Enhancing Reading Comprehension Support in Upper Primary Grades

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Abstract

Reading comprehension is a fundamental skill critical for academic success and later societal participation. Given the increasing number of students struggling to meet targeted proficiency levels, it is scientifically relevant to develop effective strategies for improving reading comprehension, particularly in the upper grades of School Board X. This study investigates how reading comprehension support can be enhanced for students failing to meet proficiency targets. Through a selective search review and interviews with eight teachers, the research identifies gaps in current practices and aligns them with evidence-based approaches.

The findings emphasize the importance of matching support strategies to the identified causes of reading difficulties. While pre-teaching is commonly applied, its implementation often lacks a targeted approach addressing specific student needs, such as decoding challenges, limited vocabulary, or gaps in prior knowledge. Motivation plays a crucial role in reading comprehension. Approaches that connect reading tasks to real-world contexts and student interests foster deeper engagement and improve outcomes but are inconsistently applied in current practices.

The study also highlights the need to address special educational needs, such as dyslexia and ADHD, alongside environmental factors like socioeconomic context and multilingualism. Both require targeted and adaptive approaches to ensure inclusivity and bridge gaps in comprehension. Recommendations include improving the alignment between assessment practices and intervention strategies and enhancing the intentional use of motivational strategies. By focusing on the root causes of reading difficulties and fostering student engagement, this study offers actionable insights to improve support and promote equitable literacy outcomes.

Keywords: reading comprehension, reading difficulties, additional support, literacy interventions, primary education

Introduction

Reading proficiency is crucial for academic success and societal progress, transcending cultural and socioeconomic barriers. Recent PISA findings highlight the importance of reading skills, especially in countries like the Netherlands, where many students fail to meet adequate reading proficiency levels, emphasizing the need for improved literacy instruction (OECD, 2022). Reading proficiency is essential for academic success and lifelong learning, active citizenship, and participation in a knowledge-driven society. Research shows that targeted interventions in upper elementary grades can significantly improve reading skills (Gelzheiser et al., 2019). Evaluating and improving the quality of this support is therefore crucial to bridging achievement gaps and ensuring that all students are prepared to meet future challenges.

Similarly, School Board X has also seen subpar results in reading education. While students across their schools generally maintain a basic level of proficiency (1F), more than a third are performing below the desired average (1S). Even in schools that meet proficiency standards, reading performance has shown a decline. Therefore, School Board X has raised a question about the interventions and support provided in the upper grades of elementary school, where instruction focuses less on new learning and more on remediation and skill improvement. This shift makes it particularly interesting to examine how this support is structured to elevate reading levels.

To effectively address the challenge of subpar reading comprehension outcomes, it is essential to focus on identifying and enhancing the support provided to struggling readers. This study aims to explore existing strategies and develop practical recommendations to strengthen reading comprehension support in the upper grades of elementary schools. The central question guiding this research is: *To what extent can support in reading comprehension be enhanced in the upper grades of School board X for students failing to meet the target proficiency level?*

To thoroughly address this question, several subsidiary inquiries have been devised. Firstly, it is important to identify the resources and interventions currently available: *Which*

interventions are available in the Netherlands to support reading comprehension in the upper grades of elementary school, and what is known about their effectiveness? Following this, the study examines the relevance and implementation of these interventions within School board X, framed by the second research question: *Which reading comprehension approaches for students in the upper grades are selected and implemented by School board X, and what are the considerations and motivations behind these choices?*

Finally, the research establishes a connection between the current practices of School board X and insights from literature. This comparison is addressed through the third research question: *What are the similarities and differences between the approaches of School board X and those documented in the literature?*

By answering these questions, the research seeks to provide actionable recommendations for enhancing reading comprehension support in School board X. Moreover, by bridging theoretical frameworks with practical insights, the findings aim to offer valuable guidance not only for School board X but also for similar educational contexts striving to improve their literacy outcomes.

Theoretical framework

This chapter outlines the theoretical foundation of this study. It begins by defining reading comprehension and its core components, followed by an overview of the Dutch context and the challenges students face in developing this skill. Next, the Response to Intervention (RTI) model is introduced as a framework for identifying and addressing varying levels of support. The chapter concludes with a distinction between interventions and approaches, highlighting their general characteristics and common practices.

Reading comprehension: definition and theoretical background

Reading comprehension is the ability to understand, interpret, and derive meaning from written text. It is a complex cognitive process that involves three interrelated

components: decoding text, constructing meaning, and integrating it with prior knowledge. Decoding enables accurate word recognition, while constructing meaning interprets relationships within the text. Integrating prior knowledge connects new information with what is already known, fostering deeper understanding and critical evaluation (Catts & Kamhi, 2017; Houtveen et al., 2019). Together, these processes work in concert to enable readers to fully grasp the message of the text and engage with it effectively.

Decoding

Decoding is a key reading skill that involves translating written words into spoken sounds, forming the foundation for reading comprehension. It begins with letter recognition and phonemic awareness, linking letters to sounds (e.g., “b” = /b/). These sounds are blended to form words, such as /b/ /a/ /t/ into “bat.” Decoding also involves phonics rules, like “c” sounding /s/ before “e,” “i,” or “y” (Paus & Bacchini, 2010).

Contextual use also plays a role in decoding, as understanding the meaning of a sentence can provide clues to deciphering an unfamiliar word. With practice, decoding becomes automatic, enabling readers to recognize words swiftly and effortlessly without needing to sound them out each time. As Alkan and Ulas (2023) have argued, this automaticity is crucial for reading fluency, as it allows individuals to read words accurately and quickly, thereby supporting comprehension and the ability to engage with more complex texts .

Constructing meaning

In addition to decoding, constructing meaning is vital for reading comprehension. This process involves contextual interpretation, inference making, and visualizing. Contextual interpretation helps readers deduce meanings of unfamiliar words by analyzing surrounding text (Catts & Kamhi, 2017). Inference making fills in gaps for a deeper understanding, while visualizing creates mental images to enhance comprehension and retention. These elements work together to help readers grasp main ideas and engage critically with the text (Kamalski et al., 2004).

Integrating prior knowledge

Integrating new information with prior knowledge is key to deepening comprehension and retention (McNamara & Kintsch, 1996). Activating relevant schemas helps readers connect new content to existing frameworks. This process, alongside contextual interpretation, inference making, and visualization, strengthens understanding (Alkan & Ulas, 2023). Making connections, whether personal (text-to-self), between texts (text-to-text), or to broader world knowledge (text-to-world), is essential for effective comprehension (Perfetti et al., 2014; McNamara & Kintsch, 1996).

Schema theory, as proposed by Piaget (Siegler et al., 2014), explains how readers use their existing knowledge structures to interpret new information, either assimilating it into existing schemas or adjusting those schemas to accommodate new ideas. Through this integration, readers expand their knowledge networks, creating a more comprehensive and coherent understanding of the text. Reflecting on and evaluating new information in the context of prior knowledge solidifies understanding, helping to correct misconceptions and ensuring the accurate incorporation of information into the reader's knowledge base (Houtveen et al., 2019; Kintsch, 1988).

Development of reading comprehension in Dutch Education

In the Netherlands, reading comprehension is a distinct subject within the primary education curriculum. Skills such as decoding and reading strategies form the foundation of this subject (SLO, 2019). The Netherlands is one of the few European countries where reading comprehension is singled out as a separate subject.

In early primary education (ages 4-6), children focus on decoding (Paus & Bacchini, 2010). By grades 1-3, the emphasis shifts to reading fluency, with support mainly targeting decoding (Alkan et al., 2023; Pearson, 2006). Around age nine (grade 3), the focus moves to reading comprehension together with reading fluency, with separate exams for comprehension and critical analysis, often involving multiple-choice questions. Instruction emphasizes

strategies like summarization, text structure recognition, and inference (SLO, 2019). By ages 11-12, lessons focus solely on reading comprehension (Verhallen & Walst, 2011).

Challenges in reading comprehension

While many of the challenges in reading comprehension stem from insufficient decoding abilities, difficulties with constructing meaning, and a lack of prior knowledge (Kintsch, 2018; Houtveen et al., 2019; Akan et al. 2023), there are also more specific factors that can contribute to lower reading comprehension scores (Arias-Grundin et al., 2021). These factors include special educational needs and environmental factors, which can influence the learner's ability to effectively understand and engage with texts.

Special educational needs

Students with dyslexia, ADHD, and autism spectrum disorder (ASD) face unique challenges in reading comprehension. Dyslexic students primarily struggle with decoding, particularly in processing graphemes, leading to confusion with letters and disruptions in reading fluency. This hampers their ability to build meaning from text (Baddeley & Hitch, 2019; Groot et al., 2015; Kudo et al., 2015).

Students with ADHD chiefly struggle with sustained attention, leading to cognitive overload and difficulty integrating contextual clues needed for comprehension (Baddeley & Hitch, 2019). This hampers their ability to draw inferences and grasp the broader context of texts (Denckla et al., 2013; Groot et al., 2015).

For children with ASD, challenges can vary, but difficulties in processing social and emotional cues, as well as understanding figurative language or non-literal meanings, can complicate their reading comprehension. These students may focus intensely on the literal aspects of the text, missing the subtleties that are crucial for a full understanding.

Environment

Environmental factors, including socioeconomic status (SES) and multilingualism, also influence reading comprehension. Students from lower SES backgrounds may lack access to

books and educational resources, leading to weaker vocabulary and comprehension skills (Langeloo et al., 2019). Similarly, multilingual students often face challenges with language nuances and cultural references, which hinder comprehension. Addressing these issues requires a holistic approach that considers the broader socio-cultural and linguistic contexts of learning (Marinova-Todd et al., 2013).

RTI- model

Given the challenges students face in reading comprehension, it is crucial to identify and address difficulties early. The Response to Intervention (RTI) model uses a three-tiered approach to do this (Verhallen, 2011). Tier 1 involves general classroom instruction for all students, including method-bound support such as simplified texts (Houtveen et al., 2019), easier assignments, alternate task routes (Kitsch, 2013), or extra instruction (Pyle et al., 2017).

