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BOTTOM-UP THEORY AND PHONICS INSTRUCTION: IMPLICATIONS FOR BEGINNING READING

Eugenia Ada Amadi[i]
General Studies Division,
Enugu State University of Science and Techology Agbani,
Enugu State, Nigeria

Abstract:
This paper discusses the relationship of bottom-up theory to phonics instruction. It views reading as a learning tool that facilitates learning in other areas of study. Hence, it highlights the link between bottom up theory and phonics-based instruction as well as their relevance to beginning reading. The paper discusses bottom-up theory in relation to phonics reading instruction. Phonics is seen as a method that is based on the framework laid out in the bottom-up theory. The application of phonics to classroom instruction was also discussed. The paper concludes that phonics seems to be effective for beginning reading instruction. It suggests that teachers who use the method should monitor the progress of their students to know the ripe time to introduce other methods of teaching reading for effective reading instruction. It finally recommends that teachers should be trained on the proper use of phonics for effective reading instruction.

Keywords: phonics, bottom-up theory, early reading, reading instruction, analytic phonics, synthetic phonics

1. Introduction

Reading is a language skill that has an all-round effect in the life of an individual. It permeates all activities one can think of in human society. It is an emancipatory and developmental tool without which the world would have remained in the dark ages. The earliest man read letters/words inscribed on stones which later came to be written on scrolls and subsequently metamorphosed to print made available to us today. Researchers are agreed to the fact that reading is a learning tool. It facilitates efficiency and success in all school subjects. Lyons (2003) reports that children who do not learn to read are deprived of the ability and opportunity to learn Literature, Science, Mathematics, History and Social Studies because they cannot read grade-level textbooks. In effect, children who are unable to read in English may not be able to read

[i] Correspondence: email eugyamadi@gmail.com

and understand texts written in other subjects. And this may impede or limit their ability to make further progress in education.

When every aspect of human life is considered, the important role of reading ability cannot but be appreciated. The ability to read well gives one the opportunity to function effectively in daily activities, make great achievements in education, attain emotional and intellectual freedom and have balanced personal and social stability. Despite the obvious importance of reading, evidence abounds to indicate that quite a number of children are still unable to read. This has been of persistent concern to researchers, scholars and educators. The lingering problem of poor reading ability among primary school pupils has generated researches on theories of the reading process as well as methods for effective reading instruction. One of such theories is bottom-up theory which is often associated with phonics instruction.

Bottom-up theory views reading as a process of assessing information in a serial and sequential manner. Information is processed from low-level sensory input to meaning via a number of high-level activities. Its focus is on how readers process the printed text from the lowest linguistic unit of grapheme-phoneme correspondence to the highest linguistic unit of meaning. Phonics on the other hand is a method of instruction that teaches the graphemes of a written language in relation to the phonemes of a spoken language and how it can be used to decode unfamiliar words and spell effectively (Amadi, 2018). The method teaches reading in a sequential and systematic manner. It is generally used in early reading instruction. Early reading can also be referred to as initial or beginning reading. It covers the period of pre-primary and primary education. Beginning reading is very crucial to reading education because it is a stepping stone to further reading (Amadi, 2011).

Beginning reading is of interest to researchers because a house built on faulty foundation will surely collapse. Hence, a child who has foundational problems in reading may find it difficult to make a headway in further educational endeavour. Lyons (2003) notes that by the end of first grade, children who have difficulty learning to read begin to feel less positive about their abilities than when they started school. Little wonder Tyner (2009) reiterates that teachers are passionate about Beginning reading because they know that it is the cornerstone upon which knowledge, self-esteem, and future educational opportunities are built. To inculcate a firm foundation of early reading ability and efficiency in reading skills in children, there is need to examine relevant theories and methods that will enhance effective teaching and learning of reading, hence, the need for this study on the relationship of bottom-up theory to phonics- based reading instruction.

2. Bottom-Up Theory

Bottom-up theory is also referred to as a data-driven process. It conceptualises reading as an act that begins with the processing of visual input in terms of the information displayed in a text. This processing moves from the lowest linguistic unit to

understanding of the author's message. In other words, a reader decodes sounds, words, sentences and paragraphs based on the visual input represented by the letters of a written language. Reutzel and Cooter, (2005), opine that bottom-up theory hypothesizes that learning to read progresses from learning parts of language to understanding whole texts. Hence, the models of the reading process developed by the proponents of this theory emphasize the printed text and depict reading as being driven by a process that ends in meaning. The theory also depicts the processes that take place during initial or early reading. Gough (1972), one of the proponents of the theory developed a linear model of the reading process which portrays reading as a sequential or serial mental process. According to Alvermann, Unrau and Ruddell (2013), the model depicts a process that begins with low-level sensory representation in form of letter input and progresses through phonemic and lexical-level representation to deeper structural representation. In other words, during the reading process, information enters into the reader's visual system in form of graphemes (letters) which are articulated as phonemes (sounds) and recognized as words that in turn facilitate understanding of the message encoded in the text.

