based on personal information, which is available to the general public on the FCE website (Cambridge, 2016), so it cannot be claimed that the results would predict final FCE test results. The main criteria for the interview were to provide indications of general oral skills in terms of fluency and accuracy, not to duplicate FCE criteria.

## Trial results

The statistically significant results for all three categories, orthography ( $p = 0.048$ ), pronunciation ( $p < 0.000$ ) and the interview ( $p = 0.024$ ) would indicate that the phonics techniques used did achieve our objective of providing successful instruction in L2 orthography, pronunciation and general interview skills. This was not FCE specific, so therefore we believe that these techniques can be applied to other age groups and/or objectives. This would give us the opportunity to test phonics and prosody in other teaching environments or ages, and understand the wider significance of this approach. This is essential in applying the findings of Hensch and Bilihorial (2009), Nickels et al. (2013), Huss et al. (2011) and Cummings et al. (2015) in a TESOL environment and to test their efficacy.

The results of each of the categories, short vowels, long vowels, consonants-plus-vowels and digraphs, are also very interesting, as they give an insight into what worked well, and what still needs to be refined. The long vowel and digraph categories improved equally for both orthography and pronunciation, a result underlined by the statistical significance of the pronunciation category in the interviews. In both these categories, there was ample material available on-line, the prosodic material was simple, clear and effective and there was relatively little phonological difficulty for the subjects. Furthermore, during feedback, the students expressed the sentiment that they had become aware of simple language procedures for the first time. It was the importance of 'raising awareness' of phonics patterns that the students instinctively already knew, and subsequent reinforcing them with ERP material that seemed to have been most effective. Further qualitative data would be useful to understand how students perceived the tests.

The relatively small degree of progress in the short vowel and consonant-plus-vowel categories reinforces the importance of both meta-cognitive recognition of patterns and ERP reinforcing. The short vowel category is particularly important, as according to Crystal (1997: 216) a third of all English vocabulary includes the short vowel, consonant plus vowel plus consonant phonics pattern. While there was on-line material available for short vowels, the noted problem of allophonic interference from the L1 created a great deal of problems for most subjects. This was so especially for short vowels, /ɪ/, /o/, or /ʌ/, which are interchanged or difficult to reproduce for Italian L1 speakers (see Italian phonemic chart appendix 1).

For the consonant-plus-vowel category, for example, as in war, walk and work - /wɔr/, /wɔk/, /wɔk/, there were no simple patterns to follow and we used little on-line prosodic material, especially of the correct cognitive level (most material was designed for a younger age group). Clearly, both a didactic strategy and materials need to be developed to make these areas more accessible for most students. Furthermore, our subjects had passed the initial CPH peaks, especially after 14/15 years old, during which pronunciation drills would be more efficient. However, the fact that when the prosodic material was not available, this strategy was less effective would reinforce the neurological rationale proposed by Hensch (2008).

In comparison with the control cohort, we can say that the trial technique was more effective. According to the ANOVA tests, all areas improved more in the trial (overall results for orthography ANOVA F value 4.21, pronunciation, 20.93 and interview, 5.59) than the control, and were statistically significant for the long vowel and digraph categories. Given the short duration of the course, it would be difficult for control parameters to improve significantly whereas in the trial, subjects benefitted from the understanding of patterns rather than individually learnt sight words or practice. Indeed, given the emphasis on exam practice the control cohort actually had more exam practise, which was not reflected in their final scores.

### Conclusions

In a total final cohort of 38 high school students preparing for the FCE exam during a 20-hour preparatory course, the trial teaching methodology was shown to be statistically effective as a preparatory technique. In particular it was an effective means of improving orthography ( $p = 0.048$ ), pronunciation ( $p < 0.000$ ) as well as general oral skills ( $p = 0.024$ ) as proscribed by the FCE examination criteria. It was also statistically more efficient than a traditional exam preparation course, for (ANOVA F value) orthography = 4.21, pronunciation = 20.93 and general oral skills = 5.59. While the sample was small, the results were statistically robust and as far as possible, avoided statistical type 2 errors. We believe that the results could be the basis of more widespread phonics/prosody based empirical tests for a wider L2 population. Despite the efficacy of the meta-cognitive approach to teach phonics patterns for our older subjects, we would suggest that research is carried out on a younger age group (primary school) of L2 English learners to overcome phonologically difficult areas such as allophone recognition.