The second tier (Tier 2) provides additional support for students who struggle with reading but do not require highly individualized instruction. This often includes strategies such as pre-teaching, where key concepts (Perfetti & Stafura, 2014), vocabulary (Baddeley et al (2019), or skills are introduced in advance to help students better engage with upcoming lessons (Akan et al., 2023). In the Netherlands, Tier 2 support typically involves a standard of 3x 20 minutes of instruction per week outside the classroom (Paus & Bacchini, 2019). Also, the use of technology or tools can be helpful (Leonard et al, 2024). This additional support is activated when significant reading difficulties are identified, yet the student can still benefit from small-group interventions or targeted support.

Tier 3 provides intensive, individualized support for students with severe reading difficulties that Tier 2 cannot address. This often involves one-on-one instruction or specialized programs (Gelzheiser et al., 2019). While both tiers offer targeted help, Tier 3 delivers the highest level of support, ensuring students with significant challenges receive the specialized assistance they need. This structured approach allows teachers to monitor progress and adjust interventions as necessary (Arias-Gundín et al., 2021).

Interventions and approaches

In this thesis, an approach refers to a general method or philosophy used to guide teaching and learning practices. It provides a broad framework that shapes how educators address challenges or facilitate learning. In contrast, an intervention is a specific, targeted action or strategy designed to achieve a particular outcome in a certain amount of time, often addressing a clearly identified need.

Many intervention programs for struggling readers focus mainly on improving fluency and decoding (Catts & Kamhi, 2017). While fluency is an important indicator, it is often insufficient for addressing comprehension challenges (Houtveen et al., 2019). More effective interventions approach reading comprehension from multiple angles, incorporating word recognition, prior knowledge, cognitive skills, and metacognitive strategies (Houtveen et al., 2019). Research shows that these comprehensive approaches are more successful in improving comprehension (Perfetti & Stafura, 2014; Perfetti & Hart, 2002; Pyle et al., 2017).

The information outlined above is synthesized into a theoretical framework, as presented in Table 1.

Table 1

Overview theoretical framework

Theme	Subtheme
Method	Texts differences
	Extra instruction
	Assignment
Additional support	Pre-teaching
	Extra materials
	Use of technology
	Interventions
Perceived Causes	Reading Fluency
	Learning difficulties
	Environmental factors

Method

This study utilized two research methods: (1) a selective search review and (2) interviews. The former explored available programs for reading comprehension in the upper grades of elementary school in the Netherlands and their effectiveness (research question 1). Supplementary insights were gained through expert consultation to enrich the analysis (Grant & Booth, 2009). The interviews examined the reading comprehension approaches implemented by School Board X, including the considerations and motivations behind these choices (research question 2). Findings from both methods were compared to identify similarities and differences, providing insights into the alignment between School Board X's practices and existing strategies (research question 3).

Selective search review

Procedure

To identify relevant peer-reviewed literature, databases such as Eric, Smart Cat, Scopus, PsychMed, and Google Scholar were used with search terms like "reading comprehension," "Netherlands," "effectiveness," and "elementary school/primary school," applied with Boolean operators (AND/OR) and were also translated into Dutch. Additionally, an expert specializing in reading comprehension and special educational needs, also a teacher and researcher at a university, was consulted. This consultation explored effective general approaches to reading comprehension and strategies for supporting struggling readers, focusing on contributing factors and tailored interventions. The questions posed are detailed in Appendix A. In Appendix A, the questions posed to the specialist are outlined.

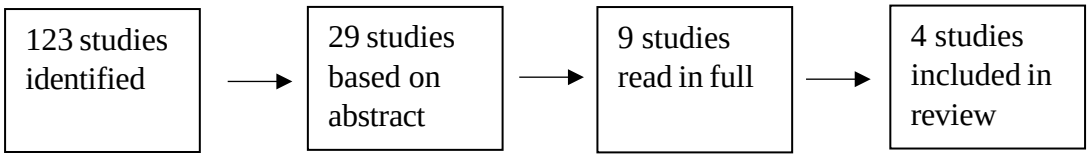
Search results

In Figure 1, a PRISMA flowchart is presented, providing a visual representation of the process through which articles were identified, screened, and selected for this study. The initial

searches yielded 123 results. After screening for relevance and quality by reviewing titles, abstracts, and keywords, nine articles were selected for full-text review. Following a thorough assessment, four studies were selected that met the inclusion criteria: (a) the study focused on reading comprehension in upper-grade primary school settings, (b) it was conducted in the Netherlands or available in the Netherlands, and (c) it included information on program effectiveness. Finally, the findings from the literature were synthesized to provide a comprehensive overview of current practices.

Figure 1

PRISMA flowchart



Analysis

The aim of the analysis was to provide a structured overview of the identified interventions and their reported effectiveness, with additional context from expert input. The interventions were described, emphasizing their core components and objectives. The analysis primarily focused on synthesizing findings from the selected studies, highlighting key outcomes and limitations regarding the interventions' effectiveness. Insights from the expert served as a complementary perspective, adding depth to the understanding of the findings from the literature.

Interviews

Participants

The study was conducted among teachers from School Board X who taught upper-grade classes (groep 7/8, equivalent to grades 5 and 6 in English-speaking countries) during the 2023-2024 school year. Only teachers with experience in these grades from the previous year were

eligible, as they had richer insights into teaching reading comprehension. Teachers new to upper grades in 2024-2025 were excluded due to their limited experience. Grade 4 was not included, as students at this level were still establishing foundational skills. The focus was specifically on students who had completed the structured curriculum but showed stagnation in their development.

Although only teachers of grades 5 and 6 were eligible, an exception was made for teachers of combination classes (4/5 and 4/5/6), as their experiences were relevant. The selection process began with a call for participation sent to all school principals by the school board, asking for a list of eligible teachers. Principals were contacted via email with a Google form (Appendix B). Participation was voluntary but encouraged by School Board X. Teachers were then contacted by the researcher to schedule interviews. Before the interviews, teachers received a letter (Appendix C) and provided informed consent (Appendix D). Active consent was also requested at the start of each interview.

Initially, the intention was to draw a random sample of 10 to 15 teachers from the list provided by school directors. However, due to a low response rate, all individuals on the list were approached, leading to self-selection. In total, 8 teachers participated in the study. Table 2 provides a description of the participants, including the grade they teach, class size, gender, years of experience in upper grades, and the percentage of struggling readers in their class.

Table 2

Overview of Participants: participant characteristics

Grade	Class size	Gender*	Experience in upper grades	Percentage struggling readers
5/6	22	female	15 years	46%
5/6	18	female	10 years	17%

4/5/6	20	female	1 year	20%
3**	20	female	5 years	-
5/6	19	female	8 years	26%
4/5/6	24	female	7 years	21%
4/5/6	19	female	2 years	11%
5/6	21	female	5 years	14%

**Note*: Gender reflects how participants identified. ***Note*: One participant did not meet the inclusion criteria, which was identified during the interview. While their data has been retained for transparency, it was partly excluded from the main analysis. Only data related to the teacher's experiences in the upper grades was used; experiences with her current class were excluded.

Instrument

The interviews were semi-structured, guided by a pre-prepared interview guide (see Appendix E). This format was chosen to explore teachers' experiences with supporting reading comprehension, offering flexibility while focusing on key topics and emphasizing the participants' perspectives (Bryman, 2016 p.468). It allowed the researcher to ask specific questions while giving teachers the freedom to share additional insights. The interview guide was based on the theoretical framework and selective search review, grouped into five themes: method, pre-teaching, additional support, assessment, and perceived causes (see Appendix F for relevant literature per theme and Appendix G for codebook development). The questions focused on the teachers' experiences, with the depth of responses varying based on the interviewee. Prior to the interviews, a pilot interview was conducted with an experienced teacher outside of School Board X. Based on the insights gained from this interview, the theme of 'assessment' was added to the interview guide.

Procedure

The interviews lasted an average of 41 minutes, ranging from 37 to 55 minutes. All conversations were recorded with explicit permission. Interviews were recorded using Microsoft Teams. Audio recordings were stored in a secure environment within the University of Groningen, in accordance with the General Data Protection Regulation (GDPR) and the Faculty of Behavioural and Social Sciences Data Management Protocol.

Analysis

The audio recordings were transcribed verbatim using speech-to-text software from Microsoft Word. A multi-level coding approach, combining deductive and inductive coding, was used in the analysis. Themes were first established from relevant literature, with sub-themes and flexible sub-sub-themes derived from the data. For example, the main theme "method" could have the sub-theme "assignment" and the sub-sub-theme "hindrance."

In the first round of coding, sentences from the interview transcripts were assigned to pre-established themes based on their relevance. If statements did not align with the themes, they were openly coded and incorporated as needed. This iterative process allowed for ongoing cross-referencing between theory and practice, adjusting the coding scheme as new insights emerged (Bryman, 2016).

In the second round of coding, additional sub-themes within the main themes were identified through a content analysis of the previously coded quotes (i.e., axially coded). This deeper analysis helped to operationalize and refine the themes further. Furthermore, some attributes were added inductively, varying by individual citation. These attributes were applied based on the specific content of each quote, allowing for a more nuanced understanding of the data.

The final coding scheme, as detailed in Appendix F, presents the distribution of themes, sub-themes, and attributes, clearly indicating whether each was derived deductively from the literature or inductively from participant responses.

Selective search review compared with interviews

After the interviews were analyzed, these results were compared to those from the selective search review. The focus of this comparative analysis lies on differences and similarities between the interventions stemming from scholarly literature on the one hand, and the approaches applied by teachers on the other hand. In doing so, insights were gained into how interventions identified through the selective search review align with or diverge from the approaches applied by teachers, highlighting potential gaps, overlaps, and opportunities for enhancing reading comprehension practices.

