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Tryouts and Evaluation of Reading Fluency Instrument for Grade 2 Pupils

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Abstract

This research determined the level of Reading Fluency (ReFln) in second-grade learners. This was accomplished using an instrument that evaluated the students' reading rate, accuracy, and understanding. The researchers adopted the instrument created by NAEP to determine the reading proficiency of Grade 2 learners. Additionally, the researchers developed a four-level checklist to gauge students' reading fluency. The results of Cronbach's Alpha showed poor reliability for Level 1 and Level 2, but good to excellent reliability for Level 3 and Level 4, with Level 4 demonstrating the strongest consistency. The outcomes of this study provided insights useful for enhancing approaches that could be used to teach and evaluate the reading ability of Grade 2 learners.

Keywords: Pupils, Assessment tool, Tryouts, Reading Fluency, Evaluation

Introduction

Reading fluency is widely acknowledged as a foundational component of early literacy, serving as a bridge between decoding skills and higher-level comprehension. Recent studies emphasize that fluency encompasses reading accuracy, rate, and prosody—elements that together reflect the automaticity of word recognition necessary for meaningful reading engagement. According to Feruzi (2021), automatic and effortless word recognition enables learners to allocate cognitive resources to constructing meaning rather than decoding each word laboriously. This aligns with the automaticity theory, which underscores that fluency

development is essential for young readers, particularly those in the primary grades who are transitioning from "learning to read" toward "reading to learn."

Contemporary empirical research also highlights the strong predictive relationship between text reading fluency and reading comprehension. According to Kim, Quinn, and Petscher (2021), text-reading fluency is not only a multidimensional construct but also a significant longitudinal predictor of comprehension performance among early-grade learners. Their findings underscore the importance of accurate, developmentally appropriate tools that can measure oral reading fluency with precision. Earlier work by Kim, Wagner, and Foster (2011) similarly demonstrated that oral and silent reading fluency are integral to understanding the overall reading abilities of young children. Collectively, these studies affirm the necessity of assessing fluency using structured instruments that are sensitive enough to detect variations in students' performance.

Given these insights, the development and validation of a reliable Grade 2 reading fluency instrument is both timely and essential. International reports, such as the NAEP Oral Reading Study (Daane et al., 2005), have long emphasized the need for systematic oral reading assessments. However, the educational disruptions of recent years have further heightened the urgency for accurate tools. For instance, Stone (2022) found notable declines in reading fluency following school closures, underscoring the importance of consistent and well-validated measures that can identify learners' strengths and needs. In this context, creating a standardized, psychometrically sound instrument for Grade 2 pupils will support teachers in diagnosing reading difficulties early and shaping targeted interventions that improve literacy outcomes.

Theoretical Framework

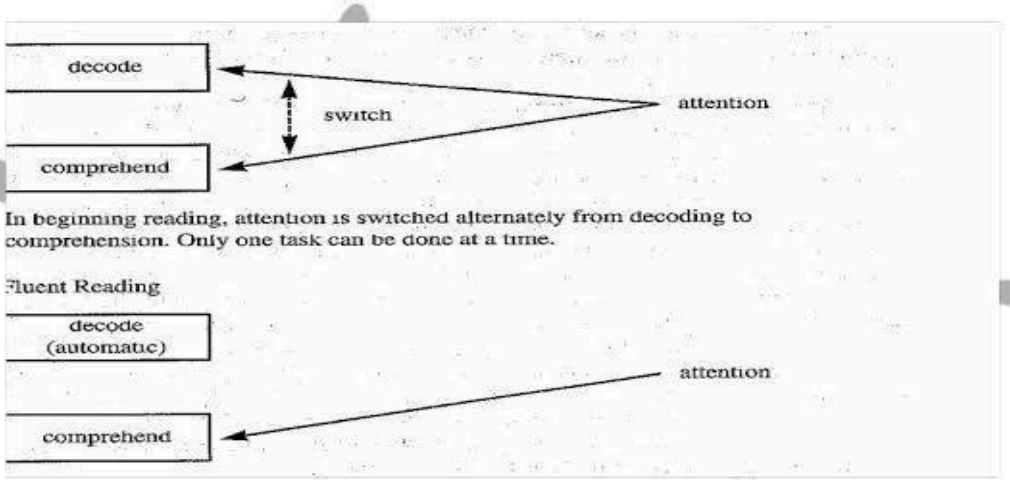
The theory that has been applied in this research study as a theoretical background is referred to as Learning Theory by (LaBerge & Samuels, 1974) Automaticity theory. They considered automaticity theory as having been applied to reading fluency to measure the extent to which a student is able to look directly at words to read them. The theory puts more emphasis on the fact that it is the word recognition that needs to come first and be developed via easier texts for those students who have a problem with reading. The automaticity theory draws its origin from the word automatic. Automatic refers to an event meaning to a person's perception and information processing ability with fewer efforts.

