

# Prevalence of Poor Comprehenders in a Rural US School District

Krystal L. Werfel<sup>1</sup> ♦ Connelly Crowe<sup>2</sup> ♦ C. Melanie Schuele<sup>1</sup>

<sup>1</sup>Vanderbilt University School of Medicine, <sup>2</sup>Georgia Institute of Technology\*

## ABSTRACT

The purpose of this investigation was to explore the prevalence of poor reading comprehension in third and fourth graders in a rural Southern school district. As part of a larger study examining the spelling skills of poor comprehenders, decoding and reading comprehension skills of third graders at two schools and fourth graders at three schools were screened. Results indicated that 36% of children in this school district scored below 1 standard deviation below the mean on at least one measure of reading skills. 21% scored below the average range on decoding only, 5% on comprehension only, and 10% on both decoding and comprehension.

## INTRODUCTION

Gough and Tunmer (1986) proposed a simple view of reading in which reading is the product of decoding and linguistic comprehension:

**Reading = Decoding x Linguistic Comprehension**

In this view, children can fall into one of four groups in terms of reading performance. Children with normal reading have adequate decoding and comprehension skills, and children who are “garden-variety poor readers” (Stanovich, 1988) have difficulty with both decoding and comprehension skills. In addition, children can show a discrepancy between decoding and comprehension skills. Children with dyslexia have adequate comprehension but poor decoding. Poor comprehenders have adequate decoding but poor comprehension.

	Adequate Decoding	Poor Decoding
Adequate Comprehension	Good Reader	Dyslexic
Poor Comprehension	Poor Comprehender	Garden-Variety Poor Reader

Much research has investigated the academic performance of children with reading disabilities. However, these investigations are often limited to difficulty in the early stages of literacy development (e.g., decoding, dyslexia; Catts, 2005). In contrast, there is relatively little research on children with specific comprehension deficits (i.e., poor comprehenders). Preliminary evidence suggests that poor comprehenders display deficits in linguistic skills such as syntax and vocabulary but not phonological awareness (Catts et al., 2006). Cragg and Nation (2006) suggested that poor comprehenders also display written language deficits; however, single word spelling skills appeared intact. The purpose of the ongoing larger study is to explore spelling skills across writing contexts (e.g., single word spelling versus contextualized spelling) in poor comprehenders.

Previous research suggests that poor comprehenders account for between 15 and 20% of school-age children in the UK (e.g., Nation & Snowling, 1998; Stothard & Hulme, 1995; Yuill & Oakhill, 1991).

**The purpose of this poster is to present preliminary evidence on the prevalence of poor comprehenders as compared to other types of reading performance for third and fourth graders in a rural US school district.**

## METHOD

### PARTICIPANTS

Participants were 168 (82 male) third (n = 59) and fourth (n = 109) graders recruited from a rural middle Tennessee school district that serves approximately 2900 students grades preK to 12. In 2011-2012, 8% of third and 10% of fourth graders in the district scored below basic on state language arts/reading standardized testing.