In general terms, we showed that within the scope of this trial, a relatively short twenty-hour teaching course did have significant results in improving not only PG and GP decoding skills, but also improved the FCE interview skills of discourse, pronunciation and lexis. This would indicate, if replicable on a large scale, that attention to L1 interference of phonemic recognition could make a significant impact in the English L2 learning classroom. Furthermore, this improvement was not linked to the relatively short learning window that phonics techniques are usually taught in the L1. By using the meta-cognitive ability as defined in this study of recognising phonics patterns, our 17/18 year olds significantly improved their L2 performance, even when linked to a general language test such as the FCE. Given the widespread nature of phonics L1 teaching, the decoding material used is both plentiful and free available on-line. The only real challenge is to adapt this material to a cognitively older age group. Thus, even a small amount of instruction in de-coding skills and attention to L1 interference can lead to significant improves, at least for languages such as Italian (and possibly Spanish), where English phonics patterns different considerably.

### **Research drawbacks**

As we have mentioned, the small size of the samples was the principal drawback of this study, especially for the control cohort (originally  $n = 17$ ). The dropout rate from the control reduced the power of the control's significance, although not that of the trial cohort results. Given that we aimed to test the viability of applying this method for other experimental settings rather than wanting to prove the general viability of the method, we believe that the sample was sufficient. We are presently working on classes with obligatory attendance, which would further alleviate this problem. According to Winter (2013), it is not the size of the sample which is crucial, but rather the avoidance of type 2 statistical errors which is the principal test of robustness. Here, our main concern was to eliminate these errors. The relative small size of the control group did not affect the efficacy of the trial techniques. The only factor that we believe could have negatively affected the results, was the relative efficacy of each of the teachers. In a larger study, we hope to be able to supply guidelines to other L2 teacher in order to eliminate this variable and test the hypothesis on a wider scale, excluding any teacher specific influence.

The repeatability of the techniques could also be a point of contention. The errors of trying to apply a universal standard was amply demonstrated in the controversy of applying L1 phonics

techniques in England after government intervention (Stuart, 2005) rather than relying on teacher interpretation of techniques as shown in the Clackmannanshire study (Ellis, 2007). However, we believe that the development of materials and the efficacy of prosodic ERP techniques as shown here, need to be understood fully in order to confirm the neurological findings in Hensch (in Bardin, 2012), Nickels et al. (2013), Cummings et al. (2015) and Huss et al. (2011). We therefore, intend to collaborate with Italian neurologists to verify the connection between prosodic material and ERPs to clarify this link. Finally, as noted, we fully intend both to develop new material and to use existing material for phonics ERP activity for future research.

