

**Reading fluency and reading comprehension in dyslexic learners of English: A
Case study of a Dutch learner of English**

Ymke Verploegen

5910536

June 2021

Supervisor: Prof. Dr. Aoju Chen

Second reader: Dr. Stella Gryllia

4980 Words

Abstract

This case-study investigated whether there was an effect of prosody training on reading fluency and thereby on reading comprehension for an adult Dutch learner of English with dyslexia. A training was given targeting three different aspects of prosodic phrasing, namely pausing, final lengthening and pitch. Reading comprehension was assessed during two pre-tests and a post-test using cloze tests. Although the participant's mean scores on these tests improved, the improvement did not reach statistical significance.

Keywords: Dyslexia, prosody, prosodic phrasing, reading comprehension, reading fluency.

Contents

Contents.....	3
1. Introduction	4
2. Theoretical Background	4
2.1 Dyslexia and Reading Fluency	4
2.2 Reading Fluency, Prosody, and Comprehension.....	6
2.3 Effects of training on L2 reading.....	7
3. Research Question.....	8
4. Hypothesis.....	8
5. Methodology	9
5.1 Why a case study	9
5.2 Research design	9
5.3 Participant.....	9
5.4 Materials	10
5.4.1 Cambridge Advanced English reading test.....	10
5.4.2 Training materials	11
5.5 Procedure	11
5.6 Statistical analysis and Results	12
6. Discussion	13
7. Limitations	14
8. Further Research	17
9. Conclusion.....	18
References	20
Appendix A Training Powerpoint.....	22
Appendix B: Examples Cloze tests	28

1. Introduction

This paper reports on a case-study on the relationship between reading fluency and reading comprehension in dyslexic learners of English. In this study there is a focus on three different aspects of reading fluency that will be discussed in the theoretical background. The theoretical background also details some issues people with dyslexia face when it comes to reading comprehension. This study investigated if training reading fluency would have a positive effect on reading comprehension. The results showed improvement following the training, but the improvement did not reach statistical significance. This could be due to a variety of factors.

2. Theoretical Background

2.1 Dyslexia and Reading Fluency

Dyslexia, or developmental dyslexia, is a language disability which covers a range of problems, from trouble with spelling to difficulty with reading words (Grigorenko, 2001). It is a multifaceted condition that presents itself differently in each individual (Grigorenko, 2001). There is a general agreement that reading and spelling are impacted by dyslexia, however, the specific causes are unclear (Jones et al, 2008). Previous research has found two major deficits associated with developmental dyslexia, namely impaired phonological skills and impaired automatized lexical retrieval (Grigorenko, 2001). A study by Joannis, Manis, Keating, and Seidenberg (2000) investigated the relationship between dyslexia and three aspects of language. They mentioned that dyslexics have trouble with the correspondence between spelling and sound. That is, the phonological skills of dyslexics seem to be impaired, which makes it harder for them to acquire the expected level of reading skills (Joannis et al. 2000). They found that not all problems can be explained by phonological deficits, suggesting that there is more at play than just trouble with phonological skills. A study by Tijms (2004) examined whether verbal memory impairment and phonological deficits stem from the same root. He found that these two deficits most likely originate from the same source, namely

dysfunctional decoding of speech sounds. Phonological deficits cause dyslexics to have trouble with mapping letters onto phonemes (Hawelka & Wimmer, 2005). Although the precise causes of dyslexia are still unknown, it is clear that people with dyslexia experience issues with reading as well as spelling.

The previous paragraph established that dyslexics have trouble with reading and spelling. Thus, their reading fluency is impaired by their dyslexia. Reading fluency is defined as the ability to read a text quickly and fluently. This demands good decoding skills and quick recognition of words. Fast and accurate decoding is impaired; Hawelka and Wimmer (2008) suggest that dyslexics might read words letter by letter, instead of as a whole. This explains a slower reading rate, which is the speed at which someone is reading. They found that reading rate was impaired when dyslexics were asked to identify a target digit among multiple items (Hawelka & Wimmer, 2008). A number of studies mentioned in Jones et al. (2008) suggest that “attentional, perceptual and retrieval processes are impaired in dyslexia.” They note that dyslexics have trouble identifying targets, in this case words, if those targets are presented with multiple items (Jones et al, 2008). That is, dyslexics have more trouble identifying a target item if there are confounding items present, when compared to non-dyslexics. Thus, the slower reading rate of dyslexics can be at least partially explained by troubles with decoding. Another aspect of reading that is affected by poor decoding skills is reading comprehension. Schwanenflugel, Hamilton, Kuhn, Wisenbaker and Stahl (2004) found that automatic decoding is important for reading prosodically, which has an effect on comprehension. People with dyslexia generally have trouble with decoding, which would lead to dyslexics being less proficient in prosodic reading. Their reading fluency would thus suffer from their dyslexia.