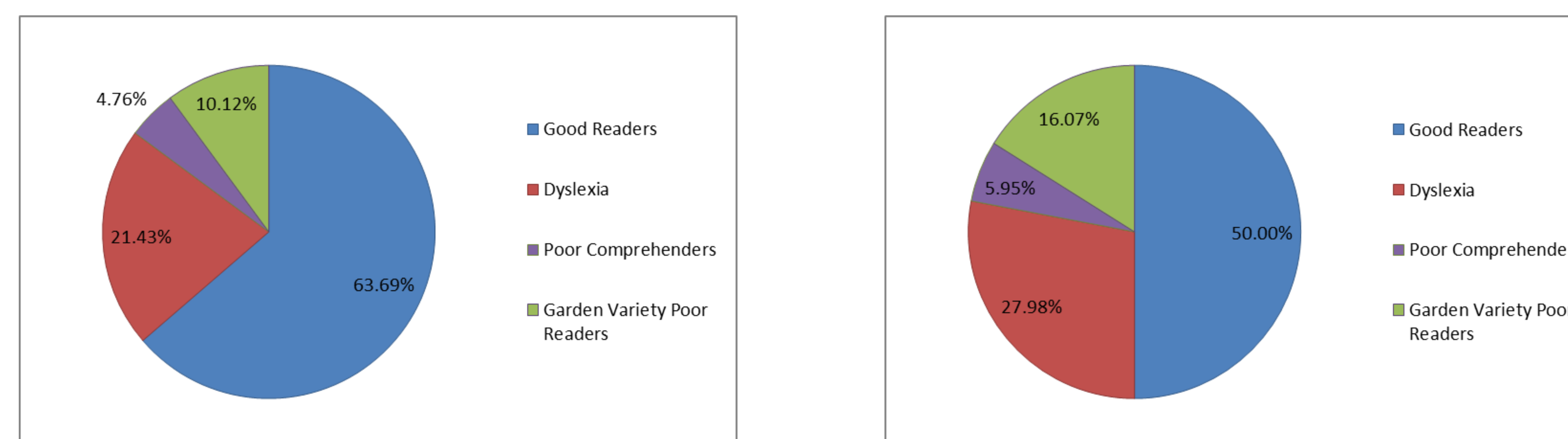
### PROCEDURES

Third and fourth graders participated in reading skills assessment. Decoding skills were assessed using the Test of Word Reading Efficiency-2<sup>nd</sup> Edition (TOWRE-2; Torgesen, Wagner, & Rashotte, 2012). Reading comprehension skills were assessed using the Test of Reading Comprehension-4<sup>th</sup> Edition (TORC-4; Brown, Hammill, & Lee, 2008). Assessment took place during the spring semester.

Children were tested in groups (size ranging from classroom to entire grade) for the TORC-4. During group testing, children were taken aside one at a time to administer the TOWRE-2.

## RESULTS

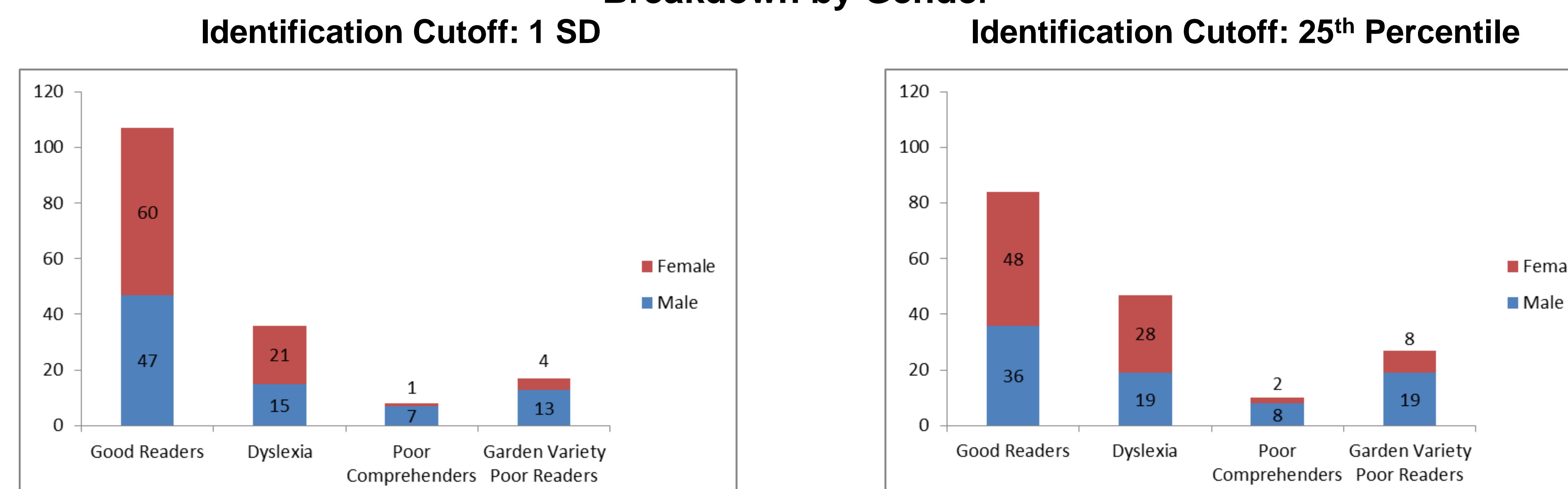
**Prevalence of Poor Comprehenders**  
Identification Cutoff: 1 SD      Identification Cutoff: 25<sup>th</sup> Percentile