### References

- Alshaboul Y., Asassfeh S., Alshboul A., Alodwan T. (2014) *The Contribution of L1 Phonemic Awareness into L2 Reading* > The Case of Arab EFL Readers, *International Education Studies*, Vol 7, N. 3
- Bardin, J. (2012). *Neurodevelopment: Unlocking the Brain*. *Nature*, vol. 487, 04 July 2012, 24-26.
- Brook-Hart, G. (2008), *Complete First Certificate*. Cambridge, Cambridge University Press,
- Cambridge English ESOL (2016) <http://www.cambridgeenglish.org/teaching-english/resources-for-teachers/> (retrieved 1/3/16)
- Chomsky, N. Halle, H. (1968). *The Sound Pattern of English*. New York, Harper and Row.
- Chu M-C., and Chen, S-H. (2014) *Comparison of the Effects of Two Phonics Training Programs on L2 Word Reading* *Psychological Reports*, Vol.114(1), pp.272-291
- Cook, V. (1999), *Going Beyond the Native Speaker in Language Teaching*, *TESOL Quarterly*, Vol. 33, Issue 2, pp. 185–209
- Council of Europe (2001), [www.coe.int/t/dg4/linguistic/source/framework\\_en.pdf](http://www.coe.int/t/dg4/linguistic/source/framework_en.pdf) (retrieved 1/3/2016)
- Crystal, D. (1997) *The Cambridge Encyclopaedia of Language*. Cambridge, Cambridge University Press.
- Cumming, R., Wilson, A., Leong, V., Colling, L.J., Goswami, U. (2015), *Awareness of rhythm patterns in speech and music in children with specific language impairments* *Frontiers in Human Neuroscience*, Vol. 9, Issue DEC, 22
- De Graaft, S. Bosman, A.M.T. Hasselman, F. Veraeven, L. (1998). *The Benefit of Systematic Phonics Instruction*, *Scientific Studies of Reading* 13(4) Routledge, 318 -333.
- Dickerson, W. (1975). *The wh- Question of Pronunciation. An Answer from Spelling and Generative Phonology*. *TESOL Quarterly*, 16(1), 71-77.
- Ehri, E. (1998). *Grapheme –Phoneme Knowledge is Essential for Learning to Read Words in English*, in Metsala, J. L., Ehri, L.C. (eds.) (1998). *Word Recognition in Beginning Literacy*, New York, Lawrence Erlbaum Associates, pp 3-40.

- Ehri, L. C. Nunes, S. R. Stahl, S.A. & Willows D.M. (2001). *Systematic Phonics Instruction Helps Students Learn to Read: Evidence from the National Reading Panel's Meta-Analysis*, Review of Educational Research, Fall 2001 71, 393-447.
- Ellis, S. (2007) *Policy and research: Lessons from the Clackmannanshire Synthetic Phonics*, Initiative Journal of Early Childhood Literacy December 2007 vol. 7 no. 3 281-297
- Firth, S. (1987). *Developing Self-monitoring Strategies* in Pavey and Ehrlich, S. (eds.) *The Teaching of Pronunciation*. TESL Tak 17. 148-152.
- Goswami U. (2004) *Neuroscience and education*, British Journal of Educational Psychology, vol 74, issue 1 pp 1-14
- Gardner, S. (2008) *Transforming Talk and Phonics Practice: Or, How Do Crabs Clap?* TESOL Quarterly: A Journal for Teachers of English to Speakers of Other Languages and of Standard English as a Second Dialect, 2008, Vol.42(2), p.261-284
- Hall, K., Myers J & Bowan H. (1999). *Tasks, Texts and Contexts: a Study of Reading and Metacognition in English and Irish Primary Classrooms*, Educational Studies, 25. pp. 311-325.
- Heidi H. (2014). *Why Phonics for ELLs?* <http://www.readinghorizons.com/webinars/why-phonics-for-ells> (retrieved 30/04/15)
- Helman L. A. (2004). *Building on the Sound System of Spanish: Insights from the Alphabetic Spellings of English*, Language Learners International Reading Association. pp 452-460.
- Hensch, T.K., Bilihorial P.M. (2012) *Manipulating Critical Periods for Brain Development* <http://dan.org/news/cerebrum/detail.aspx?id=39360> (retrieved 10/10/2015).
- Hornsby, B. Shear, F. & Pool, J. (2006). *Alpha to Omega*, Gosport, Heinemann.
- Huss, M, Verney, J. P., Fosker, T, Mead, N, Goswami, U. (2011), *Music, rhythm, rise time perception and developmental dyslexia: Perception of musical meter predicts reading and phonology*, *Cortex* Vol. 47, Issue 6, June 2011, pp. 674–689
- Johnson, R. C. , Tweedie, G. R, (2010) *Could phonemic awareness instruction be (part of) the answer for young EFL learners? a report on the early literacy project in Malaysia*, TESOL Quarterly, December 2010, Vol.44(4), pp.822-829