Purcell-Gates' (1997) analysis of the model, reveals that reading begins with letters being recognized first feature-by-feature through a visual system and transferred to a phonemic system for recognition. The recognized words are kept in the working memory to be processed and understood as sentences and definitely, as texts. Gough's reading model progresses through three levels of information processing. At the first level, the reader receives graphemic information via the visual system, converts the letters to sounds bit by bit and transfers them to the second level where sounds (phonemes) are converted to individual words. These words are transferred to the third level where meaning is absorbed into the knowledge system. Information is thus harnessed and transformed from low-level sensory input to meaning via a number of high-level sensory activities.

LaBerge and Samuel (1974) also developed another popular model which is as well a process and data-driven model. Their work on automatic information processing or automaticity deals with the ability to perform a complex task quickly with less attentional resources (Penner-Wilger, 2008). The model likens the human mind or brain to a computer that has the capacity to perform multiple tasks at the same time but has limited ability to attend to all the tasks simultaneously. In other words, the human mind (brain) is limited in its attention capacity. Hence, for one to be able to accomplish two complex activities at the same time, he must have become efficient in the skills involved. In LaBerge and Samuels' application of automaticity to the reading process, it was observed that word recognition and decoding are basic skills needed for the later work of comprehension. Both decoding and comprehension are complex tasks that need the attention of the reader. In children learning to read, the task of decoding draws much of their attention capacity, thereby leaving less resource for comprehension.

However, through constant practice in sounding out or letter-sound correspondences, readers become automatic decoders who are able to recognize words

without stretching much of their attention. When children become automatic in decoding, they apply their available attention for the task of comprehension, and active monitoring of their own-reading. Comprehension is therefore made possible when readers no longer focus much of their attention on decoding and word recognition. According to Penner-Wilger (2008), decoding has a reciprocal relation with comprehension. Hence, comprehension can bring about easy decoding when reading takes place in an area of competence and vice versa.

The proponents of bottom-up theory maintain that reading progresses from low-level information processing to high-level processing in a sequential and serial process. They hold that information is received and processed from the smallest linguistic units ranging from sounds to letter-blends, words, phrases, clauses and sentences to the bigger task of meaning. So, beginning readers are required to acquire a set of sub-skills that lead to the development of comprehension ability which will subsequently transform them to skilled and fluent readers. Reutzel and Cooter note that teachers who believe that bottom-up theories fully explain how children become readers often teach sub-skills first before other reading skills. Their reading instruction begins with the introduction of letters and sounds, pronunciation of whole words, and then connecting word meanings to comprehend texts. By implication, such teachers use phonic skills to facilitate comprehension of text.

Bottom-up theory was criticized for being linear and one directional that is, processing information from lower-level processes to high-level unit only. It did not give room for changes that may occur at low-level processing unit as a result of influences from high-level processes. It was further criticized for failing to explain the effects of the importance of 'meaning' in reading. Despite the criticisms and limitations, Hassan (1999) buttresses that bottom-up models cannot be ignored since they provide a sound basis for the reading processes of poor or beginning readers who are solely dependent on low-level processing.

2.1 Concept of Phonics in Reading Instruction

The use of phonics for reading instruction dates back to the 19th century with a lot of improvements in its use over the years. It has received a wide range of attention from researchers in different parts of the world. No wonder, United Kingdom's House of Commons Education and Skills Committee, (HCESC, 2005) reports that phonics has increased in popularity as a method of teaching in recent years. It notes that phonics emphasises the need for establishing a secure correspondence between written letters and sounds of a language in the learner's mind.

A lot of studies have been conducted with regards to the use of phonics for beginning reading instruction. Different scholars have also expressed their views on what phonics is. Memser and Griffith (2006) view phonics from a dual perspective. The first perspective portrays phonics as a system for encoding speech sounds into written symbols. This corroborates Venezky's (1999) earlier assertion that phonics describes the letters or symbols used to encode a language's spoken components. Hence, phonics can

be seen as a mechanism for establishing and indicating a relationship between spoken and written language. The second perspective links phonics to educational practice. Phonics is thus defined as an instructional method of teaching learners the relationships between letters and sounds and how to use it to recognize words (Adams, 1990; Mesmer and Griffith, 2006).