2.2 Reading Fluency, Prosody, and Comprehension

Research has shown that reading fluency and reading comprehension are linked. Research by Veenendaal et al. (2016a) has shown a bidirectional relationship between reading fluency and reading comprehension. The higher level of reading fluency a student has, the better their reading comprehension is and vice versa. Klaua and Guthrie (2008) have also found a bidirectional relationship between reading fluency and reading comprehension. Furthermore, there seems to be a connection between reading comprehension and prosodic sensitivity. Whalley and Hansen (2006) found a positive connection between the two. Children with a higher level of prosodic skill performed better on a reading comprehension test (Whalley & Hansen, 2006). Additionally, prosody has an influence on reading fluency. Fluency was defined in this paper as the ability to read a text quickly and accurately. Although reading correctly can be done without the use of accurate prosody, this would make a text harder to understand for any listener or the speaker themselves. Wagner and Watson (2010) looked into a number of approaches to prosodic phrasing. One of the general understandings was that prosodic phrasing and syntax are linked. Therefore, prosodic phrasing is important to convey the rhythm of a text, to emphasise salient information, and to clarify the syntactic structure of a text (Wagner & Watson, 2010). This study will focus on prosodic phrasing, essentially the segmenting of a speech stream into chunks. These chunks make a text easier to comprehend than one continuous speech stream with no prosodic boundaries. Prosodic cues are instrumental in segmenting a speech stream into phrases and words.

There are a number of prosodic cues that are important in prosodic phrasing. These cues are final lengthening, pauses, and utterance final pitch. Dutch and English differ in how these cues are used to mark prosodic boundaries. Final lengthening is more evident in English than it is in Dutch, whereas pauses are more prevalent in Dutch as compared to English. Specifically, in English final lengthening and accentual lengthening are additive. Therefore, a

phrase-final accented word can be lengthened for both being final and being accented (Cambier-Langeveld, 1999). In contrast, in Dutch they do not add up; a boundary-final accented word is only accented for being final. Pauses in Dutch are generally longer than in English, meaning that Dutch speakers tend to allow for more time to pass to chunk phrases accurately than English speakers would do. The pitch patterns that signal continuation or the end of an utterance are slightly different in English as compared to Dutch. Different pitch patterns signal different things. Chen (2007) looked into continuation intonation and pitch patterns. Participants in their experiment all gave preference to a high pitch to signal continuation. However, the precise pitch contour differs between languages. English speakers prefer to use a fall-rise contour but Dutch speakers show a preference for high rise contour (Chen, 2007).

2.3 Effects of training on L2 reading

Most training in L2 reading has been focused on reading strategies. These strategies have overall been successful in improving students' reading comprehension (Yapp, de Graaff & van den Bergh, 2017; Hartmann, 2020). Awareness of reading strategies thus seems to help students.

However, O'Conner, White and Swanson (2007) researched whether reading rate is an indicator of reading comprehension. They suggested that readers that have a fast-reading rate can focus more on comprehension, because they have stronger decoding abilities. Following this, they argue that improving reading rate can result in improved comprehension. They suggest that reading rate is mostly influenced by time spent reading as well as a focus on connected text. This study has shown that an improvement with reading lists of words did not necessarily mean an improvement in overall reading rate (O'Conner et al, 2007). They mentioned that a common treatment for slow reading rate is repeated reading. Doing this helped students improve their reading rate, as well as their recognition of words, thereby also

targeting comprehension. The second option for improvement, suggested by O'Conner et al. (2007), is the reading of multiple, continuous texts. They mention that this is most closely related to the reading that 'good students' do outside of the classroom. Furthermore, reading different texts ensures more exposure to a wider range of vocabulary. Based on these aspects they researched which practice would help struggling readers the most. They found that both training options were beneficial to struggling readers, however they did not find a significant difference between the two intervention methods (O'Conner et al, 2007). Therefore, it can be assumed that there are significant effects of non-reading-strategies-based training on students' reading skills.

3. Research Question

Based on the various elements discussed in the Theoretical Background, we have formulated the research question as follows: Is there a positive effect of explicit training in prosodic phrasing in the reading-aloud context on the reading comprehension of Dutch learners of English with dyslexia?