- Jones M.L. (1996). *Phonics in ESL. Literacy Instruction: Functional of Not?* – World Conference on Literacy, Philadelphia P.A. March 1996, 2- 18. [www.literacyonline.org](http://www.literacyonline.org) (retrieved 15/1/2015).
- Kahraman A. (2012). *Defossilization of /ae/ Phoneme Pronunciation of Non-native EFL Teachers*. Journal of Language Teaching and Research. Vol. 3 N. 3, 379-385.
- Khabiri, M., Rezagholizadeh, R. (2014) *The Comparative Effect of Teaching Spelling through Mnemonics and Phonics on EFL Learners' Vocabulary Achievement and Retention*. Theory and Practice in Language Studies, 01 July 2014, Vol.4 (7), pp.1463-1468
- Kaushanskaya, M; Jeewon Y & Van Hecke S. (2013). *Word Learning in Adults with Second Language Experience: Effects of Phonological and Referent Familiarity*, J Speech Lang Hear Res. Apr 2013; 56(2): 667–678.
- McDonald, Janet L. (2006). *Beyond the Critical Period: Processing-Based Explanations for Poor Grammaticality Judgment Performance by Late Second Language Learners*. Journal of Memory and Language, vol. 55 n.3, Oct 2006, 381-401.
- Martinez, A. (2011). *Explicit and Differentiated Phonics Instruction as a Tool to Improve Literacy Skills for children learning English as a Foreign Language*: Gist Education and Learning Research Journal, 25-49.
- Mesmer H. A & Griffith P L (2004). *Everybody's selling it – But Just what is Explicit, Systematic Phonics Instruction?* International Reading Association; The Reading Teacher, Vol. 59, No 4, 366-376.
- Ministero d'Istruzione dell'Universita' e della Ricerca'(2012) – *Indicazione Nazionali Infanzia e del primo ciclo definitiva*, [http://www.indicazioninazionali.it/documenti/Indicazioni\\_nazionali/indicazioni\\_nazionali\\_infanzia\\_primo\\_ciclo.pdf](http://www.indicazioninazionali.it/documenti/Indicazioni_nazionali/indicazioni_nazionali_infanzia_primo_ciclo.pdf) (retrieved 10/6/2017)
- Morgan M., Moni K. B., Jobling M. A., (2006) *Code-Breaker: Developing Phonics With a Young Adult With an Intellectual Disability*, Journal of Adolescent and Adult literacy, Volume 50, Issue 1 pp 52–65
- Morley J (1991). *The Pronunciation Component in teaching English to Speakers of Other languages*. TESOL Quarterly Vol. 25 N. 3 Autumn 1991, pp 481-520.

- Murphy J. (1991). *Oral Communication in TESOL: Integrating Speaking, listening and pronunciation*, TESOL Quarterly Vol. 25, pp 51-75.
- National Reading Panel Report NICHD (2000) *Teaching children to read. An Evidence-based Assessment of the Scientific Research Literature on Reading and Its Implication for Reading Instruction*. U.S. Department of Health and Human Services, National Institute of Child Health and Human Development, April 2000 <http://www.nichd.nih.gov/publications/pubs/nrp/Pages/smallbook.aspx> (retrieved 10/01/2015)
- Nickels, S. Opitz, B. & Steinhauer, K. (2013). *ERPs Show that Classroom-instructed Late Second Language Learners Rely on the Same Prosodic Cues in Syntactic Parsing as Native Speakers*. Neuroscience Letters 2013 Dec 17; Vol. 557 Pt B, 107-11.
- Nikolov, M. (ed) (2009) *The Age Factor and Early Language Learning*, Berlin, Walter de Gruyter,
- Nishanimut, S, P., Johnston, R, S., Joshi, R. M., Thomas, P. J. ; Padakannaya, P. (2013) Effect of synthetic phonics instruction on literacy skills in an ESL setting, *Learning and Individual Differences*, Oct, 2013, Vol.27, p.47(7)
- PISA (2015) *PISA 2015 Results, Excellence and Equity in Education*, Vol 1. pp. 145 -166 [http://www.keepeek.com/Digital-Asset-Management/oecd/education/pisa-2015-results-volume-i\\_9789264266490-en#page10](http://www.keepeek.com/Digital-Asset-Management/oecd/education/pisa-2015-results-volume-i_9789264266490-en#page10) (retrieved 15/10/2016)
- Pittman, R. (2007). *Improving Spelling Ability among Speakers of African American Vernacular English: An Intervention Based on Phonological, Morphological and Orthographical Principals*, available at The Office of Graduate Studies Texas University.
- Rasinki T., Rupley W. H., and Nichols W. D., (2006), *Two Essential Ingredients: Phonics and Fluency Getting to Know Each Other*, *The Reading Teacher*, Volume 62, Issue 3, 2008 pp 257–260
- Shanahan, T; Beck, I, L. (2006) *Effective Literacy Teaching for English-Language Learners*. In August, D. (Ed); Shanahan, Timothy (Ed), (2006). *Developing literacy in second-language learners: Report of the National Literacy Panel on Language-Minority Children and Youth*, pp. 415-488. Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers, xvi, 669 pp.
- Share D, L. (1999) *Phonological Recoding and Orthographic Learning: A Direct Test of the Self-Teaching Hypothesis*, *Journal of Experimental Child Psychology*, Vol. 72, Issue 2, February 1999, pp. 95–129