According to LaBerge and Samuels, the reader seems to go through several cycles of text processing as the printed words are given meaning. Perusal impulse is not an important cue to go from one mode of passing into another one of decoding and comprehension of processing. This is because when they use so much energy in the process of decoding the words of text they are left with little strength to perform other functions such as understanding what has

been reading. This is so because readers are also known to have very limited attention if at all they are going to undertake processes of decoding and comprehension switching. If they are spending a lot of attention while decoding what they read, then they will be left with little attention as they do assign the rest to other activities like comprehending the reading.tent. Perusal impulse is thus restricted in its abilities to move from one type of processing to other processing of decoding and comprehension. This is because, if those Philip's students spends too much of their time encoding words, the other processes are left with very little time; processes that are equally as important as the decoding of words in chapter and verses, such as comprehension concerning the content of a text read. Newsvise / Problem Readers do not have the option of focusing each passage, in decoding and comprehension in turns. If most of the attention is invested towards interpreting the words in text then there will be little energy left for tasks like meaning of a text.

Figure 1.

LaBerge & Samuels, 1974



The Present Study

The present study seeks to develop, refine, and evaluate a contextually grounded Reading Fluency Instrument (ReFin) specifically designed for Grade 2 learners, addressing the recognized need for reliable and locally validated measures of early reading fluency. Anchored in recent scholarship emphasizing the importance of structured and psychometrically sound fluency assessments—such as curriculum-based word-reading measures for second graders (according to Mahfouz et al., 2023), digitally administered reading-efficiency tools supported by comprehensive validation frameworks (according to Yeatman et al., 2024), and contemporary analyses of oral reading fluency assessment practices in young children (according to van der Velde et al., 2024)—this study adapts the National Assessment of Educational Progress (NAEP) fluency framework into a four-level instrument measuring word recognition, phrasal reading, prosody, and oral sentence fluency. The development process involves systematic expert review using the Content Validity Index (CVI), Content Validity Ratio (CVR), Probability of Chance Agreement (Pc), and Kappa statistics to ensure conceptual clarity, item relevance, and developmental appropriateness.

To further establish the empirical soundness of the instrument, a pilot implementation is conducted among Grade 2 pupils to examine internal consistency and generate item-level performance data. Reliability analyses across the four levels guide decisions regarding item retention, revision, or removal, ensuring that each component of the instrument contributes meaningfully to the assessment of reading fluency. Item analysis and expert feedback collectively inform the iterative refinement of the instrument's structure and content. Through this combined qualitative and quantitative validation process, the study aims to produce a robust, developmentally appropriate, and context-responsive reading fluency measure. Ultimately, the refined instrument is intended to assist teachers, literacy specialists, and researchers in making informed instructional decisions and monitoring learners' progress in foundational reading skills.

Methodology

To evaluate the degree of fluency of the reading ability in students, we used the tool based on the National Assessment of Educational Progress used for NAEP in reading (Daane, Campbell, Grigg, Goodman, & Oranje, 2005). This scale considers the level of skills a student displays while reading aloud. It measures aspects such as accuracy, pacing, expression, and phrasing to determine how smoothly and effectively a learner reads a passage. The tool also helps identify specific areas where students may struggle, allowing teachers to provide targeted support. By using this standardized framework, the assessment ensures consistency and reliability when comparing students' reading fluency levels.

Figure 2.

National Assessment of Educational Progress Fluency Scale		
Fluent	Level 4	Reads primarily in larger, meaningful phrase groups. Although some regressions, repetitions, and deviations from text may be present, these do not appear to detract from the overall structure of the story. Preservation of the author's syntax is consistent. some or most of the story is read with expressive interpretation.
Fluent	Level 3	Reads primarily in three- or four-word phrase groups. Some small groupings may be present. however, the majority of phrasing seems appropriate and preserves the syntax of the author. Little or no expressive interpretation is present.
Non-Fluent	Level 2	Reads primarily in two-word phrases with some three- or four-word groupings. Some word-by-word reading may be present. Word groupings may seem awkward and unrelated to larger context of sentence or passage
Non-Fluent	Level 1	Reads primarily word-by-word. Occasional two-word or three-word phrases may occur but these are infrequent and/or they do not preserve meaningful syntax.