4. Hypothesis

Previous research has shown that reading fluency and reading comprehension influence each other. A study by Soriano et al. (2011) investigated whether training in reading fluency could help students with reading disabilities in Spanish. They found that although reading fluency could be improved through training, this did not necessarily influence reading comprehension (Soriano et al. 2011). Effects of reading fluency on reading comprehension, however, have been reported by considerable research (Schwanenflugel et al. 2004; Klaua & Guthrie, 2008; Veenendaal et al, 2016a). Therefore, training reading fluency might positively impact the participant's reading comprehension in this study. Consequently, the hypothesis is that targeting prosodic phrasing in reading fluency with training will have a positive impact on the reading comprehension of Dutch learners of English with dyslexia.

5. Methodology

5.1 Why a case study

A case study was chosen, due to the Covid-19 pandemic. This thesis project started during the very first lockdown, therefore, it was hard to find participants. The fact that this took place in the early stages of the pandemic meant that online research and assessment methods were not yet well developed. Therefore, we chose to do a case study with a participant the author was familiar with.

5.2 Research design

A double pre-test, training, post-test design was used to test the hypothesis. In using this testing method, the difference in improvement between the two pre-tests and the difference between the second pre-test and the post-test can be compared in order to determine whether the training was effective. If the improvement between the second pre-test and the post-test is bigger than the improvement between the two pre-tests this could be taken evidence for an effect of training. The experiment timeline is detailed below.

Experiment timeline

Pre-test 1	Week 1
Pre-test 2	Week 2
Training	Week 2.5
Post-test	Week 3

The three different tests were taken a week apart. Halfway between the second pre-test and the post-test the training was given.

5.3 Participant

The participant was a female native speaker of Dutch diagnosed with dyslexia and was 19 years old at the time of testing. She was diagnosed when she was eleven years old. She was a second-year math student of the graduate school of teaching at the HAN (Hogeschool Arnhem

Nijmegen). She had five years of formal English education between the age of 11 and 17 and has received her current education in Dutch. She rarely reads in English, but she does consume a reasonable amount of English media.

5.4 Materials

5.4.1 Cambridge Advanced English reading test

The participant was tested with two pre-tests followed by a training and a post-test. The tests included five different texts. In order to ensure comparability, the Cambridge Advanced English Reading comprehension tests (Engexam.info) were used. These tests are designed to have an equal degree of difficulty each year even though they are lexically different.

Different texts were taken from six different years and mixed to form the three tests. This was done by taking the first text from three different years and then moving the second and third text of that year to a different test-moment. So, the second text of the first year was moved to the second pre-test, and the third text was moved to the post-test. There were five texts in each test, the second and third text, and the fourth and fifth text had the same structure.

In this study only the standardised cloze tests were used. The cloze tests were chosen because they are standardised and for each question there is one correct answer. Therefore, there can be no bias in the assessment. This approach is different from more typically used methods to test reading comprehension, which are, for example, asking participants questions about the content of the text or asking them to determine in which part of a text a certain statement is made (Wolf, 1993). These tests are very time consuming and thus they are not the best choice in all contexts. Some researchers investigated using cloze tests as a faster and still accurate way of assessing reading comprehension. A study by Wolf (1993) looked into different types of reading comprehension tasks. She found that cloze tasks can indeed be used to test reading comprehension. She mentioned that it might be especially useful for students of a foreign language, who may not have the competence to articulate what they gathered from a text (Wolf, 1993). Another study by Gellert and Elbro (2013) showed that cloze tests can be

used to test reading comprehension, however the design of such a test is very important. Shanahan, Kamil and Tobin (1982) found that cloze tests can be used to test reading comprehension, however their results showed that these tests are less effective for intersentential comprehension. Gellert and Elbro (2013) argued that an important factor in doing cloze tests is decoding ability. As discussed earlier, decoding is also essential when it comes to understanding what a test is trying to convey. In combination with the results from Wolf (1993) this information suggests that cloze tests, if designed properly, can be effectively used to gather a measure of reading comprehension especially for learners of a foreign language, in this case English.

5.4.2 Training materials

Explicit instruction was given that highlighted the differences between English and Dutch in pitch contours for continuation, final lengthening, and pauses. During the training, each different element was briefly highlighted. Before the training started, the participant was asked to read out the practice sentences. After the instruction was given, the participant was asked to read these sentences again. Following each reading, the researcher gave notes on pronunciation and the different prosodic cues that were discussed. The PowerPoint used in the training can be found in Appendix A. The training was done in Dutch, because the participant is most comfortable with this language. This ensured that the instructions would not be misunderstood due to a language barrier.