- Singleton, D. & Muñoz, C. (2008). *Around and Beyond the Critical Period Hypothesis* in Hinkel E. (ed.) (2011) *Handbook of Research in Second Language Teaching and Learning Vol 2*. New York, Routledge.
- Stuart M. (2005). *Education and Skills Committee Eighth Report: Witnesses Monday 15th November 2004*. London: United Kingdom Parliament, <http://www.parliament.thestationeryoffice.co.uk/pa/cm200405/cmselect/cmmeduski/121/12111.htm> (retrieved 10/12/2014); in Education and Skills Committee (2005b) *Teaching Children to Read: Eighth Report of Session 2004–5*. London: HMSO.
- Suggate, S, P. (2016) *A Meta-Analysis of the Long-Term Effects of Phonemic Awareness, Phonics, Fluency, and Reading Comprehension Interventions*, *Journal of Learning Disabilities*, Vol.49 (1), pp.77-96
- Torgerson, C. Brooks J. and Hall J. A. (2006). *Systematic Review of the Research Literature on the Use of Phonics in the Teaching of Reading and Spelling*, The Department for Education and Skills UK government Brief No: RB711, January 2006 <http://webarchive.nationalarchives.gov.uk/20130401151715/http://www.education.gov.uk/publications/eOrderingDownload/RB711.pdf> (retrieved 10/1/15).
- Trofimovich , P. Baker W. (2006) *Learning second language supra-segmentals: Effect of L2 Experience on Prosody and Fluency Characteristics of L2 Speech*, *Studies in Second Language Acquisition*, Volume 28 / Issue 01 / March 2006, pp 1-30
- Ur, P. (2012). *A course in language teaching: Practice and theory*: Cambridge, Cambridge University Press,
- Venezki, R . L, (1999) *The American Way of Spelling: The structure and origins of American English Orthography*, The Guilford Press, New York.
- Winter J C F. (2013). Using the Student's t-test with Extremely Small Sample Sizes, *Practical Assessment Research and Evaluation*, Vol. 18, N. 10, 1-12.
- Wong, R. (1993). *Pronunciation myths and facts*. *English Teaching Forum* Oct. 1993, 45-46.
- Zang, W. (2009) *Semantic Prosody and ESL/EFL Vocabulary Pedagogy* *TESL Canada Journal*, Vol. 26, Issue 2, 2009