Audit trail and interrater reliability

During the study, coding choices and dilemmas were documented to create an audit trail (Bryman, 2016, pp. 384-386). After analysis, a fellow student reviewed the audit trail (see Appendix G). To assess inter-rater reliability, another student independently coded a subset of transcripts, and their coding was compared with the primary researcher's to identify discrepancies. The level of agreement between coders was calculated to evaluate consistency, which was 75%.

Results

This chapter presents the findings in three sections, corresponding to the research questions. First, the selective search review results address reading comprehension interventions in the Netherlands. Next, the interview results focus on the support strategies used by teachers in School Board X and their motivations, organized by themes. Finally, the third research question compares the findings from the selective search review with School Board X’s approaches, highlighting similarities, differences, and alignments with documented practices.

Interventions and support in reading comprehension (RQ1)

This section presents findings from the selective search review, focusing on four studies examining interventions aimed at improving reading comprehension. Table 3 summarizes the goals, methods, key findings, and relevance of each study. Each intervention is then discussed in detail, starting with Close Reading, followed by ISA-X, LIST, DENK, and other relevant approaches. For each, the approach is described, followed by a discussion of its effectiveness and expert insights.

Table 3

Summary of Studies

Author(s) + year	Aim of the study	Method	Most important findings	Relevance
Fischer & Frey (2014)	Effect of Close Reading on reading test	Quasi experimental	Close Reading intervention resulted in higher attendance, improved self-perception, and significantly better academic outcomes	Actionable strategies for effective, adaptable interventions
Gelzheiser, et al. (2011)	Evaluate effectiveness of ISA-X on grade 4	Quasi experimental	ISA-X significantly improved comprehension, accuracy, and vocabulary but had no notable effect on fluency	Highlights the importance of responsive, integrated reading strategies to improve comprehension, especially for older students with reading difficulties.
Houtveen, et al. (2012)	Enhance reading outcomes by improving motivation and comprehension strategies (LIST)	Evaluation research/practice-based research	By systematically focusing on reading motivation, reading outcomes improve	Illustrates how the intervention enhances reading motivation and thereby improves reading performance

Houtveen (2018)	Examine ways to enhance reading comprehension through knowledge-building and effective strategies (DENK)	Evaluation research/ practice-based research	Knowledge-building and content-rich topics are crucial for meaningful reading comprehension	Underscores the value of cross-disciplinary knowledge and strategies for enhancing comprehension

Close Reading

Close reading is an instructional approach that emphasizes careful and purposeful reading of texts. The process involves students reading the text multiple times to uncover deeper meanings and make inferences. Teachers provide structured guidance to help students focus on specific aspects of the text, e.g. vocabulary, sentence structure, and overall themes. By engaging with the text in this way, students develop critical thinking and comprehension skills (Fisher & Frey).

The study showed that implementing close reading had a significant positive effect on students' reading comprehension, with notable improvements in their ability to analyze and understand complex texts. The close reading group also had higher attendance rates and significant improvements in self-perception and reading performance, making greater gains on the California Standards Test compared to the control group (Fischer & Frey, 2014).

However, there are some important limitations. The small sample size (N = 75) that completed the program and the voluntary participation may have introduced selection bias, as students attending the after-school program could have been more motivated. Additionally, the limited application of the intervention in the Netherlands and the lack of randomization limits the generalizability of the findings. Finally, the study only reports short-term outcomes, and it remains unclear whether these gains are sustained over time. Despite these limitations, the close

reading approach has influenced other reading methods, such as *Estafette*'s new version of their reading method, which incorporates principles of close reading.

The expert noted that while *Close Reading* is fundamentally a valuable approach, its repetitive nature can sometimes lead to a lack of diversity in the types of tasks assigned to students. This repetition may occasionally limit the range of activities and engagement, which could affect its overall effectiveness in maintaining student interest and promoting varied learning experiences.

ISA – X

The Interactive Strategy Approach (ISA-X) is a comprehensive, responsive reading intervention specifically developed for Grade 4 students with reading difficulties. The intervention combines daily one-on-one sessions of 40 minutes with mini-lessons, strategic reading, and thematic text selections aligned with the social studies curriculum. The program focuses on fostering independent learning by teaching students to combine phonics-based and meaning-based strategies while also enhancing their motivation to read.

Research shows that the intervention is effective in improving reading comprehension and word accuracy. Students demonstrated significant progress on standardized tests and vocabulary tasks. However, the intervention had a limited impact on reading fluency, indicating that further attention to this aspect might be necessary (Gelzheiser et al., 2011).

While elements of this approach are reflected in Dutch programs like *Estafette* and the *Vooruit* line in *Atlantis*, there is no research on their effectiveness in the Dutch context. This underscores the need for further studies. The expert also emphasized prioritizing reading comprehension over fluency for students with severe fluency issues, suggesting that once basic fluency is achieved, the focus should shift to developing strong comprehension skills.

LIST

Leesinterventieproject voor Scholen met een Totaalaanpak (LIST) is a comprehensive reading intervention aimed at improving literacy outcomes across primary schools. It focuses on developing reading fluency, comprehension, and motivation while equipping teachers with the skills needed to sustain high-quality literacy instruction. LIST is designed as a holistic, evidence-based approach that benefits all students through targeted, differentiated instruction.

The intervention follows a tiered model: all students engage in a core curriculum with reading and writing activities to build fluency and comprehension. Those needing extra support receive Tier 2 interventions with intensive instruction and more reading time. Tier 3 provides individualized assistance for students with significant challenges. A key feature is encouraging students to read at least 25 age-appropriate books annually, along with writing tasks that link literacy skills to real-world contexts (Houtveen et al., 2012).

Research shows that LIST reduces severe reading difficulties, with fewer than 1% of students leaving primary education with inadequate reading skills. The program boosts motivation by focusing on self-selected, engaging books, promoting a positive reading culture. Its systemic, whole-school approach also ensures lasting benefits compared to other interventions (Houtveen et al., 2012).

Despite its success, LIST is not without challenges. The program's effectiveness can vary based on how well schools implement it, with teacher training and professional development being critical factors (Houtveen et al., 2012). Additionally, LIST's comprehensive nature requires substantial investment in resources, including access to high-quality books and sustained instructional support. Schools with limited resources may struggle to maintain the program's full potential, highlighting the importance of strong leadership and adequate funding.

The expert highlighted that motivation is crucial for improving reading outcomes, particularly for students with learning difficulties. LIST's focus on reading enjoyment and individualized reading practices helps engage students, especially those who struggle with

reading, by fostering a love for reading through appropriate book choices and consistent daily reading.

DENK

DENK is a reading comprehension program designed for primary education, focusing on improving students' ability to understand texts. The intervention combines three core elements: knowledge building, reading strategy instruction, and motivation enhancement. By integrating reading into thematic units tied to subjects like geography or history, DENK encourages deeper comprehension while simultaneously increasing student engagement.

The program operates through two primary lesson formats. The first, Knowledge Meter Lessons (KM), involves students reading independently from high-quality books selected by teachers. These texts align with the overarching theme, and teachers facilitate discussions to monitor progress and deepen understanding. The second format, Reading to Learn (R2L), provides guided instruction on complex texts that students might otherwise struggle to comprehend independently. Themes typically span eight weeks and conclude with meaningful projects such as presentations or written reports, adding purpose to the learning process.

Studies show that DENK positively impacts reading comprehension and knowledge acquisition, with weaker readers benefiting from structured support and exposure to rich texts. Thematic approaches also boost motivation by making learning more engaging (Houtveen, 2018). However, the program's effectiveness depends on teachers' ability to select suitable texts and lead discussions. Differentiation is challenging, and while short-term gains are evident, long-term effectiveness is unclear. Additionally, the program requires significant preparation, which can hinder consistent implementation.

The expert emphasized the importance of knowledge building as a key factor in reading comprehension. He views this as crucial for making active connections with long-term memory, which enhances students' ability to retain and apply information over time.

Strategies and support tools

The expert highlighted additional tools like *Alinea*, software that reads texts aloud, which is particularly helpful for students with reading difficulties, such as dyslexia. Although its effectiveness is not well-documented, it provides essential support for text decoding. The expert also emphasized pre-teaching, which builds background knowledge or vocabulary before reading, helping students engage with and understand the material. While *Alinea* is especially useful for students with severe challenges, pre-teaching benefits a wider range of learners.

Applied support strategies and underpinning motivations at School Board X (RQ 2)

The following section will systematically outline the support strategies teachers at School Board X have applied in practice, as well as their underlying motivations for choosing those particular strategies, addressing each theme according to the coding scheme used in the analysis.

1). Method-related support

Method choice

A notable disparity emerged in teacher satisfaction with the two primary methods used at School Board X: *Nieuwsbegrip* and *Atlantis*. Teachers using *Nieuwsbegrip*—all three of whom expressed dissatisfaction—criticized the method for feeling repetitive and lacking structured support. Some even questioned whether *Nieuwsbegrip* is an effective method at all.

> *I have occasionally raised the question, "Does* Nieuwsbegrip *still adequately cover reading comprehension?" I have some doubts about that.*(Teacher 1).[1]

[1] All quotes are translated to English by the author

In contrast, the four teachers using *Atlantis* reported positive experiences, praising its clear incorporation of structured supplemental instruction. They appreciated the method's pre-teaching component and noted that students appeared more engaged during lessons.

> *But it's not just about understanding the text; it's also about activating prior knowledge. That method encompasses much more than just a text*. (Teacher 5)

One teacher shared that they no longer use a specific method for teaching reading comprehension. Instead, they have adopted a more thematic approach, drawing texts from their reading fluency curriculum. Additionally, they focus on integrating reading comprehension skills into subjects like social studies and science. According to the teacher, it seems unnecessary to treat reading comprehension as a separate subject, as it is inherently present in all areas of learning. By embedding it into broader topics, the teacher believes students are more motivated to read because the content feels more relevant and engaging to them. This thematic and integrated approach allows students to see the practical value of reading comprehension in exploring real-world topics, which, in turn, could foster a deeper interest and enthusiasm for reading.