5.5 Procedure

This study followed a double pre-test, single post-test design. The tests were made up from different texts from the CAE reading and use of English test, examples of the texts can be found in Appendix B. The participant completed these tests in the same room for each testing moment, to ensure that the conditions were as similar as possible. Before the first pre-test the participant was asked to read out a selected short story, namely “The North Wind and the

Sun”. This was done to establish a baseline for reading fluency. If an improvement in reading comprehension was found this could hopefully have been traced back to an improvement in reading fluency.

During the training, the participant received explicit instruction on different aspects of prosody that facilitate reading fluency, which took approximately ten minutes. This included pitch patterns for pauses or continuations, final lengthening, and questions. A number of sentences were used to further illustrate the difference.

The instruction was followed by a practise session. The participant was asked to read out a number of practice sentences, which included the discussed aspects. Below are some examples of practice sentences. All three cues were included in the practice sentences; therefore the sentences were made up of two clauses. The two clauses ensured a pause in the sentence at the place of the comma. The pitch cue is present at the end of the first clause. Final lengthening was found at the end of the sentence.

- A ship in the harbour is safe, but that is not what a ship is for.
- She wanted to go to the store, unfortunately it was closed.

The participant was asked to read these sentences once before the training, and three times after the training. The training was recorded.

5.6 Statistical analysis and Results

In the following tables the descriptive statistics are given. Table 1 gives the number of correct answers per type of text. Correct words that were misspelled were counted as correct, because the focus was on comprehension and not spelling. Since texts one through five are structured the same for each testing moment, these scores were directly used to run the analysis.

Table 1: Number of correct answers per type of text for each test moment.

Text type	1	2	3	4	5
Pre-test 1	4	5	7	1	3

Pre-test 2	5	5	7	4	2
Post-test	6	5	6	4	5

Table 2 details the mean results and standard deviation per testing moment. The mean score was higher for each testing moment.

Table 2: Mean results and standard deviation per testing moment

Test	Mean (SD)
Pre-test 1	4.0 (2.23)
Pre-test 2	4.6 (1.82)
Post-test	5.2 (.84)

A paired t-test¹ was done between the two pre-tests and between the second pre-test and the post-test. There was no significant difference between the two pre-tests ($t = -.89$, $p = .43$) and the second pre-test and the post-test ($t = -.89$, $p = .43$). Although the participant's scores did improve between the three different testing moments, the improvement between the two pre-tests and between the second pre-test and the post-test did not reach statistical significance.

There was no significant difference between the different tests, therefore the recordings were not further analysed to determine changes in reading fluency.

6. Discussion

The goal of this case study was to determine whether training in reading fluency would have a positive influence on reading comprehension in Dutch learners of English with dyslexia. We used a double pre-test, single post-test structure to test reading comprehension. All tests were

¹ Strictly speaking a paired t-test could not be used. However, due to the standardised nature of the Cambridge assessment, different test types from different years of testing should be comparable. However, to have more data points it was decided to use a paired t-test.

a week apart and the reading fluency training was given in the week between the second pre-test and the post-test. The results show that the participant did not significantly improve, although the mean reading comprehension scores did improve from one test moment to the next. The lack of significant results makes it impossible to determine if there was an effect of reading fluency. Furthermore, there might have been many confounding factors that could have influenced the participant's results. For example, it has been shown that previous knowledge of a topic is useful when making reading comprehension tasks (Adams & Bruce, 1982). Given the fact that these tests were done using a cloze test it is possible that the participant performed better on the tests of topics she was more familiar with.

Although there were no significant differences found in this study, this does not mean that the training was useless or that reading fluency is not an important factor in reading comprehension. The aspects that were discussed in the theoretical background, such as chunking, can still be important. This is a factor that is essential to comprehension, because the brain needs to segment sentences into meaningful parts to understand what a text is trying to say. The aspects that were used in the training mainly focused on this chunking. However, it might be possible that the participant needed more training of the kind in our study to benefit from it in reading comprehension. Although she mentioned that she paid more attention to the way she uttered the sentences, it was still very much a conscious decision. It may be speculated that explicit prosodic instruction might only show positive results when the strategies to ensure chunking can be used automatically. Automatization is seen as a key point that must be reached in language learning to achieve a high proficiency. In other words, a learner of English would have to no longer be consciously paying attention to their prosody when reading.

7. Limitations

There are several limitations in this study, which will be discussed in different paragraphs.

These limitations are sample size, training procedure, the sensitivity of the cloze test, and the quality of the texts used in these cloze tests.