The grades 2 pupils from three different elementary schools were the main target population of this study. In order to conduct this research, we should opt for 30 randomly selected grade 2 pupils from various elementary schools. The simple to complex text developed by researchers is employed to assess the oral reading speed along with accuracy of students, and then measure the level of fluency words which can be read orally by that student. The child will only advance to the next if the score in the "yes column" gets 3-5 while in case of 2 below, they cannot progress.

Excellent	Reads primarily in larger, meaningful phrase groups.
Very Good	Reads primarily in three- or four- word phrase groups. Some small groupings may be present.
Good	Reads primarily in two-word phrases with some three- or four word groupings.
Fair	Reads primarily word-by-word. Occasional two-word or three word phrases may occur.

LEVEL 1	● **“Walk away”** ● **“Know that”** ● **“Be my friend”** ● **“Once in a while”** ● **“Want that thing”**
LEVEL 2	● **“Deep blue ocean waves”** ● **“Gently swaying palm trees”** ● **“Cold icy winter mornings”** ● **“Soft fluffy while clouds”**
LEVEL 3	● **“Round orange pumpkin”** ● **“Smooth polished river stones”** ● **“Busy city street corners”** ● **“Tall green pine trees”** ● **“Clean white cotton sheets”**
LEVEL 4	● **“It's time for bed, let's brush our teeth and read a story.”** ● **“Look at the big red truck driving down the street.”** ● **“Let's practice counting the colorful balloons in the room.”** ● **“I will explore the backyard and look for bugs under the rocks.”** ● **“It's important to say ‘please’ and ‘thank you’ when asking for things.”**

The above picture is the instrument created by the researchers, we look for 5 experts to validate our instrument. After that, we compute the Content Validity Index (CVI), Probability of Chance Agreement (Pc), Kappa Statistic Coefficient (K), and Content Validity Ratio (CVR) to determine if the items in the instrument need to be retained, revised, or removed. These statistical measures help ensure that each item accurately reflects the construct being measured and is free from ambiguity. Through this process, the researchers can improve the overall quality, clarity, and relevance of the assessment tool.

Results and Discussion

After conducting the pilot testing of the assessment with grade 2 learners, the researchers analyze the reliability of each level with 5 items using cronbach alpha. Below pictures show an interpretation of reliability for each level.

LEVEL	CA	INTERPRETATION
1	**0.487**	**Poor reliability**
2	**0.318**	**Poor reliability**
3	**0.769**	**Acceptable reliability**
4	**0.849**	**Good reliability**

The results of cronbach alpha for **Level 1 is 0.487**. It indicates poor internal consistency reliability. This means that the items within this level do not measure the same underlying construct consistently. In simpler terms, the items are not strongly related to each other. For the results of **Level 2 Cronbach alpha of 0.318.** It indicates a low level of internal consistency reliability which means items are not correlated with each other enough to form a coherent scale. The results of the cronbach alpha for **Level 3 is 0.769** it indicates that the items in the scale are mostly good or excellent consistency reliability with slight room for improvement. For **Level 4** fluency, with larger and meaningful phrases, the Cronbach's **Alpha of 0.849** indicates a good reliability, meaning the items on the scale are reliably measuring the same concept. It shows that the scale is dependable and provides consistent results.

Conclusion and Recommendation

The tryouts and evaluation of reading fluency were done through a two-stage process, (1) pilot testing and (2) interpretation. After constructing the instrument (ReFin) the researchers began their pilot testing to grade 2 pupils in different public schools. The 4 levels of the said instrument was used to measure the pupils reading fluency such as word-by-word, two to four word phrases, and larger phrases. Researchers use an adapted instrument based on the NAEP framework. The results of Cronbach's Alpha showed varying degrees of internal consistency reliability at the four different levels of fluency. Specifically, levels 1 and 2 were at poor to low reliability. This means that the items in these levels weren't consistently measuring the

same concept. While on levels 3 and 4 it revealed good to excellent reliability, especially level 4 that showed strong internal consistency and reliable results.

The ReFin instrument requires refinement, particularly at levels 1 and 2, as indicated by the low reliability. To enhance the instrument, a thorough item analysis should be conducted to identify problematic items. Additionally, the development of new items that more accurately assess the target skills at these levels is necessary. Further pilot testing with a larger sample size is recommended to validate the revised items. To ensure consistent scoring and minimize inter-rater reliability issues, rigorous rater training and the development of clear scoring rubrics are essential. The use of multiple raters can further enhance the reliability of the ratings. Moreover, incorporating feedback from both teachers and students during the instrument refinement process can provide valuable insights into its usability and relevance. The inclusion of qualitative methods, such as teacher interviews and classroom observations, can complement quantitative data and provide a more holistic understanding of the instrument's effectiveness.

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