Phonics as an instructional method exposes children to the knowledge of the correspondence between sounds and letters and how to apply this knowledge to reading and spelling. It is a method of instruction that teaches the graphemes of a written language in relationship to the phonemes of a spoken language and how it can be used to form words to enhance effective and fluent reading. Research findings indicate that phonics is an effective methodology for teaching children to read (National Reading Panel, 2000; HCESC, 2005; Mesmer and Griffith, 2006). It exposes children who are learning to read in English to quite a number of English orthography which helps them to master a number of spelling patterns in English. This facilitates their reading process and helps them to become fluent readers.

Phonics can be taught systematically or incidentally. When taught systematically it covers all forms of grapheme-phoneme correspondence presented in a sequential manner. It takes into consideration short and long vowels, vowel and consonant diagraphs such as oi, ea, sh, th as well as blends/combination of letter-sounds that form longer subunits in words like onsets and rimes. In teaching phonics incidentally, the teacher highlights phonic elements as they appear in a text, (NRP, 2000). The National Reading Panel concludes that systematic phonics instruction is appropriate for routine classroom instruction. A number of approaches can be used to teach phonics. These approaches include analogy phonics, analytic phonics, embedded phonics, phonics through spelling and synthetic phonics. They are also referred to as types of phonics (NRP, 2000). HCESC (2005) refers to them as the different variations of teaching phonics. These different variations are further grouped into two major variants; analytic phonics and synthetic phonics (Johnston and Watson, 2005). Phonics can therefore be taught by either the analytic approach or the synthetic approach.

2.2 Analytic Phonics

The use of the analytic phonics approach in teaching reading is more predominant in the United Kingdom (UK) (Johnston & Watson, 2005). Analytic phonics is an approach of teaching reading without emphasizing the pronunciation of phonemes associated with particular graphemes in isolation. Johnston, MacGeown and Watson, (20011) refer to it as a mixed method approach because it deals with helping children to analyse letter-sound correspondences in already learned words to avoid pronunciation of words in isolation. Letter-sounds are taught in the context of whole words or after reading have begun. Hence, it is an approach that is used to teach grapheme-phoneme correspondence after children have been introduced to the knowledge of high frequency words. The teacher presents whole words and then guides the children into the knowledge of letter-sound patterns in the English spelling system. Children are

guided to analyse the common phonemes in a set of words that contains the phoneme under study (Torgerson, Brooks and Hall, 2006). The teacher and the pupils may for instance analyse the similarities in the following words: 'bat', 'back', 'bush', and 'bell'.

Analytic phonics approach is usually started at the end of the child's first year at school or at the start of the second year (Johnston, McGeown and Watson, 20011). In other words, the approach is meant to start by the third term of the first year or the first term of the second year of Nigerian primary education system. After being introduced to sight words, children are guided to recognize letter-sounds at the beginning, end and medial positions of words in print. At this stage, they may also be taught how to decode printed words by combining letters and sounds in all positions of the word especially after it has been pronounced.

The approach was criticised for not being in line with the growing move towards child-centered education. It did not seem to agree with earlier theoretical works that encouraged teachers to tailor their teaching of reading and writing towards the individual child's learning rate (Johnston and Watson, 2005). In effect, the approach makes learners to be over dependent on the teacher. The approach was also criticized for encouraging rote learning as it was taught without exposing children to reading of meaningful text. The irregular spelling pattern in English also seems to render the use of the approach ineffective. This is because the twenty-six (26) letters of the English alphabet do not have a one-to-one correspondence to the phonemes of the language. Hence, some words cannot be correctly spelt using analytic phonics approach.

2.3 Synthetic phonics

Synthetic phonics approach draws from the belief that the child should be taught some letter-sound correspondences of word elements before beginning to read (Bond and Dyskstra, 1967). Johnston and Watson (2003) note that it is an accelerated form of phonics that does not involve teaching children initial sight vocabulary. It is used to first teach children letter sounds relationships before they are introduced to the reading of real books. Ehri, Nunes, Stahl and Willows (2001) opine that synthetic phonics is used to systematically and sequentially teach children the correspondences between graphemes and phonemes of the language and how to use them to decode unfamiliar words through sounding out the letters and blending them. In corroboration with this, Torgerson, Brooks and Hall (2006) refer to it as an approach that teaches the pronunciation of sounds associated with particular letters and how to blend them. Thus, synthetic phonics is a method of teaching reading that involves teaching children how to sound-out the letter-sound correspondences in a language in isolation and how to co-articulate or combine them to form words and decode unfamiliar words.