The first limitation to be discussed is the limited sample size. Due to Covid-19 this study was a case study with only one participant. This means the dataset was rather limited, making it difficult to generalise the results to other Dutch learners of English with dyslexia. Additionally, any interfering effects are much more likely to influence the data. For example, the participant mentioned that she found some texts a lot easier to understand than others in spite of the fact that the texts were supposed to be comparable in complexity. This might have been due to previous knowledge about the topics discussed in the text. It has been shown that previous knowledge can significantly influence the knowledge a learner gathers from a text (Adam & Bruce, 1982). In order to have more data points, the scores from all different texts were used as separate data points. Although this increased the number of data points, it also allowed for differences in previous knowledge to be more important. Furthermore, the participant had not done a reading comprehension text since finishing secondary school. Therefore, readjusting to these types of tests might have influenced her performance. All of these factors are of increased importance due to the limited sample size.

The second limitation concerns the training procedure. The participant mentioned a few things which she found hard to do in the training. First of all, she mentioned that she found it hard to apply some of the notes that were given. All of the sentences were supposed to be seen as complete utterances. Therefore, certain prosodic cues were necessary. However, the participant read out the sentences in a more continuous manner. She thus made little use of some prosodic cues in the first few sentences and only used utterance final cues in the last sentence. It was harder for her to use the prosodic pattern necessary for expressing continuation in all practice sentences except for the last one. It was also hard for her to fully

understand what she had to change, partly because she could not accurately hear what mistakes she made. It could have been useful if the participant had been able to listen to her own recordings and could have changed her prosodic pattern accordingly. Another improvement that could have been made to the training was for the participant to be able to listen to a native speaker of English. It is quite difficult to implement a prosodic pattern if one has never heard it before. Combining both native speaker recordings and the participant's own recordings would have made it clearer where she could improve. Additionally, the training was quite short, with half of the time spent on metalinguistic facts and half of the time on practice and was only done once. It would be more beneficial to learners if a longer training session with more time for practice and including longer texts as practice materials was done. Moreover, multiple training sessions over a longer period of time would have been more useful.

Another limitation is the use of the cloze test instead of a traditional reading comprehension test. Although these tests can be used to assess reading comprehension, they might not have been sensitive enough to determine if there was an improvement in comprehension. A cloze test has to be very carefully designed to ensure usefulness in testing reading comprehension. They have to be at a high enough level that the participant must understand the meaning of the text to fill in the blanks. The cloze tests used in this study were taken from the Cambridge Assessment of English exams. Although these tests are valued highly, this specific part of the Reading Comprehension and Use of English test was more focused on use of English instead of comprehension. This part still tested comprehension, but was not fully designed for this. Therefore, these texts might not have been sensitive enough to test any potential improvement in comprehension. Additionally, the second and third text as well as the fourth and fifth texts in each test were similarly structured. Therefore, it was difficult to determine which of the texts should be compared. Moreover, these texts tested

virtually the same thing, although they were all about different topics. It might have been more useful to have more variety in the texts, as well as more carefully designed texts suitable for testing reading comprehension. Participants might be better at some texts or tests than others, so including more variety would even out the playing field. Furthermore, as discussed by Gellert and Elbro (2013) the design of a cloze test for reading comprehension is very important.

8. Further Research

In the limitations section, several different aspects were discussed. These limitations also provide suggestions for further research. One of the most obvious suggestions would be to include more participants. This would ensure that results could be more easily generalised to the wider population. It would ensure that small differences in a participant's existing knowledge could not influence the data as much as it could have done in this case-study.

Furthermore, it was mentioned that the training was quite short. Further research might look into using a training program where participants are trained in prosody over an extended period of time. For example, a training program that would take place over a couple of weeks. This would open up more possibilities for a built up in the theory and practice during the sessions. For example, the first training sessions could explain the theory behind using accurate prosody, as well as focus on listening to native speaker examples. Later sessions could have a more practical approach where participants could practice their prosodic reading with feedback from an instructor. The training sessions themselves could also benefit from being longer. This would ensure that enough time is given to both the instructional and practical part of the training. The session in this study was quite short and was split equally between explicit instruction and practice. If participants would have more time to practice, this might prove to be more beneficial. There might be some difficulties in implementing some of these aspects. Although participants could listen to themselves on recordings, to the untrained ear it might be very challenging to pick up on subtle prosodic cues. Research would

presumably be done with participants that do not have a linguistic background. Training should be adapted to ensure the greatest benefit for learners of English. It would be interesting to research multiple intervention methods to determine which would be most effective.