Extra instruction

Teachers using *Nieuwsbegrip* highlighted that additional instruction relies heavily on the teacher's initiative, as the method itself offers little systematic guidance. Supplemental support is unclear, with the only noteworthy aid being the availability of simplified texts. This lack of organization made it challenging to address specific student needs. Conversely, *Atlantis* provides a structured approach to extra instruction, which teachers found helpful. However, all teachers using *Atlantis* admitted to exclusively applying the guided pre-teaching format, even though the method offers other options for supplemental teaching, such as online text preparation or using alternative assignments.

Text Differences

The two methods also differed significantly in their approach to texts. Teachers using *Nieuwsbegrip* appreciated the flexibility of adjusting the difficulty level, allowing them to tailor texts to their students' needs. However, they found the variety of text types limited, which reduced opportunities for exposing students to diverse reading materials. On the other hand, *Atlantis* was praised for its inclusion of various text genres, which teachers felt enriched students' learning experiences.

> *Plus, the texts are not only very appealing to children, but they are also slightly above the expected level, which means there is genuinely something for them to learn.* (Teacher 3)

Nonetheless, they noted that adjusting the difficulty level of texts was more challenging with this method compared to *Nieuwsbegrip*.

Assignments

Assignments were another area of contrast between the two methods. Teachers using *Nieuwsbegrip* found the assignments repetitive and often difficult for students to complete. However, one teacher appreciated that the assignments typically focused on a specific reading strategy, which provided a clear learning goal. In contrast, teachers using *Atlantis* valued the variety of tasks embedded in the method, which they felt encouraged student engagement and

2). Additional support

Extra materials

Seven teachers provided additional instruction and materials to support weaker readers beyond what their methods prescribed. This included using different texts or assignments not included in their chosen programs. Six of these teachers worked collaboratively with students, reading texts together and discussing difficult vocabulary to deepen their understanding. Four teachers also focused on automating and modeling strategies, aiming to make students more

independent in handling the material. To achieve this, the teachers modeled strategies aloud and broke them down into manageable steps, which were then explicitly taught to the students. For example, they demonstrated how to read titles strategically, underline signal words, and identify key parts of the text. These steps were practiced and reinforced during lessons, helping students develop the skills necessary to approach reading tasks confidently and systematically.

> *If you guide them too much, you risk the opposite effect. You need to make sure to provide them with the tools so they can manage it on their own.*
>
> (Teacher 2)

Use of technology

The use of technology as a support tool was limited. Seven teachers were unaware of strategies such as online pre-reading, and only one teacher used a school-developed method, which did not include such features. Tools like laptops or specialized software to assist weaker readers were generally underutilized.

Interventions and tools

Awareness of specialized tools and interventions was low among the teachers. None of them were familiar with support tools like *Alinea*, or specific interventions like *LIST*, or *DENK*. Two teachers had attempted *Close Reading* as an intervention; However, one found it impractical for long-term use as it heavily depended on the teacher's effort and commitment, making it highly labor-intensive. The other discontinued it after switching to a new method.

Cooperative learning

Three teachers embraced a cooperative learning approach, focusing on enabling students to work without direct teacher involvement. This often involved pairing weaker readers with stronger ones. Teachers viewed this strategy as a way to build weaker readers' confidence, as they could rely on their peers for technical reading tasks. According to these teachers, this peer-

supported approach fostered collaboration while also encouraging students to become more independent.

3). Pre-teaching

TA reading

In nearly all cases, pre-teaching sessions involved teaching assistants (TAs) reading texts aloud to students. This strategy was consistently used by six out of eight teachers, while the remaining two employed it more sporadically. Teachers reported that having TAs read the material aloud helped students become familiar with the content, making it easier for them to participate in the lesson and respond to questions.

> *[T]hey've essentially already read the text once and identified the difficult words. In that sense, they've had a bit of a head start with the text's content, which makes it easier for them to participate in the lesson.* (Teacher 2)

Text reading

Text reading, either by the teacher or students, was another component of pre-teaching. Teachers used this method to ensure students were comfortable with the text and its structure before engaging in deeper comprehension activities. By reading aloud, the teacher could model fluent reading, while students had the opportunity to practice and improve their own fluency.

Reading fluency

Reading fluency, particularly the ability to read individual words quickly and accurately, was sometimes addressed during pre-teaching. Four out of eight teachers indicated that they used fluency exercises, particularly when students had demonstrated weaknesses in this area on the DMT test. However, this was not a central component of their support strategies and was implemented only as needed to reinforce specific skills.

Knowledge buildup

Building and enriching students' vocabulary was a key focus during most (six out of eight) pre-teaching sessions. Teachers employed various strategies, such as discussing challenging words directly from the text and connecting them to prior knowledge. For example, three teachers introduced key vocabulary words related to the text's topic beforehand, helping students link new concepts to familiar ideas. This approach not only broadened students' vocabulary but also enhanced their overall understanding of the text according to the teachers.

4). Assessment

Method-bound tests

Only two teachers used the assessments provided by their chosen methods to evaluate student progress. The remaining teachers preferred alternative approaches (observations, or IEP), finding the method-bound tests less effective in capturing the full scope of student understanding.

> *Quickly during instruction, there's often already a lot—well, a lot of information available for the teacher. […] This step—actually seeing how they've understood it—tells me more than any test.* (Teacher 7)

Observations

The majority of teachers relied on observational techniques and alternative assessments to evaluate student understanding. They reviewed classroom work, engaged with students during lessons, and used these interactions to assess comprehension and progress. Teachers valued this approach for providing real-time insights into student needs, enabling them to adjust their instruction accordingly.

DMT and AVI

All teachers used the DMT (Three-Minute Test) for weaker readers at the beginning and middle of the school year to track progress. Four teachers also utilized the AVI test as an additional tool. Preferences between the two were evenly split.

Teachers who favored the DMT appreciated its ability to provide clear insights into students' technical reading skills. They valued the lack of contextual cues in the test, as it prevented students from relying on predictive reading strategies and instead highlighted areas where technical reading needed improvement. Conversely, teachers who preferred the AVI test found it more informative for gauging overall reading fluency within the context of actual texts, which they believed gave a broader picture of student capabilities. Moreover, two teachers also found that the DMT has a stress-factor for students: time.

> *I find the AVI test more useful—it tells me more about how a child reads compared to a DMT test. The issue with the DMT is that it's timed, and some children get very stressed about that. They notice your phone on the table with the timer, of course, and they're keenly aware of it. There are children who think slowly, speak slowly, and therefore read slowly. This has nothing to do with their ability to read but rather with their pace.*(Teacher 8)

CITO and IEP

Experiences were also divided regarding the alignment of methods with standardized tests such as CITO and IEP. Teachers using *Atlantis* observed a strong correlation between their lessons and IEP tests, noting that students performed consistently across both. However, teachers using *Nieuwsbegrip* reported significant discrepancies between their method and the content of IEP and CITO tests. They believed this misalignment confused students, as the skills and content assessed did not always match what had been practiced in class. In two out of three

cases, the IEP results were higher than expected, while in one case, the result was lower than anticipated.

5). Perceived causes

Concentration

A common concern among teachers was students' difficulty maintaining focus, particularly on lengthy or complex texts. Six teachers observed that many students struggled to stay engaged, especially when the texts required multiple cognitive steps. These concentration challenges often hindered their ability to fully process and understand the material.

Reading fluency

Reading fluency, particularly decoding challenges, was also identified as a significant barrier to comprehension. Teachers pointed out that dyslexic students in particular, found it difficult to decode words efficiently, which in turn affected their ability to grasp meaning from the texts. This issue often meant that these students couldn't fully engage with the content, impacting their overall reading comprehension scores.

Learning difficulties

Dyslexia was highlighted as a key learning difficulty affecting some students. Teachers emphasized that students with dyslexia often struggled with the technical aspects of reading, which impeded their ability to understand the material. However, despite this challenge, all teachers noted that no special approaches were implemented specifically for dyslexic students, apart from the provision of three additional 20-minute reading sessions each week in the classroom.

> *We have two who have dyslexia, so yes, that's definitely the cause, but there's no separate plan for that, no, just three times 20 minutes of reading.* (Teacher 7)

However, two teachers noted that these children did get help for their dyslexia out of school with an institution called *CEDIN*. They do get updates sometimes from CEDIN, but not on a regular basis.

In addition to dyslexia, students with ADHD and ASD were also mentioned as part of the weaker reader groups. Four teachers, who had students with ADHD in their weaker reading groups, indicated that the primary challenge these students faced was concentration. Despite this, they reported not using any specific interventions or approaches tailored to ADHD or ASD students. They noted that the strategies employed for all weaker readers, particularly regarding concentration and focus, were the same for these students. No distinct methods were applied.

Environmental factors

Environmental factors were also noted as a contributing factor to low reading comprehension. Three teachers observed that students from lower socioeconomic backgrounds often had limited vocabulary, which further hindered their comprehension abilities. The teachers explained that these students' lower vocabulary knowledge made it more difficult for them to understand texts and the language used within them, creating an additional barrier to reading comprehension.

> *It's just concentration, so it's not even about reading fluency or comprehension, [...] it's just daydreaming*. (Teacher 5)

Motivation

Motivation was identified as a key factor in reading comprehension. Five out of eight teachers noted that students engaged more with texts when they were interested or familiar with the topic. Three of these teachers linked this increased motivation to higher self-confidence, as students felt less afraid of mistakes and could better connect prior knowledge to the text, leading to more successful reading.