Synthetic phonics is generally taught before children are introduced to books or reading (Johnston and Watson, 2003; Johnston and Watson, 2005). It is supposed to be introduced right from the start of the child's first year in school, that is, by the first term of primary one in Nigerian educational system. With this approach, children are first taught some set of letter-sounds and then guided on how to blend them to decode

unfamiliar words. Afterwards, other sets of letters are taught and the children combine or articulate them to form new words. Literature has shown that synthetic phonics is the most effective way for teaching beginning reading. It helps children to master how to construct or generate the pronunciation of words for themselves. Children are able to decode unfamiliar words they come across in a text by themselves without the guidance or assistance of the teacher. In effect, it may be said that synthetic phonics approach promotes child-centered learning which de-emphasises over dependence on the teacher. Synthetic phonics is expected to favour all categories of learners.

The National Reading Panel (2000) reports that systematic synthetic phonics programme prove to be effective with children of different ages, abilities and socio-economic backgrounds. Thus, Children seem to make substantial improvements in the ability to read words which leads to significant gains in text processing when this method is used for classroom instruction. The approach also enhances the ability of good readers to spell across all class categories.

One criticism leveled against the use of synthetic phonics for teaching initial reading is the problem of the irregularity in English spelling which may pose difficulty in sounding and blending of letter-sounds. Dombey (2006) observes that inconsistent grapheme-phoneme connection may expose children to having specific problems with reading irregularly spelt words. However, the one route connectionist models of reading championed by Seidenberg and McClelland (1989) claim that irregular words contain regular elements that will assist pronunciation. It stresses that even irregular words such as “yacht” contain information about pronunciation. Hence, it can be said that synthetic phonics approach to reading instruction may not lead to so severe an impairment in the reading of irregular words. The method seems to be all inclusive.

2.4 The Relationship of Bottom-up Theory to Phonics

Bottom-up theory seems to be the backbone upon which phonics method is built irrespective of thephonic variant involved. Phonics-based instruction teaches children systematically and sequentially to use the letter-sounds of a language to decode unfamiliar words through sounding out and blending of such letter-sounds. The instructional pattern of phonics follows a sequence as depicted in the bottom-up models of the reading process. The sequence covers all grapheme-phoneme correspondence ranging from short and long vowels, vowel and consonant digraphs, blends of letter-sounds, decoding of sounds to recognising unfamiliar words, combination of words to form sentences and then comprehension of texts. Phonics, thus, presents reading in a linear process such that readers are taught to decode text word by word, connect words to form phrases, clauses and then sentences.

Phonics is also the most suitable method for beginning readers who may not be able to process information from high-level sensory information unit. The low-level information processing depicted in Bottom-up theory is most relevant for reading since children can only be fluent or skilled readers through the mastery of basic reading skills of decoding, word recognition, fluency and spelling which subsequently aid

comprehension. Phonics is used in guiding children learning to read to be automatic in these skills so as to have enough time to spend on comprehension skill. Phonics as a word recognition tool provides children with a temporary strategy for recognizing words. It focuses the learner's attention to the configuration of letters that make up individual words. This helps them to acquire and store information about spelling of individual words. Hence, Chall (1996) reports that phonics teaching produces readers who have an advantage in word recognition and by the end of second grade also have higher levels of comprehension and vocabulary than children taught with other methods.

Bottom-up theory has much to offer to early reading as it hinges on the basics of reading that facilitate comprehension. It provides a sound platform for the reading processes of beginning or struggling readers. Phonics is as well a method that can be introduced early enough in the teaching of reading. It can usually be introduced right from the beginning of the child's first year in school. During this time, children are taught some set of letter-sounds and then guided on how to combine them to pronounce and form words. This is usually done early enough before they are introduced to the reading of real texts. This enables them to decode unfamiliar words in texts without being assisted by the teacher. Phonics is of benefit to children from kindergarten to primary six and those at the verge of reading failure.