## Authors

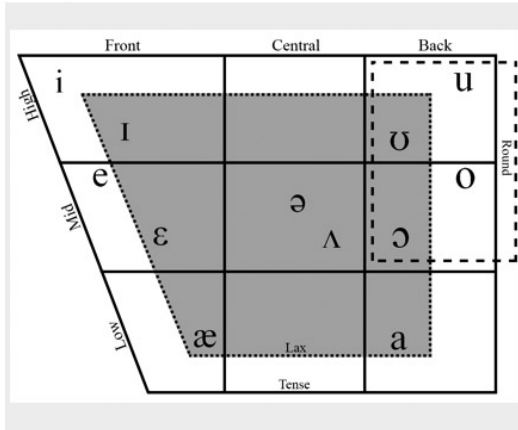
**\*Robert Coates** graduated from Edinburgh University, with a general arts degree followed by an M.A. in History, I subsequently gained an M.A TESOL from Sunderland University (UK) in 2014. I worked at Brescia University, initially in the Medical Faculty teaching medical English, where I started cooperating with various Medical Doctors in publishing articles in Medical journals as a Medical Writer. This led to my first ESP research area of Medical Publishing in English. My interest in using medical approaches to linguistic studies particularly for empirical research, stemmed from early interest. Subsequently, following my MA TESOL, I became interested in learning strategies both at schools and for older students. Given the widespread use of phonics for L1 teaching, I was particularly interested in the possibility of applying these techniques to L2 teaching, both for children and for older students. Again, contact with both psychologists and neurologist cultivated a strong interest in ‘cross-fertilized’ research, applying findings from medicine in linguistics.

**Judith Gorham** After graduating in Fine Art from Newcastle University. I took a PGCE before coming to Italy to teach at the British Council in 2000. I took the DELTA in 2002 and worked in the tertiary sector in Northern Italy. I have been teaching at Bocconi University for 15 years while currently finishing an MA in Education (Applied Linguistics) from the Open University. I am interested in Systemic Functional Linguistics and currently working on English as a Medium of Instruction in Italian Universities.

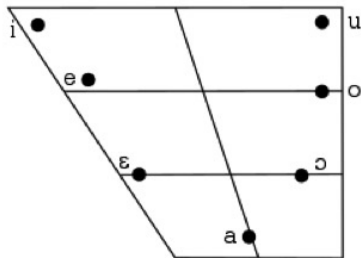
**Richard Nicholas** holds an MATESOL from University College London and teaches at the Università Commerciale Luigi Bocconi, in Milan, Italy. He has worked for over 15 years in the field of English language training, development and assessment. His interests lie mainly in the socio-economic and geopolitical relationships which influence the teaching of English as well as second language acquisition.



**Appendix 1.**  
**The English phonemic Vowel Chart**



**Italian Phonemic Vowel Chart**



## Appendix 2

### Pre and Post Tests

Calini Preliminary Language Test Phonics: Teacher's copy.

#### Short Vowels

/æ/ The **black cat** is sitting there next to her **bag**.

/ɛ/ **Let** me have a look at your **pet** dog. Can it **beg**?

/ɪ/ Please **sit** down here on the seat. There is a **bit** of cake and you can **sip** the water.

/ɑ/ What have you **got!** please don't eat it from the **pot** as it is very **hot!**

/ʌ/ The **rugby** ball is in the **tub**, can you take it to the **club**.

After v' /ə/ I do **love** wearing my **gloves** in winter, they're as hot as an **oven**.

before th' /ə/ and /ɑ/Mother and **father** sat together with their **brothers**.

/ɪ/ compared with /i/ You must always **sit** on your **seat**, see your shoes **fit** your **feet** correctly.

#### Long vowels two vowels

/i/ There is a lot of **meat** here. Take a **seat** and we can decide how to **eat** it.

/e/ The house was very **plain** and uninteresting. Its **main** attraction was its garden, which I'd like to see **again**.

/o/ Would you like to come on my **boat**. Don't worry it **floats** but you will need a rain **coat**.

/aj/ Last **night** I had a **fright**. I saw a **mighty** dog bite a man.

#### Double vowels

/ʊ/ **Look** out! You nearly put your **foot** onto my new **book**.

Magic 'e'

/e/ This is my **mate**. We were both very **late** last night and missed our train.

I /cons/ e /aj/ The sun **rises** at **five** in the morning. We can then **drive** in our car.

u/(con)/e / u / You must follow the **rules** and not be **rude** especially in **June**.