**Prevalence by Grade**

	3 <sup>rd</sup> Grade		4 <sup>th</sup> Grade	
	1 SD	25 <sup>th</sup> Percentile	1 SD	25 <sup>th</sup> Percentile
<b>Good Readers</b>	59.32%	49.15%	66.06%	50.46%
<b>Dyslexia</b>	22.03%	28.81%	21.10%	27.52%
<b>Poor Comprehenders</b>	1.69%	3.39%	6.42%	7.34%
<b>Garden Variety Poor Readers</b>	16.95%	18.64%	6.42%	14.68%

**Breakdown by Gender**



## DISCUSSION

The purpose of this poster was to report the prevalence of poor comprehenders in a rural school district. This investigation found that up to 50% of third and fourth graders in a rural school district demonstrated some type of reading difficulty. Around 5% of children were classified as poor comprehenders (10% of children with reading difficulties).

Using a cutoff of 1 standard deviation below the mean (i.e., standard score of below 85), 36% of children in this school district exhibited reading difficulty on at least one measure of reading skills: 21% scored below the average range on decoding only (i.e., dyslexia), 5% scored below the average range on comprehension only (i.e., poor comprehenders), and 10% scored below the average range on both decoding and comprehension (i.e., garden variety poor readers).

Using a cutoff of below the 25<sup>th</sup> percentile (e.g., Catts et al., 2006) below the mean (i.e., standard score of below 90), 50% of children in this school district exhibited reading difficulty on at least one measure of reading skills: 28% scored below the average range on decoding only (i.e., dyslexia), 6% scored below the average range on comprehension only (i.e., poor comprehenders), and 16% scored below the average range on both decoding and comprehension (i.e., garden variety poor readers).

The prevalence of poor comprehenders by grade differed somewhat, with a higher prevalence in fourth grade. Approximately 6% of fourth graders were classified as poor comprehenders, as compared to approximately 2% of third graders using the 1 SD cutoff. Approximately 7% of fourth graders were classified as poor comprehenders, as compared to approximately 3% of third graders using the 25<sup>th</sup> percentile cutoff. In contrast, the prevalence of garden variety poor readers appeared to lower in fourth grade, and dyslexia did not appear to differ across the two grades.

In contrast to previous studies (e.g., Nation & Snowling, 1998; Yuill & Oakhill, 1991), more boys than girls were classified as poor comprehenders in this rural US school district. In addition, the overall prevalence of poor comprehenders was lower in this study than reported in these previous studies (e.g., approximately 15%). Recall that previous prevalence findings for poor comprehenders are all derived from samples of students in the UK. Perhaps there are differences in the nature of poor comprehenders across geographic regions and educational systems.

## FUTURE DIRECTIONS

Future research should attempt to replicate this finding in a broader sample of students in the US and continue to explore the nature of specific reading comprehension difficulties.

This study is ongoing. Data collection of spelling skills of poor comprehenders is underway. In addition, other school districts will be recruited to participate in the upcoming months.

## ACKNOWLEDGEMENTS

This study was supported by a Preparation of Leadership Personnel grant (H325D080075; PI: Schuele), US Department of Education and the Vanderbilt CTSA grant UL1 RR024975-01 from NCCRR/NIH. Study data were managed using REDCap electronic data capture tools hosted at Vanderbilt University (1 UL1 RR024975 from NCCRR/NIH). The content is solely the responsibility of the authors and does not necessarily represent the views of funding agencies.

Poster presented at the 2012 Convention of the American Speech-Language-Hearing Association, Atlanta, GA  
References available upon request: [language@vanderbilt.edu](mailto:language@vanderbilt.edu)  
Poster available at: [www.mc.vanderbilt.edu/language](http://www.mc.vanderbilt.edu/language)