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AN INVESTIGATION INTO CONTEXTUAL FACILITATION EFFECTS  
FROM A VERBAL-VISUAL FORMAT.

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by

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## ABSTRACT

This study investigated the use of contextual facilitation in children's beginning reading. A verbal-visual format was utilised to examine the way context influences children's ability to identify irregular words (words which do not follow normal spelling to sound relationships). The study also determined whether poor or good readers in each grade utilised context more or less according to a proposed stage pattern of word identification.

The sample, comprised 113 children drawn from three grades from a Primary School in New Plymouth. Children were individually tested with the Peabody Picture Vocabulary Test-Revised, BURT Word Reading Test, Isolated Word Test and Contextual Facilitation Test. The BURT, Isolated Word Test and Context Facilitation Test were modified for easier presentation and active participation of the children to reduce confounding variables of earlier research.

Two ANOVA's were applied to analyse data in this study. The first was used to assess the difference that exists in contextual facilitation across the grades tested. The second ANOVA assessed the interaction between grade by reading ability by word block difficulty for context facilitation and for movement through the proposed stage pattern in word recognition. A correlation and

stepwise regression assessed the link between context facilitation and BURT scores for reading ability differences between the children in relation to contextual facilitation use.

The first ANOVA revealed that utilisation of context with childrens' increasing age decreases for simple words, but increases with increasing word difficulty. The second ANOVA indicated a divergence in reading ability and contextual facilitation beginning at about Junior 2 grade, which possibly delayed childrens' development of automatic word decoding skills. The correlation and stepwise regression between contextual facilitation and BURT scores provides the range of the children's word identification ability. This showed a considerable range in ability from poor word decoding where context cannot be utilised, through an alliance between decoding and context to identify words; to highly efficient word decoding without the need for context.

Evidence from this study indicates the existence of a stage pattern of sight word acquisition similar to that proposed by Adams and Huggins (1985). This consists of three stages: 1) non-recognition, 2) intermediate and 3) automatic word recognition. Results of this study provide evidence that an alliance exists between children's decoding and context for words in the intermediate stage before automatic word recognition occurs. As a result, increasing word

identification ability into the child's non-recognition stage from intermediate stage expansion. Divergence in the stage pattern proposed begins in Junior 2 grade, where low ability readers lag behind in automatic word decoding and rely more on context. Further research beyond the generalised results from this study should include a longitudinal study to follow the reading development of individual students.

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## CHAPTER ONE

### INTRODUCTION AND OVERVIEW

The specific aim of this study is to determine whether contextual facilitation increases the reading potential of good and poor readers. Two opposing views exist regarding children's reading potential and the issue of contextual facilitation. The first view put forward by Goodman (1967) and Smith (1971) proposes that skilled reading is an activity of relying on the syntactic and semantic redundancies of language to make predictions about text yet to be encountered. The process of learning to read, according to this "psycholinguistic" view, is one of picking up contextual cues. The second view put forward by Stanovich (1980, 1986) proposes that skilled reading relies on the rapid and accurate decoding of words, and is not a context reliant process. These views are briefly outlined below along with a description of the perspective adopted in this study.

According to the psycholinguistic method of reading instruction, teachers should allow the child to make mistakes as the context will soon put them right. There must be no specific help with words; when a child finds difficulty with reading, the teacher's role is to encourage them to work out words in their own way. The children learn to read because the teachers prevent reading programmes from standing in the children's way.

Therefore, this psycholinguistic view considers reading acquisition to be a natural process in which exposure to reading materials is all that is necessary for acquisition. Interfering with the natural state of affairs may lead to failure, "because children will have to deal with concepts and structures that make little sense to them" (Calfee and Drum, 1986 p. 809). As a result, reading failure arises from efforts to "teach" about reading when children could easily learn about reading on their own.

One apparent weakness in this view is that children can learn to read by relying on sentence context alone without phonic decoding. In this regard, it should be noted that even the most obvious contexts generate a number of alternative views. For example, take the sentence: "The boy climbs the fence." The choice for the target word fence is not only limited to climbable objects (e.g., ladder, wall, rope, bars, hill), but could also include adverbs like fastest or slowest. The delay generated by the child trying to work out the meaning of the target word from sentence context alone could be considerable.

Advocates of the psycholinguistic method recommend that children be taught to skip unknown words, until the words are met repeatedly in various contexts to induce meaning. This method allows fluent readers to enlarge their vocabulary, but it presupposes only



occasional unknown words. The method is ineffective for the beginning reader who may be stumped by more than one word in the sentence. In the above sentence, a child who cannot read fence may also fail to read climbs. The contextual clues in the sentence now become uninformative: "The boy \_\_\_\_\_ the \_\_\_\_\_." Not having the means to progress further than this could lead to frustration and the avoidance of the area of reading.

The alternative view, known as Phonological Decoding, states that reading by skilled readers is a process of rapid decoding of words. Stanovich (1980, 1986) suggests that the use of context is negligible by skilled readers but context usage by poor readers is significant. Reading according to Stanovich is not a top-down context driven process, but rather a bottom-up automatic decoding process. This view encompasses fast automatic bottom-up processing, where spelling-to-sound mapping determines a child's ability to identify unknown words.