Further research on this topic might also benefit from different assessment methods. Cloze tests can be useful; however, the design is very important. Although the cloze tests used were known to be of high quality, they were not specifically designed to test comprehension. They should have been specifically adapted to the level of English of the participant. A cloze test also allows for very little nuance. Some options to be considered are traditional reading comprehension tests or interviews where participants are given the opportunity to articulate what they understood about the text. Traditional reading comprehension tests might be more sensitive to slight improvements in comprehension. There are many different comprehension tests, and it might be useful to compare which would be most effective to use in this specific field of study. For example, testing methods that use multiple choice are less nuanced than tests that require participants to formulate their own answer. However, they might be easier to implement with learners of English that have not reached a sufficient level of proficiency to articulate their own answers. The same problem holds for using interviews where participants detail what they understood about a text. This might not be suitable for participants at the start of their learning process. It would be interesting to compare different testing methods and their sensitivity to accurately determine improvement in comprehension. The sensitivity of testing is an essential part of determining the effectiveness of an intervention program and should definitely be taken into account when considering further research.

9. Conclusion

This study investigated the following research question: Is there a positive effect of explicit training in prosodic phrasing on the reading comprehension of Dutch learners of English with dyslexia? To answer this question, a training-study with a female participant was conducted. Our results showed no significant improvement after training. However, it would still be

worthwhile to further investigate this topic. Finding out whether training reading fluency can benefit the reading comprehension of learners of English, with or without dyslexia, would be very useful. Further research can also further our understanding of the link between reading fluency and comprehension. This line of research may also have useful implications for educational practices. In the Dutch education system, very little attention is given to reading out loud. Students sometimes have to do oral exams or presentations, but they have very little practice in reading out loud. If more training in reading out loud could improve reading fluency in learners of English and in turn their reading comprehension, students should do more reading-loud training with special attention to prosody.

References

- Adams, M., & Bruce, B. (1982). Background knowledge and reading comprehension. *Reader meets author: Bridging the gap*, 13, 2-25.
- Cambier-Langeveld, T. (1999). The interaction between final lengthening and accentual lengthening: Dutch versus English. *Linguistics in the Netherlands*, 16(1), 13-25.
- Chen, A. (2007). Language-specificity in the perception of continuation intonation. In C. Gussenhoven and T. Riad (eds.) *Tones and Tunes II: Phonetic and behavioural studies in word and sentence prosody* (pp.107–142). Berlin: Mouton de Gruyter. In *Phonetics and Phonology*. Series editor: Aditi Lahiri.
- Gellert, A. S., & Elbro, C. (2013). Cloze tests may be quick, but are they dirty? Development and preliminary validation of a cloze test of reading comprehension. *Journal of Psychoeducational Assessment*, 31(1), 16-28.
- Grigorenko, E. L. (2001). Developmental dyslexia: An update on genes, brains, and environments. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, 42(1), 91-125.
- Hartmann, A. R. (2020). Visualise a strategy: The effect of explicit reading strategy instruction on Dutch secondary school pupils' reading comprehension (Master's thesis).
- Hawelka, S., & Wimmer, H. (2005). Impaired visual processing of multi-element arrays is associated with increased number of eye movements in dyslexic reading. *Vision research*, 45(7), 855-863.
- Holliman, A. J., Wood, C., & Sheehy, K. (2012). A cross-sectional study of prosodic sensitivity and reading difficulties. *Journal of Research in Reading*, 35(1), 32–48
- Jones, M. W., Obregón, M., Kelly, M. L., & Branigan, H. P. (2008). Elucidating the component processes involved in dyslexic and non-dyslexic reading fluency: An eye-tracking study. *Cognition*, 109(3), 389-407.
- Jones, M. W., Branigan, H. P., & Kelly, M. L. (2009). Dyslexic and nondyslexic reading fluency: Rapid automatized naming and the importance of continuous lists. *Psychonomic bulletin & review*, 16(3), 567-572.
- Klauda, S. L., & Guthrie, J. T. (2008). Relationships of three components of reading fluency to reading comprehension. *Journal of Educational psychology*, 100(2), 310.
- Lai, S. A., George Benjamin, R., Schwanenflugel, P. J., & Kuhn, M. R. (2014). The longitudinal relationship between reading fluency and reading comprehension skills in second-grade children. *Reading & Writing Quarterly*, 30(2), 116-138.