Differences and similarities between interventions and teacher approaches (RQ 3)

In answering the third research question, the following paragraphs will show the findings of the comparative analysis between the interventions identified in the selective search review—Close Reading, ISA-X, LIST, and DENK—and the approaches reported by teachers during the interviews. Each intervention is summarized based on its key aspects, followed by an analysis of similarities and differences with teacher practices.

Close Reading

Close Reading involves repeated readings of a text to uncover deeper meanings, emphasizing critical thinking, vocabulary, and comprehension. It requires structured guidance from teachers to help students analyze the text in detail.

Teacher practices show some alignment with this intervention. Seven teachers encourage critical analysis of texts by focusing on vocabulary and asking questions to guide understanding. Pre-teaching strategies, such as having teaching assistants read texts aloud, also resemble aspects of the guided support integral to Close Reading, where the focus is to decrease the workload of the working memory.

However, the structured repetition that is central to Close Reading is not implemented by teachers, who tend to prioritize covering new material over revisiting texts multiple times. Furthermore, the tasks associated with deeper text analysis are less varied in teacher practices, which limits opportunities for students to critically engage with texts in the same manner promoted by Close Reading.

ISA-X

ISA-X integrates one-on-one instruction with mini-lessons and strategic reading activities, focusing on both phonics-based and meaning-based strategies. It places significant emphasis on fostering independent learning and motivation.

Similar to Close Reading, teacher practices partially reflect ISA-X. All teachers provide additional support to struggling readers via small-group sessions, which echo the individualized instruction aspect of ISA-X. Additionally, vocabulary-building activities, such as discussing key words, align with ISA-X's focus on meaning-based strategies.

Nevertheless, there are clear differences. Five out of eight teachers do not explicitly combine phonics-based strategies with comprehension strategies, a key component of ISA-X. Instead, phonics support is often limited to isolated fluency exercises rather than an integrated approach. Moreover, while ISA-X emphasizes motivation by tailoring texts to student interests or using thematic learning, this aspect is underutilized in teacher practices. This is however present at one school, where the teachers do use thematic learning.

LIST

LIST employs a whole-school approach that emphasizes reading fluency, comprehension, and motivation. It includes a tiered model of differentiated instruction and promotes reading a minimum of 25 age-appropriate books annually.

Building on the elements seen in ISA-X, teacher practices show some alignment with LIST's approach. Three teachers differentiate instruction by providing lower-level texts, reflecting LIST's tiered model. Also, there is some effort to encourage reading for enjoyment, as teachers aim to build student confidence by linking lessons to familiar topics. Teachers using the Atlantis method also work on reading motivation by doing book presentations.

However, LIST's systematic emphasis on reading motivation, such as encouraging students to select and read a set number of books annually, is not mirrored in any of the teacher practices. Additionally, while professional development and collaboration are essential to LIST's success, these components are not explicitly reflected in the practices described by teachers, suggesting a potential gap in implementation.

DENK

DENK integrates knowledge-building, reading strategies, and motivation enhancement, often through thematic units tied to subjects like history or geography. It emphasizes structured discussions and meaningful projects to deepen comprehension.

As seen with LIST, teacher practices show some overlap with DENK's approach. The occasional integration of reading comprehension into other subjects resembles DENK's thematic focus. Vocabulary discussions during pre-teaching also reflect DENK's emphasis on building knowledge as a foundation for comprehension.

Yet, there are notable differences. Teachers do not consistently employ structured discussions or meaningful projects to deepen comprehension, which are central elements of DENK's design. Additionally, while thematic units tied to broader subject knowledge are occasionally present, they lack the intentional, long-term focus emphasized in DENK, limiting their impact on reading comprehension.

Discussion

This discussion analyzes the results in relation to existing literature to address the main research question: *To what extent can support in reading comprehension be enhanced in the upper grades of School Board X for students failing to meet the target proficiency level?* The findings are examined through key themes, providing insight into how current practices align with or differ from the literature. By comparing School Board X's approaches with established research, this discussion identifies potential improvements and suggests strategies for better supporting struggling students. The strengths and limitations of the study will also be discussed, along with implications and directions for future research.

Interpretation of the results

Method-related support

The findings highlight that the choice of instructional method significantly influences not only the diversity and quality of texts and assignments but also the structure and efficacy of extra instruction provided to students. Additionally, teacher-initiated thematic approaches offer an alternative perspective on how reading comprehension can be integrated across subjects.

Firstly, Bogeards et al. (2022) and Pyle et al. (2017) underscore the importance of exposing students to a variety of text types, as this fosters vocabulary growth, improves comprehension strategies across contexts, and prepares students for diverse real-world reading demands. Teachers using *Atlantis* consistently praised the method for its inclusion of varied text genres and rich vocabulary, which they felt enhanced student engagement and learning. In contrast, teachers relying on *Nieuwsbegrip* noted a lack of diversity in text formats and expressed concerns about the repetitive nature and limited vocabulary richness of the materials.

A notable alternative to these methods was the thematic approach employed by one teacher, which involved integrating reading comprehension into broader subjects like social studies and science. The selected texts were varied, rich in vocabulary, and closely aligned with the themes students were exploring. The primary objective was to foster greater motivation for reading. This approach aligns closely with *DENK*, as it emphasizes thematic connections and integrates reading comprehension across the curriculum. Research highlights that reading motivation plays a critical role in enhancing comprehension, with students more likely to engage deeply with texts that feel relevant and meaningful (Catts & Kamhi, 2017). The thematic approach appears to stimulate motivation by connecting reading tasks to real-world topics and fostering curiosity. However, a critical drawback is the intensive preparation required from teachers to design high-quality, thematic lessons. Relying heavily on individual teacher-designed thematic lessons can lead to challenges in maintaining consistency and continuity across

classrooms. While not dismissing this approach, it highlights the importance of balancing teacher autonomy with structured support to ensure both creativity and continuity in teaching.

Secondly, the same principles apply to assignments. According to the literature, a variety of task types can enhance reading comprehension, particularly when assignments require active processing of texts—transforming the text from the end goal to a means of completing a task (e.g., following a recipe or solving a problem) (Bogeards et al., 2022; Houtveen et al., 2019).

Teachers using *Nieuwsbegrip* noted that assignments often felt repetitive, with similar question structures across lessons. While some appreciated the focus on reading strategies, the research of Pyle et al (2017) cautions against overemphasizing strategy instruction. While certain strategies, such as summarizing or making inferences, are beneficial, endless repetition can be counterproductive (Catts & Kamhi, 2017). Strategies are most effective when there is a lack of background knowledge or vocabulary, but comprehension is more reliably supported through broader approaches that emphasize vocabulary building and knowledge acquisition (Perfetti & Stafura, 2014).

In contrast, teachers using *Atlantis* praised the assignments for focusing on knowledge building and inference-making, aligning with recommendations in the study of Perfetti and Stafura (2014). These types of tasks are seen as more effective in promoting deep comprehension, as they encourage students to engage with texts actively and apply their understanding in meaningful ways.

Thirdly, a significant disparity was noted between the methods regarding the structure and support provided for extra instruction. Teachers using *Atlantis* appreciated the method's structured approach, particularly its focus on pre-teaching. This strategy was frequently employed to help students prepare for upcoming lessons. However, many of these teachers admitted relying primarily on pre-teaching and underutilizing other supplemental tools offered by the method, such as simplified texts or review exercises. Conversely, teachers using

Nieuwsbegrip expressed frustration with the lack of clear guidance for extra instruction, which they felt required significant self-initiative to organize. This absence of structure made it challenging to address specific student needs systematically.

The research of Pearson (2006) suggests that effective extra instruction can take multiple forms, depending on the specific challenges students face. For instance, when students struggle with decoding, listening to a read-aloud version of the text can support their comprehension by bypassing decoding difficulties (Kudo et al., 2015). In cases where students lack prior knowledge, extra instruction should focus on building this foundational knowledge, which can be achieved through discussions, multimedia resources, or explicit teaching of key concepts (McNamara & Kitsch, 1996; Leonard et al., 2024).

Thus, tailoring extra instruction to the nature of the difficulty—whether it involves decoding or knowledge gaps—is essential for supporting reading comprehension effectively. Combining structured support with adaptive strategies could provide a balanced approach that benefits a wider range of learners.

Additional support

The Response to Intervention (RTI) model underpins much of the support described, particularly through Tier 2 pre-teaching strategies (Arias-Grundin et al, 2021). However, as highlighted in the results, the implementation of Tier 3 interventions—which involve more intensive, individualized support—remains inconsistent. Teachers rely primarily on informal assessments and general classroom strategies rather than structured diagnostic tools or tailored interventions. This gap aligns with the study of Arias-Grundin et al. (2021) emphasizing the need for systematic monitoring and differentiated support for students with severe challenges.

The theoretical framework and interventions like LIST and DENK stress the importance of motivation and thematic, knowledge-rich approaches (Houtveen et al., 2018; 2012). While

one teacher integrated thematic learning—linking reading comprehension to subjects like social studies—these practices lack the structured intentionality seen in interventions such as DENK. Motivation, a key driver of comprehension success, remains underdeveloped in many classrooms. Practices like encouraging self-selected reading or connecting texts to student interests are inconsistently applied, despite evidence suggesting their efficacy in fostering engagement.

Technological tools, such as Alinea and interventions like Close Reading and ISA-X, offer structured, multi-faceted approaches to support (Fischer & Frey, 2014; Gelzheiser et al., 2011). However, teacher awareness and utilization of such resources are limited. Theoretical recommendations for integrating phonics, vocabulary building, and critical analysis into reading support (Kalamanski et al., 2008) are only partially reflected in classroom practices.

Pre-teaching

Pre-teaching is a form of additional support that all teachers at School Board X apply, though its implementation varies significantly. According to literature, pre-teaching is considered a valuable approach, especially when it is tailored to address specific underlying issues faced by students. However, in most cases observed with the interviewed teachers, pre-teaching is not applied in such a targeted way. While extra attention is given through support from teaching assistants, the same approach is used for all students, regardless of their individual challenges.