When children have developed their knowledge about spelling-to-sound correspondences, it is also important to develop their automaticity at word identification. Words must be recognised quickly to ensure that sufficient cognitive resources are available for comprehension processes to operate on the information in children's short-term memory. Stanovich (1986) suggests that

unrewarding early reading experiences will lead to less involvement in reading by the child. As a result, the poor reader's lack of practice prevents the development of speed and automaticity in word recognition.

Research reviewed by Stanovich (1986) indicates that good readers use context less because of their good decoding skills in reading whereas poor readers utilise context more in reading because they have poor decoding skills. Stanovich (1986) also indicates that context facilitation is inversely related to a child's word recognition skill. Therefore, a child's word recognition skill determines the extent to which contextual information will be relied upon to complete lexical access. Although poor readers rely on context more than good readers for word identification in ongoing reading, research reviewed by Stanovich (1986) also suggests that good readers are better at producing missing words in visually or orally presented text.

The view put forward in this study is that a cooperative mechanism exists between children's decoding and context usage while reading. It is proposed that children are at different levels of ability in terms of their utilisation of context to read words in text. Generally speaking there are three groups or levels. The first is the poor reading ability group who are both poor decoders and context users.

In this group the children's language prediction skills do not aid the decoding of words. At the opposite end of the scale, the good readers decoding skills are so good that context does not significantly increase their language prediction skills. The good readers use context only as a back-up system to check difficult or irregular words while reading.

The majority of beginning readers fall between these two other groups, and utilise context and word decoding in a cooperative manner while reading. In this group language prediction ability by the use of context helps children become better at word decoding. The result is that they engage in more automatic processing of words, and are therefore, less reliant on language prediction for word identification. This intermediate group of children are, as Stanovich (1982) suggests, poor readers who are not deficient in their utilisation of context to facilitate reading. However, the slower and less accurate decoding by the poorer readers in this intermediate group may deteriorate if the reading materials are too far beyond the child's reading ability. The consequence of this gap between the child's reading ability and the materials they read would increase each school year, and may as Stanovich (1986) suggests generate "Matthew effects".

However, total reliance on either decoding or context for reading is

ineffective for the child. Relying on only context to read can limit the beginning reader's word specific knowledge. For instance, they will not be able to pronounce irregular words correctly, such as "stomach" which does not follow conventional letter-sound rules. Consequently, the beginning reader will also be restricted in their awareness of polyphonic letter sequences in words, such as, own, or ear. Total reliance by a child on context to identify unfamiliar words will also result in little progress. The words that can be predicted from context are typically high frequency words, and not meaningful content words.

With these alternative views in mind, the aim of this study is to examine more closely the relationship between contextual facilitation effects and the development of word identification ability, with particular focus on irregular words. The view proposed in this study is that a child's ability to reflect on sentence context combined with emerging phonological recoding ability, influences reading by helping children develop further their decoding skills. That is, the ability to combine knowledge of the constraints of sentence context with incomplete graphophonemic information may help children identify unfamiliar words (including irregular ones), and thus, increase both their word specific knowledge and their knowledge of grapheme-phoneme correspondences. This suggests that beginning readers who are better able to use sentence

context will more rapidly progress to a point at which the ability to use context decreases in importance as a consequence of more automatic cognitive processes in decoding taking over. Consequently, context usage in poor readers may lag behind good readers but reach a similar point a few years later.

### Intent of the Present Study

This study examines the development of contextual facilitation effects as a function of grade level and decoding ability. Previous research to investigate this issue was carried out by Adams and Huggins (1985) by using irregular words in a visual context for identification by the children. They found that accuracy of recognising irregular words of “intermediate familiarity” (which varied with age and ability) improved markedly with context for every age and ability group.

Several important modifications were made in this study to overcome some shortcomings of the Adams and Huggins (1985) study regarding word presentation. The major alteration was the use of context in a verbal-visual format for the children to identify target words. This was aimed at reducing possible memory overload resulting from decoding the words preceding the target word. The words were also presented in a random order to the child, to avoid

possible order effects. The results from the context test for contextual facilitation provided by the children were compared to their isolated irregular word scores. The other modifications made to the Adams and Huggins (1985) method in this study are discussed in chapter three, (the method).

The next chapter (chapter two) reviews the literature relating to the views put forward about context effect and decoding reliance. A case is then made based on a review of research to adopt a combined perspective involving elements from both the contextual and decoding approaches. Chapter three explains the procedures and tests used, and also modifications carried out on the materials used by Adams and Huggins (1985). The aim of the modifications is to focus more on contextual facilitation between ability groups and reduce the confounding variables of previous experiments. Chapter Four presents the results of the study and Chapter Five presents a discussion of the results. Finally, Chapter Six presents the conclusions of this study, and implications for teaching and further research about contextual facilitation.