- Schwanenflugel, P. J., Hamilton, A. M., Kuhn, M. R., Wisenbaker, J. M., & Stahl, S. A. (2004). Becoming a fluent reader: reading skill and prosodic features in the oral reading of young readers. *Journal of educational psychology*, 96(1), 119.
- Shanahan, T., Kamil, M. L., & Tobin, A. W. (1982). Cloze as a measure of intersentential comprehension. *Reading Research Quarterly*, 229-255.
- Soriano, M., Miranda, A., Soriano, E., Nievas, F., & Félix, V. (2011). Examining the efficacy of an intervention to improve fluency and reading comprehension in Spanish children with reading disabilities. *International Journal of Disability, Development and Education*, 58(1), 47-59.
- Tijms, J. (2004). Verbal memory and phonological processing in dyslexia. *Journal of Research in Reading*, 27(3), 300-310.
- Veenendaal, N. J., Groen, M. A., & Verhoeven, L. (2014). The role of speech prosody and text reading prosody in children's reading comprehension. *The British journal of educational psychology*, 84(Pt 4), 521–536. <https://doi.org/10.1111/bjep.12036>
- Veenendaal, N. J., Groen, M. A., & Verhoeven, L. (2016a). Bidirectional Relations between Text Reading Prosody and Reading Comprehension in the Upper Primary School Grades: A Longitudinal Perspective. *Scientific studies of reading : the official journal of the Society for the Scientific Study of Reading*, 20(3), 189–202. <https://doi.org/10.1080/10888438.2015.1128939>
- Veenendaal, N. J., Groen, M. A., & Verhoeven, L. (2016b). The Contribution of Segmental and Suprasegmental Phonology to Reading Comprehension. *Reading research quarterly*, 51(1), 55–66.
- Wagner, M., & Watson, D. G. (2010). Experimental and theoretical advances in prosody: A review. *Language and cognitive processes*, 25(7-9), 905-945.
- Whalley, K., & Hansen, J. (2006). The role of prosodic sensitivity in children's reading development. *Journal of Research in Reading*, 29(3), 288–303. <https://doi-org.proxy.library.uu.nl/10.1111/j.1467-9817.2006.00309.x>
- Wolf, D. F. (1993). A comparison of assessment tasks used to measure FL reading comprehension. *The Modern Language Journal*, 77(4), 473-489.
- Yapp, D. De Graaff, R. van den Bergh, H. The Effects of a Second Language Reading Strategy Intervention on Student Reading Performance.

Appendix A Training Powerpoint





Voorlezen

- ▶ Een goede manier van voorlezen is belangrijk
 - ▶ Belangrijke informatie benadrukken
 - ▶ 'Chunking' van zinsdelen
- ▶ Dit onderscheid maakt uit voor tekstbegrip
- ▶ Mensen die beter kunnen voorlezen begrijpen een tekst beter
- ▶ Dit werkt twee kanten op



Drie Aspecten

- ▶ Tijdens deze training focussen we op drie aspecten
- ▶ Final Lengthening
- ▶ Intonatie zinseinde
- ▶ Pauzeren

Final Lengthening

- ▶ Het langer maken van de laatste lettergreep van een woord aan het eind van een zin, of voor een komma
- ▶ In het Engels is dit belangrijker dan in het Nederlands
- ▶ Twee aspecten leveren bijdrage aan de lengte van de laatste lettergreep
 - ▶ Stress, benadrukking
 - ▶ Zinseinde

Final lengthening

- ▶ "He was looking forward to going to France, instead of Spain"
- ▶ Hierbij wordt het woord "France" benadrukt op twee manieren.
- ▶ Het is belangrijke informatie, en het is aan het einde van het eerste zinsdeel

Intonatie

- ▶ Er zijn verschillende intonatie patronen die aangeven of je verder gaat praten, of dat je klaar bent.
- ▶ In het Engels is het eindigen op een hogere toon een indicatie dat je verder gaat praten.
- ▶ Een lagere toon is een indicatie dat je aan het eind van je zin bent.

Intonatie

- ▶ H* L H%
- ▶ Een toon die verder omhoog gaat betekent dat je nog verder gaat praten
- ▶ Een dalende toon betekent dat je klaar bent

Intonatie

- ▶ Engels
 - ▶ Daling → stijging
- ▶ Nederlands
 - ▶ Hoog → stijging
 - ▶ Laag, hoog → stijging

Pauzeren

- ▶ Pauzeren is minder belangrijk in het Engels dan in het Nederlands
- ▶ "Hij ging naar de Universiteit, maar wilde eigenlijk vooral feesten"
- ▶ "He went to university, but actually wanted to party"

Pauzeren

- ▶ Het is belangrijk om met pauzes onderscheid te maken tussen verschillende zinnen in een doorlopende tekst.
- ▶ Informatie is makkelijker te bevatten als het in kleinere stukjes is opgedeeld
- ▶ Er is verschil in de lengte van pauzes, bij bepaalde leestekens.
 - ▶ Kommas: kortere pauze
 - ▶ Punt: langere pauze

Oefenzinnen

- ▶ A ship in the harbour is safe, but that is not what a ship is for.
- ▶ She wanted to go to the store, unfortunately it was closed.
- ▶ He went for a nice walk but got a blister.
- ▶ They were looking forward to dinner, it would be at a restaurant.
- ▶ We are going on holiday, but the dog is not allowed to come.