Three common pre-teaching methods employed by teachers at School Board X include reading the text aloud, having students read together, and discussing difficult words. A priori, these methods are valid, yet they fail to adequately address the underlying issues. Kitsch (2018) suggests that expanding vocabulary by discussing difficult words is useful, but when reading difficulties stem from decoding challenges, a focus on practicing specific word types may be

more beneficial according to Groot et al. (2015). Some teachers explicitly mentioned incorporating word lists after a DMT test, but this is not part of the pre-teaching approach. Furthermore, while teachers focus on defining words, Alkan and Ulas (2023) and Perfetti and Stafura (2014) emphasize the importance of connecting new words to a broader word network in order to deepen understanding and build vocabulary effectively.

Assessment

Assessment plays a crucial role in identifying the underlying causes of reading comprehension difficulties, as it provides insights into a student's specific challenges(Arias-Grundin et al. (2021). However, the way assessments are conducted and subsequently analyzed can vary significantly, influencing their effectiveness (Pyle et al, 2017). Schools rely on formal assessments, most notably the IEP test, which is used twice a year to gauge reading proficiency. Teachers generally express positive feedback about the IEP test, noting that the texts are well-suited to students' levels and the questions accurately assess comprehension.

In addition to the IEP test, some teachers use method-specific tests to pinpoint potential gaps in students' skills. However, there is a discrepancy in how useful these tests are perceived. Teachers using *Nieuwsbegrip* reported not applying any method-based tests, citing a mismatch between *Nieuwsbegrip* and the IEP test format. In contrast, teachers using *Atlantis* indicated that some of these method-based tests align more closely with the IEP, but still noted differences, particularly in the perceived ease of the IEP test for students. This discrepancy aligns with literature suggesting that for an assessment to be effective, the context of the assessment should mirror the learning situation, which can be particularly challenging when assessing reading comprehension (Perfetti & Hart, 2002). As Houtveen et al., 2019 suggest, reading comprehension tests should ideally focus on assessing a student's ability to use texts as tools to achieve a goal, rather than simply answering questions about the text itself, which complicates the design of reading comprehension assessments.

While some teachers prefer to rely on observations to gauge student progress, this method contradicts the literature, which stresses the importance of structured assessments for identifying reading comprehension issues. Observations, while valuable, lack the systematic approach necessary to accurately pinpoint specific underlying causes. The research of Gelzheiser et al. (2019) suggests that a well-structured assessment can guide the implementation of targeted interventions to address specific challenges. However, none of the teachers interviewed employed a structured model for observations, and such assessments were highly dependent on individual teacher practices.

Despite this variability, some teachers use DMT and AVI assessments to measure certain aspects of reading, such as reading fluency at the word and sentence levels. These assessments, taken twice a year, are particularly useful for identifying reading difficulties in struggling readers. DMT assessments are more frequently administered to weaker readers to evaluate their current levels, and this data provides a more targeted approach to understanding reading challenges. However, this practice is limited to a small number of teachers (two), further emphasizing the need for a more consistent and structured approach to assessing reading comprehension across the board.

Perceived causes

As previously discussed, identifying the underlying causes of reading comprehension difficulties is crucial for determining appropriate support. The causes of these difficulties often stem from issues with decoding, constructing meaning, and integrating prior knowledge. These factors can help explain many challenges students face in reading comprehension. However, teachers often attribute reading difficulties primarily to a lack of concentration. Literature, however, suggests that a lack of concentration is frequently tied to a lack of motivation (Groot et al., 2015). This aligns with the focus of several interventions (DENK, LIST, ISA X) on boosting reading motivation, as motivation is a critical precondition for effective reading. When

motivation is lacking, students are less likely to engage in the cognitive processes of decoding, constructing meaning, and integrating new information.

Furthermore, the research of Pearson (2006) and Kitsch (2018) highlight that activities where the text serves as a means to an end—rather than the sole focus—can enhance motivation. This suggests that an engaging task, where reading is a tool to achieve a broader goal, may improve comprehension. In short, motivation appears to be a necessary condition before decoding, meaning construction, and integration with prior knowledge can take place effectively.

In addition to general motivation issues, special educational needs also contribute to difficulties with reading comprehension. Conditions such as dyslexia, ADHD, and ASD are known to impact students' reading abilities. While teachers unanimously acknowledge that dyslexia is a significant factor in reading comprehension challenges, there are no customized support plans in place for these students. One teacher mentioned that students with dyslexia receive outside-of-school help, which is a more intensive, individualized form of support. However, there are no systematic interventions specifically targeting dyslexic students' unique reading difficulties within the regular classroom setting.

Interestingly, teachers did not mention ADHD or ASD as factors contributing to reading comprehension struggles. This contrasts with Denckla et al. (2013) and Groot et al. (2015), which stresses that students with ADHD, ASD, or dyslexia often experience significant barriers to reading comprehension due to their conditions. A more targeted approach, where specific challenges faced by these students are addressed, could lead to more effective support. Although the current support in place may still be helpful, it is potentially insufficient for addressing the specific needs of students with these learning difficulties.

Environmental factors, such as the socio-economic context in which students live, can also play a role in reading comprehension difficulties. Two teachers noted that the rural areas

where students reside influence their vocabulary development, which aligns with existing literature. These teachers suggested that students from more rural areas may have limited access to a rich language environment, which can impact their vocabulary and reading comprehension.

Although no teachers mentioned multilingualism as a factor contributing to reading difficulties, Marinova Todd et al. (2013) and Langeloo et al. (2019) emphasize its importance. Students who speak more than one language may face challenges with reading comprehension due to language interference or differences in language proficiency. Recognizing and addressing this factor is critical in providing adequate support for multilingual students, who may require targeted vocabulary development and language support to succeed in reading comprehension tasks.

Practical implications for School Board X

The findings of the discussion have several practical implications for improving reading comprehension support in the upper grades. This leads to the central question of the study: *To what extent can support in reading comprehension be enhanced in the upper grades of School Board X for students failing to meet the target proficiency level?* The following section examines this question by integrating key insights from the discussion and outlining strategies to strengthen reading comprehension support for these students.

Firstly, a critical starting point is the selection of an appropriate instructional method, as this choice significantly influences the diversity and quality of texts, the variety of assignments, and the structure of extra support provided to students. Methods that include diverse texts and assignments aligned with best practices can enhance student engagement, vocabulary development, and comprehension skills, while also fostering motivation and deeper learning.

Assignments for example, benefit greatly from a thoughtful method choice. Rather than repetitive tasks, assignments should encourage active text processing and knowledge

application. Real-world tasks, such as solving problems or following instructions, can better promote comprehension and maintain student interest. Alongside these improvements, extra instructional support must be more structured and tailored to students' individual needs. For instance, pre-teaching strategies or the use of multimedia resources, such as online text processing tools, which can address specific challenges like decoding difficulties or gaps in prior knowledge.

Secondly, assessment practices play a critical role in identifying reading difficulties. Schools should combine structured diagnostic tools with observations to pinpoint specific challenges. These assessments should focus on practical applications of text, aligning closely with students' learning experiences in the classroom. Moreover, boosting students' motivation is essential for successful reading comprehension. Strategies such as self-selected reading or linking texts to students' interests should be consistently implemented. Engaging tasks that present reading as a tool to achieve broader goals can further enhance motivation and comprehension.

Thirdly, for students with special educational needs, such as dyslexia, ADHD, or ASD, more targeted support is required. Systematic interventions and individualized plans should be developed to address their unique challenges and ensure inclusivity in the classroom. Environmental and linguistic factors also need attention. Students from rural areas or multilingual backgrounds may benefit from targeted vocabulary development and additional language support to bridge socio-economic and linguistic gaps.

Finally, schools should explore whether specific interventions that have proven effective elsewhere could be implemented, depending on the challenges identified. Interventions such as Close Reading, ISA-X, or other technology-supported approaches might address key issues when adapted to the context of the school. A careful evaluation of these tools could help determine their relevance and impact for improving student outcomes.

Methodological limitations and future research

This study has several limitations that should be considered when interpreting the results. Firstly, the sample size for the interviews was small, consisting of only eight teachers. However, each teacher was selected based on relevant experience with upper grade reading comprehension, ensuring valuable insights despite the small sample. Future research could involve a larger sample size to capture a more diverse range of perspectives from educators across different schools and contexts.

Regarding the selective search review, only one expert was consulted, which may limit the variety of viewpoints. To strengthen the findings, future studies should involve multiple experts with different areas of expertise. Additionally, three of the five sources reviewed were by the same lead author, which may narrow the breadth of perspectives in literature. Further research could include a wider variety of studies in the review to provide a more comprehensive overview of interventions.

Furthermore, although all interviewed teachers had substantial experience with reading comprehension, one teacher was not currently teaching upper grades, and two were not directly involved in teaching reading comprehension at the time. This became apparent during the interviews but did not undermine the relevance of their past experience. Future studies should ensure that all participants are currently involved in the relevant grade level or subject to enhance the accuracy of their perspectives.

Despite these limitations, the study's well-established coding scheme, with strong inter-rater reliability, ensures reliable and valid results. Overall, the inter-rater reliability was 75%, with a higher agreement of approximately 85% when considering only the main themes and subthemes. However, greater discrepancies were observed in the sub-subthemes. This could be attributed to their increased specificity, which may leave more room for subjective interpretation, or to the inherently nuanced nature of these categories, making them more

challenging to code consistently. An audit trail was maintained throughout the process, and the findings were reviewed by a peer student, adding an extra layer of reliability.

Implications for future research include expanding the sample size of interviews, consulting multiple experts for broader insights, and incorporating a wider range of studies in the selective search review. This would not only enrich the findings of this study but also contribute to the development of more nuanced and effective reading comprehension interventions. Additionally, future research could be built on this study by exploring the specific impact of different interventions and support strategies on student outcomes in upper-grade classrooms.