### Consonants and vowels and grammatical morphemes

/a:/-+ r /ɑr/ Shall we take the **car**? It's not so **far** but we can stop afterwards.

W +/o:/. /ər/ This **world** would be nice if we didn't have to **work** so much

/h/ The **Huntingdon Hotel** has a **horse** on a sign over the door.

/-ed/ He **studied** so much and **learned** so little because he **liked** to say he had **finished** the course.

/-er/ / ə / (schwa) Did you know that his **father** is a **computer** expert and his **sister** is a **teacher**.

/Wa/were/ -/ wə/**What** did you say they **were**? I said that one **was** a **wasp** not a bee.

/-ing/ / ŋ/ He was **singing** a tune and **playing** along while the teacher was **bringing** the class to an end.

/s/ - /z/ There are several **reasons** for why he **says** you want some flowers

### Digraphs and various blends or combinations

/Th/ / ð / **That** is **the** first question. You must **then** move to **the** second one.

/Th/ /θ/ **Thank** you very much for **thinking** about the **cloth** for the dress.

/sh/ /ʃ/ I **wish** you would **brush** the **shampoo** out of your hair.

/ch/ /tʃ/ There is an old **church**, where the **French** play **chess** in the afternoon.

/ph/. /f/ The **photographer** was taking pictures and **framing** them on the wall for the **physician**.

/wh/ /w/ **When** will we be able to **whistle** the new tune? **While** it is still winter I hope?

/ dʒ / You need a **sponge** to wipe down the mess made by the **orange**

/ ə / The **money** that the **company** raised was enough to go to **London**. (typical error)

. . . indicates tested lexis

## Calini Preliminary Language Post Test Phonics

### Short Vowels

/æ/ The **fat man** had a very impressive **lap**-top computer

/ɛ/ The **ten** stones were **set** in silver and belong to **Ben**.

/ɪ/ He decided **it** was a good **fit** for his thin build, so he bought the **pin**-stripped jacket.

/ɑ/ Can you **mop** the floor and **stop** complaining. Its **not** hard!

/ʌ/ It will be great **fun**! I don't want to **run** in so much **mud**.

After v' /ə/ We **discovered** a plane **above** us despite the cloud **cover**

Before th' /ə/ and /ɑ/Don't **smother** the taste, it will be a **bother** to make **another**.

/ɪ/ compared with /i/ You will **feel** the heat if you **hit** the cup too much. Just **fill** it please.

### Long vowels two vowels

/i/ It was a grey and **bleak** day on the **beach**, but we wanted to watch the **sea**.

/e/ The **train** was travelling fast across the **plain**, which we didn't do **again**.

/o/ There was a funny **goat**, which was eating **oats** and **moaning**.

/aj/ It was quite a **sight**! A **fight** between the black **knight** and a dragon.

### Double vowels

/ʊ/ What a **fool**! He nearly broke the **stool** by the swimming **pool**.

Magic 'e'

/e/ It was **fate** that she would be **late** and missed the main **plate** of the evening.

I/cons/ e/ aj/ You must **write** down your name to say your grandmother is **alive** and **smiles** a lot.

u/(con)/e / u/ You can take the **Tube** in London and **use** your ticket, it makes **pure** sense.

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### Consonants and vowels and grammatical morphemes

/a:/ + r /ɑr/ The **army** used a special gun so as not to **harm** the **shark**.

W +/o: /, /ər/ This **word** is **worth** a lot in the exam. It **works** a lot.

/h/ The **harm** that a **hamster** can do is more than **half** its value.

/ed/ He **showed** that he had **received** the box as it was **packaged** in plastic.

/-er/ / ə / (schwa) The **manager** helped me to show the **expert her** place.

/Wa/were/ -/ wə/It **was** a **warm** day so the **swarm** of bees moved towards the hive..

/-ing/ / ɪ/ The bell was **ringing** as he had **wrung** it with all his **strength**.