Appendix B: Examples Cloze tests

CAE Reading and Use of English Part 1

For questions **1-8**, read the text below and decide which answer (**A, B, C** or **D**) best fits each gap. There is an example at the beginning (**0**).

Our obsession with recording every detail of our happiest moments could be **0** _____ our ability to remember them, according to new research.

Dr Linda Henkel, from Fairfield University, Connecticut, described this as the 'phototaking impairment effect'. She said, 'People often whip out their cameras almost mindlessly to **1** _____ a moment, to the point that they are missing what is happening **2** _____ in front of them. When people rely on technology to remember for them — **3** _____ on the camera to record the event and thus not needing to **4** _____ to it fully themselves — it can have a negative **5** _____ on how well they remember their experiences.

In Dr Henkel's experiment, a group of university students were **6** _____ on a tour of a museum and asked to either photograph or try to remember objects on display. The next day each student's memory was tested. The results showed that people were less **7** _____ in recognising the objects they had photographed **8** _____ with those they had only looked at.

Example:

0	A interfering	B upsetting	C <u>damaging</u>	D intruding
1	A seize	B grasp	C capture	D snatch
2	A quite	B right	C merely	D barely
3	A counting	B settling	C assuming	D swearing
4	A engage	B apply	C attend	D dedicate
5	A result	B aspect	C extent	D impact
6	A steered	B run	C led	D conveyed
7	A accurate	B faithful	C exact	D factual
8	A measured	B compared	C matched	D confronted

CAE Reading and Use of English Part 2

For questions **9-16**, read the text below and think of the word which best fits each gap. Use only one word in each gap. There is an example at the beginning (**0**).

Write your answers IN CAPITAL LETTERS on the separate answer sheet

Example: (**0**) **TO**

On the hunt for the best young female entrepreneurs

Founded in 1972, the Veuve Clicquot Business Woman Award is celebrated in 27 countries. Veuve Clicquot has now introduced a new award **0** _____ complement its Business Woman of the Year category. Called The New Generation Award, **9** _____ recognises the best young female talent across business and corporate life.

The first winner of the award, Kathryn Parsons, **10** _____ innovative start-up company, Decoded, teaches people to code in a day, has joined the judging panel to help find this year's winner. The importance of these awards cannot **11** _____ overestimated' she says. 'Women need role models that prove to **12** _____ that they can do it, too.'

The New Generation Award is open to entrepreneurial businesswomen **13** _____ the ages of 25 and 35. They can run **14** _____ own businesses or hail from corporate life. This award isn't about how much money you've made or how long you've been in business, it's about recognising young women **15** _____ a mission and a vision' says Parsons. 'We want to meet women who are working to **16** _____ the world a better place.

CAE Reading and Use of English Part 3

For questions **17-24**, read the text below. Use the word given in capitals at the end of some of the lines to form a word that fits in the gap in the same line. There is an example at the beginning (**0**).

Write your answers IN CAPITAL LETTERS on the separate answer sheet.

Example: (**0**) RESIGNATION

EXIT INTERVIEW

If you are thinking of leaving your job, you may think that handing in your letter of **0** _____ is the end of the matter. But an increasing number of companies now conduct 'exit interviews' with staff.

For the employee, an exit interview may feel like an ideal opportunity to rant and rave about every little **17** _____ that has troubled them since they got the job. But, **18** _____ in mind that you will probably still need a **19** _____ from these people, it is best to avoid getting angry or **20** _____, and just answer the questions as calmly and with as much **21** _____ as possible.

- 0. RESIGN
- 17. ANNOY
- 18. BEAR
- 19. REFER
- 20. EMOTION
- 21. HONEST
- 22. OFFEND
- 23. CLOSE
- 24. TRUE

For employers, the exit interview is a rare opportunity to gather some valuable information about the way staff perceive the company. Existing employees may not wish to cause **22** _____ to the boss or damage their chances of promotion, so are unlikely to **23** _____