In conclusion, while the study has several limitations, they do not invalidate the insights it offers regarding reading comprehension support in upper-grade classrooms. Although the sample size was small and other constraints were present, the research still provides valuable perspectives that can serve as a foundation for future studies. These limitations highlight areas for improvement, such as increasing the sample size and broadening the scope of expert consultation. Future research can build on these findings, offering a more comprehensive understanding of effective interventions and teaching strategies to support reading comprehension in upper-grade students.

Reflexivity

As a Caucasian female teacher from the Netherlands, the researcher brings both personal and professional perspectives to this study. With a background in Pedagogical and Educational Sciences and four years of teaching and internship experience in the upper grades, she combines theoretical knowledge with practical expertise. This familiarity aided in formulating targeted questions and conducting nuanced data analysis. Aware of potential biases arising from her dual role as teacher and researcher, a reflexive approach was adopted to critically examine assumptions. Data interpretations were validated through cross-checking to ensure the findings reflected participants' experiences rather than the researcher's perspective.

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Appendix A

Questions to specialist

Specifieke ondersteuningsbehoeften:

- Welke specifieke interventies zijn effectief voor dyslectische leerlingen om begrijpend lezen te bevorderen, en hoe kan een leerkracht deze integreren in een drukke klasomgeving?
- Hoe kan een leerkracht omgaan met de concentratieproblemen van leerlingen met ADHD tijdens begrijpend lezen, zonder de rest van de klas te benadelen?
- Wat zijn de beste manieren om tekstbegrip en sociale aspecten van taal (zoals inferenties) te ondersteunen bij leerlingen met ASS?

Differentiatie en materialen:

- Zijn er specifieke materialen of technologieën die worden aanbevolen voor begrijpend lezen bij leerlingen met extra ondersteuningsbehoeften?
- Hoe kan een school effectief differentiëren in grote klassen, en wat is de rol van kleine groepjes of individuele sessies hierbij?

Professionalisering van leerkrachten:

- Welke kennis of vaardigheden zouden leerkrachten moeten hebben om beter in te spelen op deze extra ondersteuningsbehoeften? Zijn er specifieke trainingen of cursussen die u aanbeveelt?
- Wat zijn goede manieren voor leerkrachten om te reflecteren op de effectiviteit van hun aanpak bij begrijpend lezen?

Samenwerking en ondersteuning:

- Wat is de optimale manier om intern en extern samen te werken met specialisten, zoals orthopedagogen of logopedisten, om deze leerlingen te ondersteunen?

Evaluatie en monitoring

- Hoe kan een school de effectiviteit van interventies gericht op begrijpend lezen bij leerlingen met ondersteuningsbehoeften monitoren en evalueren?
- Wat zijn de belangrijkste overwegingen bij het ontwikkelen van een langetermijnstrategie om begrijpend lezen voor deze doelgroep te verbeteren?

Innovatie en trends:

- Welke recente innovaties op het gebied van begrijpend lezen en extra ondersteuningsbehoeften ziet u als veelbelovend?
- Hoe denkt u dat de ondersteuning van begrijpend lezen voor deze doelgroep zich in de komende jaren zal ontwikkelen?

Appendix B

e-mail invitation to google forms

Beste directie,

Bedankt voor uw medewerking aan het onderzoek over ondersteuning bij begrijpend lezen in de bovenbouw binnen schoolbestuur X. Graag zou ik u willen vragen om in dit formulier een bovenbouwleerkracht op te geven voor deelname aan het onderzoek. Dit houdt in dat wij deze leerkracht mogen interviewen. Uiteraard wordt hier nog officieel toestemming om gevraagd aan de leerkracht zelf. Dit kunt u zien als de wervingsprocedure.

De leerkracht moet voldoen aan de volgende eisen:

1. De leerkracht is een bovenbouwleerkracht (groet 7/8)
2. De leerkracht is voor minimaal twee jaar werkzaam binnen de bovenbouw.
3. De leerkracht geeft aankomend jaar begrijpend lezen en heeft ook dit jaar begrijpend lezen gegeven

Aalvast bedankt voor uw medewerking! Voor vragen kunt u het onderstaande e-mailadres contacteren.

Met vriendelijke groet,

Marleen Schuiten
m.schuiten@student.rug.nl
Masterstudent onderwijswetenschappen
Rijksuniversiteit Groningen

rijksuniversiteit groningen

Appendix C

Informationletter

Groningen, 28-06-2024

Beste bovenbouwleerkracht,

Recente bevindingen van het *Program for International Student Assessment* (PISA) benadrukken het grote belang van leesvaardigheid in het onderwijs, vooral in landen die hiermee ondermaats presteren. In Nederland heeft het laatste PISA-rapport een zorgwekkende realiteit laten zien: een aanzienlijk deel van de leerlingen haalt niet het gewenste niveau van leesvaardigheid. Zo heeft scholengemeenschap X een vraag uitgezet bij de Rijksuniversiteit Groningen (RUG) om te kijken naar de ondersteuning bij het begrijpend leesonderwijs, met name in de bovenbouw. Het onderzoek wordt uitgevoerd door Marleen Schuiten, student aan de master Onderwijswetenschappen, en wordt begeleid door dr. Mariëtte Hingstman. Om meer te weten te komen over hoe bovenbouwleerkrachten (hulp)middelen en ondersteuning inzetten bij begrijpend lezen, worden in dit onderzoek bovenbouwleerkrachten binnen scholengemeenschap X bevraagd over hun ervaringen. Dit betreft een bevraging onder leerkrachten die lesgeven aan groep 7 en 8.

Wat betekent deelname aan het onderzoek voor u?

Via een interview wordt nagegaan hoe bovenbouwleerkrachten de ondersteuningsmiddelen en momenten ervaren en hoe zij deze inzetten. Het interview duurt maximaal 60 minuten en zullen op school of online plaatsvinden.

Toestemming

Voorafgaand aan het onderzoek vragen we uw toestemming om mee te doen aan het onderzoek. Meedoen aan het onderzoek is vrijwillig en u kunt op ieder moment stoppen. Als u tijdens het interview niet meer verder wilt, dan mag u stoppen. Dit kunt u aangeven bij de gespreksleider. We hopen natuurlijk dat u mee wilt doen.

Gebruik en bewaren gegevens

Alle antwoorden die u geeft tijdens het interview, worden vertrouwelijk behandeld. Dit betekent dat de uitgeschreven gesprekken beveiligd worden bewaard op een schijf van de RUG en dat alleen de onderzoeker en begeleider de uitgeschreven gesprekken (in geanonimiseerde vorm) in kunnen zien.

We willlen graag geluidsopnames maken van het interview, zodat we de gegevens achteraf goed kan verwerken. De geluidsopnames worden eveneens opgeslagen in een beveiligde omgeving binnen de RUG waar alleen ik toegang toe heb. . Bij het verwerken van de gegevens gebruiken we geen echte namen van leerkrachten of scholen. Dit betekent dat de onderzoeksresultaten nooit naar u te herleiden zijn.

Uw rechten

Als u niet langer wilt deelnemen aan het onderzoek, kunt u dit aangeven bij de onderzoeker. Uw gegevens worden dan verwijderd uit de databestanden. Dit is mogelijk tot aan het moment dat de gegevens geanalyseerd worden (*november 2024*). Als u vragen heeft over privacy, kunt u ook contact

opnemen met de onderzoeker. Mocht de onderzoeker uw vraag niet kunnen beantwoorden dan kunt u deze voorleggen aan de Functionaris Gegevensbescherming van de Rijksuniversiteit Groningen (via privacy@rug.nl).

Behoefte aan meer informatie?

Mocht u meer willen weten over het onderzoek, dan kunt u contact opnemen met ondergetekende.

Met vriendelijke groet,

Marleen Schuiten

Rijksuniversiteit Groningen

m.schuiten@student.rug.nl

Appendix D

Permission form

rijksuniversiteit groningen

Toestemmingsformulier

Geachte docent,

Via dit formulier kun je aangeven of je deel wilt nemen aan een interview in het kader van het onderzoek naar begrijpend lezen in de bovenbouw.

- Ik heb de uitleg over het onderzoek goed doorgelezen. Ik begrijp wat deelname aan het onderzoek inhoudt.
- Ik begrijp dat deelname aan het onderzoek vrijwillig is. Ik kies er zelf voor om deel te nemen. Ik kan op elk moment stoppen met deelname. Als ik besluit om te stoppen met deelname, hoef ik hiervoor geen reden op te geven.

Ik, ...,
docent voor groep 6/7/8

geef toestemming voor de deelname aan het interview over begrijpend lezen in de bovenbouw, waaronder het gebruik van geluidsopnames van het interview.

☐ Ja, ik geef **wel toestemming** voor deelname aan het interview; deze toestemming loopt tot en met februari 2026.

☐ Nee, ik geef **geen toestemming** om deel te nemen aan het onderzoek.

Handtekening Plaats Datum

N.B. Als deelnemer aan het onderzoek heeft u recht op een kopie van deze geïnformeerde toestemming

Appendix E

Interview Guide

Interview gids

Mijn naam is Marleen Schuiten, ik ben een student Onderwijswetenschappen aan de Rijksuniversiteit in Groningen en ik doe onderzoek naar de ondersteuning bij begrijpend lezen in de bovenbouw binnen de scholengemeenschap X

Allereerst wil ik u bedanken voor uw deelname aan het onderzoek en het vrijmaken van tijd voor dit interview. In dit gesprek zullen uw ervaringen met betrekking tot ondersteuning bij begrijpend lezen aan bovenbouwleerlingen centraal staan.

Het gesprek zal maximaal een uur duren. Het gesprek zal alleen met uw toestemming worden opgenomen. De geluidsopnamen zullen worden opgeslagen in een beveiligde omgeving binnen de Rijksuniversiteit Groningen waar alleen ik toegang toe heb, conform de richtlijnen van de Algemene verordening Gegevensbescherming (AVG) en het GMW-datamanagement protocol. Geeft u hier toestemming voor?