Bottom-up theory equally presents the reading process in a serial and sequential manner. It presents the textas a visual input that captures the printed letters which are sounded out, blended, and subsequently articulated and combined to form words. The words are processed in a linear form via phrases, clauses, sentences and then meaning which is the main goal of reading. Text processing thus begins with the lower task of blending letter-sounds to the higher task of comprehension. Hence phonics is a reading approach that takes its root or emanates from bottom-up theory.

2.5 Applying Bottom-up based Phonics instruction to Beginning Reading

As earlier noted, bottom-up theory covers reading that takes place at the early stages of the educational process. Phonics is also an instructional method that teaches beginning reading skills. Such skills include word recognition, decoding, fluency and spelling. To teach these skills effectively, the teacher may have to conduct his lesson in two stages. The first stage should cover pre- grade one that is pre-primary one. During this time, the child must have mastered the alphabetic system of the English language but has little or no knowledge of the connections between letter-sounds and how to use them to form words. At this point, the teacher can move on to the second stage which should begin at the start of grade one or primary one.

Following the instructional pattern laid out in bottom-up theoretical framework, the teacher can use phonics method to expose the children to all grapheme-phoneme connections in words. If the teacher prefers to use the analytic phonics mode, he can first introduce learners to letter- sounds in words with similar initial letter-sounds. The teacher can write out such words as 'cane', 'can', 'cap', 'cake', 'car', 'cat' and draw the

children's attention to the similarities in the initial letter-sounds. After this has been learned, attention can be shifted to similar letter-sounds at the end of words, such as the 't' in 'fat', 'cat', 'rat'. After this has been mastered, the teacher can then teach them to articulate letter-sounds in the middle of consonant-vowel-consonant (CVC) words, such as the 'a' in 'bag', 'rag', 'pat', 'cat', 'fat', 'hat'. Letter-sounds in all positions of words should be mastered before the teacher moves to how to sound and blend the consecutive letters in unfamiliar words.

The teacher can also teach the pupils how to blend initial consonant clusters in words such as 'pl', in plan 'br' in broom, 'bl' in blow, 'cr', in creep, 'sp' in spit. After this has been mastered, he can move to teaching the pupils how to articulate the letter-sounds in final consonant clusters such as 'nt' in ant, 'paint', 'sk' in 'flask', 'ask', 'st' in 'lost', 'post''. Subsequently, how to blend vowel and consonant diagraphs such as 'ee', 'oo', 'ch', 'ng', 'sh', and the silent 'e' in words such as 'fake', 'take', 'silence' etc should be taught. This will bring the first stage to an end.

However, if the teacher prefers to use the synthetic phonics mode, he will first introduce the children to the first group of letter-sounds that can be used to form more three letter words than any other six letter-sounds. He may write out such letter-sounds as 's', 'a', 't', 'i', 'p', 'n' and teach them how to blend and combine them to form words such as 'sat', 'pat', 'tap', 'pan', 'sit', 'tin', 'pit', 'pin', 'sip'. After the pupils have mastered these, the teacher can gradually guide them to master all the forty-two (42) letter-sounds of phonics. The teacher can also guide the children on how to use magnetic letters to form words. He should guide them on how to blend and form words while pushing magnetic letters together. With this, children are able to pronounce, spell and form words by themselves. After this, the teacher can introduce the children to the reading of real books. Having mastered the act of sounding out and blending letter-sounds, children can now use the knowledge to recognize and decode words in texts. This helps them to read fluently with accuracy and speed which also facilitates comprehension of texts.

3. Conclusion and Suggestion

Reading is the tap root of all programmes in the educational system in particular and the society at large. Due to the dicey position it occupies, inculcating it early enough in children becomes paramount. Effective teaching and learning of reading may only be achieved when instructional methods are based on theories that effectively express the processes that take place during the reading process. Bottom-up theory views reading as a process that takes place in a straight line mode beginning from the lowest linguistic processing unit to the highest processing unit. It seems to be more concerned with beginning reading processes. The strategies involved in phonics instruction seem to be directly linked to the theory. Hence, teachers who are interested in early reading, are success expected to use the method effectively.

However, relying alone on the method may not necessarily produce the expected result particularly at the higher stages of the reading process. Teachers who use the method are expected to do so bearing in mind that other methods that take care of what happens at the higher levels of the reading process can be introduced to supplement phonics as the students make progress. Because of the obvious relevance of phonics to foundational/beginning reading, it is suggested that in-service and pre-service teachers be trained on phonic skills, and how to use them for effective teaching and learning of reading. The use of the method should also be encouraged especially at the lower primary/grade level.