/s/ /s/ - /z/ **Stones** will help the **waves** break. The bygone then **crashes** on the beach

### **Digraphs and various blends or combinations**

/Th// ð / **There** was a difficult silence as **the** stranger **then** moved across the room.

/Th//θ/**Thanks**-giving is celebrated in **thirteen** states, **throughout** the world.

/sh/ /ʃ/ He was very **shy** but **silly**, **shameless** but not **stupid**.

/ch/ / / tʃ/ **Much** has been said about the **difference** between **chilling** wine and **cooling** it.

/ph/ / / f/ **Philosophy** was studied **previous** to **physics**, but after maths **preparation**.

/wh/ /w/ Can you tell me **whether** it will be good or bad and **when** the **weather** will improve?

/ dʒ / The cartoon character was bright **orange** and the shape of a square **sponge**.

/ ə / I thought the **honey** was well worth the **money** we spent in **London**.

### Appendix 3

#### Summary of Lesson Content with web-site addresses

##### 5. Summary of Lesson Content and web links in Appendix 3.

1. Short Vowels/CVC rule. Allophone recognition /difficulty to recognize/repeat as a contrast in following lessons (here contrasted to long CV pronouns). ‘Short vowel song’ Video posted to <https://www.youtube.com/watch?v=4TjcT7Gto3U> and <https://www.youtube.com/watch?v=hnVhx3vk1Jg>, simple and reverse dictations, students asked to write and then read their own dictations; peer corrected/teacher controlled
2. Long Vowels (contrasted with short vowels). Minimal pairs to underline difference/introduction of ‘magic e vowels – elicit rule. Word invention (included nonsense words). ‘Magic E song’ Video posted to <https://www.youtube.com/watch?v=bZhl6YcrxZQ> Long Vowels and double vowels (contrasted with short vowels (CVVC). Minimal pair games/ gap fillers / dictations Omega and Alpha. ‘When two vowels go a walking song’ video posted to (<https://www.youtube.com/watch?v=7fb3Pdt8kxg>)
3. Introduction: film *Daunbailò* (Down by Law) [Jim Jarmusch](#) (1986), Video posted to [https://www.youtube.com/watch?v=7rK3s\\_BP9kE](https://www.youtube.com/watch?v=7rK3s_BP9kE), elicit use of homophones (‘*I scream for Ice scream*’), pelmonism and elicitation of homophone categories – Peer correction to reinforce meta-cognitive approach, dictations.
4. V’ rule/ ou/ other long and short vowel contrasts. V- rule Silent approach (Mime followed by eliciting of rule followed by reinforcing the activity with Beatles’ ‘*All you need is Love*’, song, Video posted to <https://www.youtube.com/watch?v=CLEtGRUrtJo>.
5. Consonants: grammar morphemes -ing/-ed/-s/’ve/. To underline phoneme/grapheme correspondences. (Noughts and Crosses) – Peer review correction of pronunciation (and grammar use) – Students able to convert high degree of language use to phonics groups. Also limited use of phonetics (especially for -gn/ng) –activating grammar –translation knowledge to transfer to meta-cognitive rules. (introduction of schwa)
6. Digraphs, wh-/th-/gh-/kn-/ph- introduction again of homophones to create phonics patterns. Concepts of types of words e.g., wh-questions, ph –scientific various –gh for function words and adjectives. Peer reviews to create a meta-cognitive framework.

*'The Digraph Song'*. Video posted to [https://www.youtube.com/watch?v=bFQ2g\\_AZW4c](https://www.youtube.com/watch?v=bFQ2g_AZW4c)

7. Consonants changing vowels r- / w- Car/word/work/. Introduced from –gh digraph. Dictations from Hornsby-Students elicit rules. Recognition of word groups from FCE reading exercises.
8. Consolidation – creation of word family tables e.g., nouns: -ment, -er/or,-tion, -ology, adjectives: al/-ical, adverbs: – ly prefixes/suffixes for word recognition: pre-, un-, dis- etc.. Round of prosodic activities based on web phonics exercises:
10. Final test and individual feedback given to students.