De resultaten van het onderzoek zullen vertrouwelijk worden behandeld. Er zullen geen namen van leerkrachten of scholen in de scriptie worden genoemd, ik maak gebruik van pseudoniemen.

Beginvragen

Allereerst zou ik graag wat gegevens over u en de school noteren, zodat ik in mijn scriptie een goed beeld kan geven van de mensen die ik heb gesproken en de scholen waarover het gaat.

- Naam
- Leeftijd
- Groep 7/ Groep 8/ Groep 7/8 / Groep 6/7/8/
- Hoeveel jaren geeft u al les?
- Hoeveel jaren heeft u ervaring in de bovenbouw?
- Vervult u daarnaast ook een andere functie binnen de school? *(bijv. leescoördinatorschap)*
- Wat verstaat u onder begrijpend lezen?
- Welke methode(s) gebruikt uw school voor begrijpend lezen?
- Welke methode(s) gebruikt uw school voor technisch lezen?

Methode-gebonden ondersteuning	• Hoe is de methode voor begrijpend lezen ingericht qua aanbod voor de basisgroep (B/C) vs de min groep /zwakke lezers(de kinderen met een D/E)? • Wat is de aanpak van de min groep tijdens de les volgens de methode? • Hoe verschilt de aanpak t.o.v. de basisgroep? • Wordt er door de methode een vorm van ondersteuning naast de reguliere les (bv. pre-teaching) geadviseerd? Zo ja uit welke onderdelen bestaat dit? • Hoe vaak in de week en hoe lang per keer? • Hoe ervaart u de methode gebonden ondersteuning? • In hoeverre biedt de methode volgens u ruimte voor differentiatie voor zwakke lezers? • Zijn er specifieke aanpassingen die u maakt binnen de methode om hen te helpen?
Oorzaken	• Wat zijn volgens u de problemen die de lage scores in de groep veroorzaken bij begrijpend lezen? • Ziet u verbanden tussen bepaalde leerlingkenmerken en hun prestaties op begrijpend lezen? • Zijn in uw beleving de oorzaken terug te herleiden naar één specifiek onderdeel? Zo nee, waarin verschillen ze? • Wanneer zijn volgens u de problemen ontstaan (afhankelijk van elke oorzaak)?
Extra ondersteuning	• Welke ondersteuning wordt er aan leerlingen van de mingroep geboden buiten de methode om? • Is er een onderwijsassistent of extra leerkracht aanwezig? Zo ja, hoe wordt deze ingezet voor het ondersteunen bij begrijpend lezen? • Hoe vaak wordt extra ondersteuning ingezet? • Is er ook ondersteuning die de leerlingen zelfstandig doen? • Welke vormen van ondersteuning zijn naar uw idee het meest effectief?

	• Wat maakt dat u de desbetreffende vorm effectief vindt? • Wanneer maakt u de beslissing om van de methode af te wijken? • Bent u ook bekend met programma's of interventies rondom (begrijpend) lezen? Zo ja, wat zijn uw ervaringen hiermee?
Speciale onderwijsbehoeften	• Zijn er leerlingen in de klas die in de mingroep zitten met een speciale onderwijsbehoefte? • Wat voor type ondersteuningsplan hebben zij? • In hoeverre heeft het ondersteuningsplan invloed op de lessen begrijpend leze? • Is er voor deze leerlingen een handelingsplan m.b.t. begrijpend lezen? • In hoeverre pas je je instructie aan op basis van de speciale onderwijsbehoeften van deze leerlingen? Kun je voorbeelden geven?
Integratie	• Wordt er in andere vakgebieden nog extra aandacht besteed aan begrijpend lezen? Wanneer kies je hiervoor?
Omgeving	• Hoe creëer je een leeromgeving die zwakke lezers ondersteunt bij begrijpend lezen? Welke aanpassingen maak je in de klas of de materialen? • Waarom kiest u voor genoemde aanpassingen?
Meting	• Welke wijze gebruikt u om het niveau van begrijpend lezen van zwakke lezers te meten en te monitoren? • Hoe wordt technisch lezen getoetst? • Hoe vaak worden de toetsen/metingen afgenomen per jaar? • In hoeverre geven de resultaten van deze metingen naar uw idee een nauwkeurig beeld van de begrijpend leesvaardigheid? • Waar let u op bij de analyses van de toetsen?

Appendix F

Code book

Theme	Subtheme	Reference	Sub sub theme
Method	Texts differences	Houtveen et al (2019)	Hindrance
	Extra instruction	Kintsch (2018)	Succes factor
	Assignment	Pyle et al. (2017)	Curriculum adaption
	Method choice		Approach adaption
Additional support	Cooperative	Siegler, 2014; Verhallen & Walst (2011)	Reading fluency
	Extra materials	Houtveen et al. (2019)	Special Educational Needs
	Use of technology	Leonard et al. (2024); Houtveen et al. (2019)	Analysis
	Interventions/tools	Bogaerds-Hazenberg et al. (2022) Houtveen et al. (2012); Houtveen (2018); Fischer & Frey (2014)	Teacher effort
Pre-teaching	TA reading	Paus & Bacchini (2019)	Motivation
	text reading	Akan et al (2023);	
	Reading fluency	Baddeley et al. (2019);	
	Knowledge build up	McNamara & Kitsch(1996); Perfetti & Stafura (2014)	
Assessment	DMT		
	AVI		
	CITO/IEP		
	Observations	Gelzheiser et al (2011)	
	Method bound tests	Arias-Gundín et al. (2021)	
Perceived Causes	Concentration	Denckla et al. (2013); Groot et al. (2015)	
	Motivation	Houtveen et al (2012); Houtveen et al. (2019)	
	Reading Fluency	Perfetti & Hart (2002); Grant & Booth (2009); Baddeley et al. (2019)	
	Learning difficulties	Denckla et al. (2013); Kudo et al. (2015)	
	Environmental factors	Marinova-Todd et al. (2013); Langeloo et al., (2019)	

Appendix G

Audit trail & report student

Theme	Subtheme	Reference	Sub sub theme
Method	Texts differences	Houtveen et al (2019)	Hindrance
	Extra instruction	Kintsch (2018)	Succes factor
	Assignment	Pyle et al. (2017)	Curriculum adaption
	Method choice***		Approach adaption
Additional support	Cooperative ***	Siegler, 2014; Verhallen & Walst (2011)	Reading fluency
	Extra materials	Houtveen et al. (2019)	Special Educational Needs
	Use of technology	Leonard et al. (2024);	Analysis
	Interventions**	Bogaerds-Hazenberg et al. (2022); Houtveen et al. (2012); Houtveen (2018); Fischer & Frey (2014)	Teacher effort
Pre-teaching*	TA reading	Paus & Bacchini (2019)	Motivation
	text reading	Akan et al (2023);	
	Reading fluency	Baddeley et al. (2019);	
	Knowledge build up	Gelzheiser et al., (2011); McNamara & Kitsch(1996); Perfetti & Stafura (2014)	
Assessment*	DMT		
	AVI		
	CITO/IEP		
	Observations**	Gelzheiser et al (2011)	
	Method bound tests	Arias-Gundín et al. (2021)	
Perceived Causes	Concentration***	Denckla et al. (2013); Groot et al. (2015)	
	Motivation **	Houtveen et al. (2012); Houtveen et al. (2019)	
	Reading Fluency	Perfetti & Hart (2002); Grant & Booth (2009); Baddeley et al. (2019)	
	Learning difficulties	Denckla et al. (2013); Kudo et al. (2015)	
	Environmental factors	Marinova-Todd et al. (2013); Langeloo et al., (2019)	

Adjustments and development of the codebook

Adjustment 1: Pilot Interview

Process: The first version of the codebook was developed based on themes identified during the pilot interview. These themes are marked with one asterisk (*****) in the final codebook.

Decisions: Reflection on the pilot interview revealed that a key overarching theme, *assessment*, was missing. Moreover, some subthemes in assessment don't have a reference as it is standard practice in Dutch schooling to have these tests. Additionally, *pre-teaching*, which was initially included as a subcode under *additional support*, was deemed too narrow in scope and was elevated to a standalone main theme.

Adjustment 2: results from the Selective Search Review

Process: After analyzing the literature on evidence-based interventions, new themes were added, such as *interventions/tools*, *observations* and *motivation*. These codes are marked with two asterisks (**).

Decisions: The new codes were integrated into the existing structure to avoid overlap. Interventions/tools fell under additional support, observations under assessment and motivation was marked as a subdomain of perceived causes.

Adjustment 3: results from the Interviews

Process: Insights from the interviews were incorporated into the codebook and are marked with three asterisks (***). The codes *method choice*, *cooperative* & *concentration* were added because they were mentioned by multiple respondents.

Decisions: There are no references for method choice and cooperative because these insights mainly stem from the respondents' input**.**

Report fellow student

De audit trail toont een duidelijke en gestructureerde aanpak bij de ontwikkeling van het codeboek, waarbij de verschillende aanpassingsfases helder worden toegelicht. Het gebruik van asterisken om de oorsprong van codes te markeren laat een methodologische zorgvuldigheid zien. Daarnaast worden de redenen achter belangrijke beslissingen, zoals het herstructureren van thema’s en het toevoegen van nieuwe codes, overtuigend onderbouwd.

Er zijn echter enkele verbeterpunten. Het is niet volledig duidelijk welke criteria zijn gehanteerd om te bepalen welke codes zijn toegevoegd, verwijderd of aangepast. Door deze criteria expliciet te maken, kan de betrouwbaarheid van het proces verder worden versterkt. Ook kan er meer toelichting worden gegeven op hoe de nieuwe codes zijn geïntegreerd in de bestaande structuur en hoe overlap is voorkomen, zodat de samenhang van het codeboek beter wordt weergegeven.

Medestudent X