About the Author

Eugenia Ada Amadi holds a Ph.D in Language Education /English. She is a lecturer at the General Studies Division, Enugu State University of Science and Technology, Agbani, Enugu State. She has a passion for language studies, reading education (particularly beginning reading), and teaching and learning of English as a second language.

References

Adams, M. J. (1990). *Beginning to Read: Thinking and Learning about Print*. Cambridge, MA: MIT Press

Amadi, E. A. (2011). Reading instruction in Nigerian primary schools in the current global economic realities. *African Journal of Historical Sciences in Education. 7*(2), 38-44.

Amadi, E. A. (2018). *Effects of two phonics instructional methods on primary school pupils' achievement and interest in Reading.* (Unpublished doctoral dissertation). University of Nigeria Nsukka, Nsukka.

Alverman, D. E. Unrau, N. J. and Rudell, R. B. (2013). Models of reading and writing process in Alverman, D.E, Urau, N.J and Ruddell, R.B (eds). *Theoretical Models and Processes of Reading 6th ed*. International Reading Association

Bond, G. L. and Dykstra R. (1967). The cooperative Research program in first-grade reading instruction. *Reading Research Quarterly*. 2(4) 5-142.

Chall, J. S. (1996). *Learning to Read: The Great Debate 3rd Edition.* New York: Harcourt Brace College Publishers.

Ehiri, L. C., Nunes, S. R., Stahl, S. A. and Willows, D. M. (2001). Systematic phonics instruction helps students learn to read: Evidence from the National Reading Panels Meta-analysis. *Review of Educational Research*. 71(30), 393-447.

Gough, P. B. (1972). One second of reading. In J. F. Kavanagh and I. G. Mattingley (eds) *Language by Ear and by Eyes.* Cambridge: MIT press

Hassan, F. (1999). *Language, Reading, Discourse and Meta cognitive influences on the Reading Strategies of Malaysian secondary school children in L1 and L2.* (Unpublished doctoral dissertation). The University of Manchester.

House of Commons Education and Skills Committee (2005). Teaching Children to read – Eight Report of Session 2004-05. London: The Stationary Office Limited.

Johnston, R. S., McGeown, S. and Watson, J. S. (2011). Long – term effects of Synthetic versus analytic phonics teaching on the reading and spelling of 10-year-old boys and girls.

Johnston, R. S. and Watson, J. E. (2003) Accelerating Reading and spelling with synthetic phonics: A five year follow up. Insight 4: Scottish Education Department. http://www.scotland.gov.uk/library5/education/ins4-00.asp

Johnston R. S., and Watson J. E. (2005). The effects of synthetic phonics on Reading and spelling attainment – A seven-year longitudinal study. http://www.dera.ioe.ac.uk/14793/1/0023582.pdf.

Laberge, D. and Samuels, S. J. (1994). Towards a theory of automatic information Processing in reading. *Cognitive Psychology.* 6, 293-323

Lyon, G. R. (2003). Reading disabilities: Why do some children have difficulty learning to read? What can be done about it? The International Dyslexia Association' Quarterly Periodical 29(2) www.interdys.org. Retrieved 10/10/2013

Memser, H. A. E. and Griffith P. L. (2006). Everybody's Selling it – But just what is explicit, systematic phonics instruction? The Reading Teacher. 59(4), 366-376.

National Reading Panel (2000). Report of the National Reading Panel: Reports of the subgroups. Washington D.C.: National Institute of Child Health and Human Development. http://www.nichd.nigov/publications/nrp/report Retrieved, 9/03/2009.

Penner-Wilger, M. (2008). Reading fluency: A bridge from decoding to comprehension. http://esp.schoolspecialty.com/downloads/researchpapare/other/fluency/ Retrieved 5/02/14

Purcell-Gates, V. (1997). There's reading … And then there's reading. Process Models and Instruction; focus on basics connecting research and practice http://www.ncscall.net/index.htm@id=460.html.Retrieved6/1/2014

Reutzel, D. R. and Cooter, R. B. (2005). *The Essentials of Teaching Children to Read.* New Jersey: Allyn and Bacon, Pearson Educational Inc.

Torgerson, C. J., Brooks C. and Hall J. (2006). A systematic Review of the Research Literature on the use of phonics in the Teaching of Reading and Spelling. Research Report No. 711: The Department for Education and skills, The University of Sheffield.

Venezky, R. L. (1999). *American way of Spelling: The structure of American English Orthography.* New York: Guilford.