Van struikelblok naar bouwsteen: een vakdidactisch ontwerponderzoek naar het schrijven van begrijpelijke alinea's door leerlingen uit het voortgezet onderwijs

Winden, A.W.C. van

From stumbling block to buiding block

A didactic design study on writing comprehensible paragraphs for secondary education
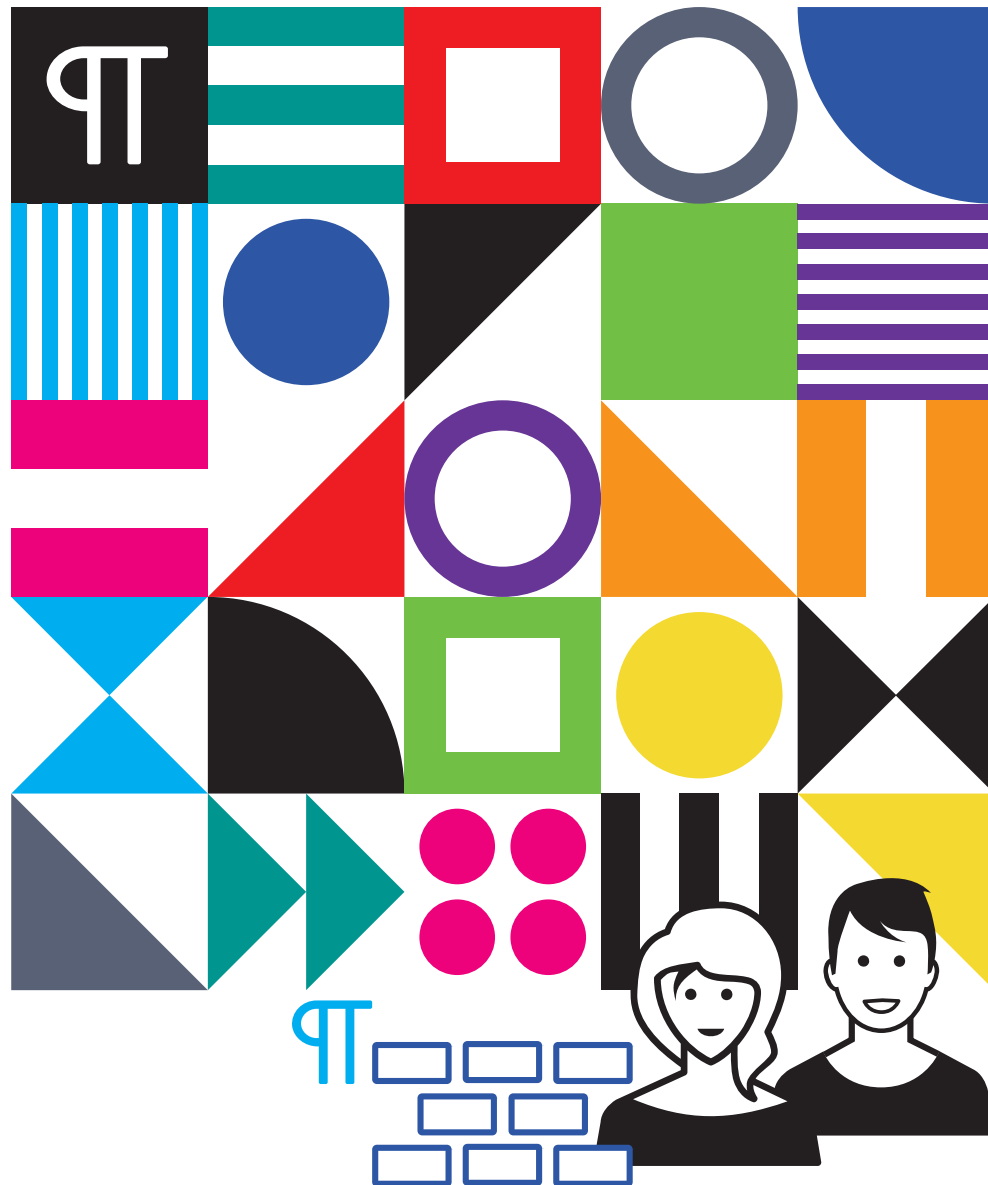
Summary

Chapter 1: Introduction
This dissertation presents a first didactic study of the paragraph. A paragraph is an essential element of a comprehensible text; paragraphs divide a text into units of content that together form a logically ordered hierarchical whole. The difficulty in writing comprehensible paragraphs is that it is a complex task that requires coherence at different levels. Indeed, coherence is an essential component of a text (Pander Maat, 2002; Sanders & Spooren, 2021). This coherence manifests itself at the level of a text as a whole, in and between paragraphs within a text, and also in and between sentences and words. It ensures that the structure of the text and its wording come together in a paragraph.

Remarkably, little is known about the requirements of a comprehensibly written paragraph. This makes it difficult for Dutch secondary school teachers to teach their pupils how to write a paragraph. In didactic textbooks, the paragraph is only cursorily discussed as an element of a text; nowhere is it translated into the didactics of Dutch as a school subject. In academic literature, the paragraph as a unit of content within a text has so far been underexplored. There have only been studies on elements of a paragraph (Stark (1988) on indicating paragraphs; Sanders et al. (2007) on coherence relations; Zwaan and Rap (2006) on the pyramid structure of the paragraph); complete descriptions of the paragraph have been lacking since the initial attempts by Bain (1866), Scott and Denney (1893) and Popken (1984). A systematic study of the paragraph is therefore desirable.

The aim of this study is to design, develop and evaluate a scientifically sound, effective and practicable didactic method that teachers can use to teach their pupils to write comprehensible paragraphs. This would enable secondary school pupils to achieve the proficiency level described in the HAVO (Dutch Upper General Secondary Education) examination syllabus and in the Framework of Reference for Languages (Continuous Learning Pathways Expert Group, 2008), namely, to be able to write coherent, well-formulated paragraphs.

The central research question of this dissertation is: *How should a didactic method for paragraph-writing be designed so that it is text based, effective for pupils and of practical use for teachers in secondary education?* In addressing this central question, we conducted five sub-studies to answer the following sub-questions:

1 What norms should comprehensibly written paragraphs meet?

2 What paragraph skills have pupils already mastered?

3 What knowledge do pupils have about paragraph-writing and what are their self-efficacy beliefs regarding paragraph-writing?

4 What didactic design principles constitute the starting points for designing a didactic method for paragraph-writing, and what should this didactic method consist of?

5 What are the effects of applying the designed didactic method for paragraph-writing on pupils' knowledge of paragraphs, on their ability to write comprehensible paragraphs and on their self-efficacy beliefs?

Chapter 2: Reconstruction of paragraph norms

The first phase of this didactic design study is a conceptual-analytical investigation. We present a rationale that shows which aspects of language are important when writing paragraphs. An analysis of 29 Dutch language reference books shows that the paragraph is considered an important element of a text, but that professional language reference books differ considerably in the way they discuss the paragraph. This analysis resulted in an overview of eleven paragraph norms (see Table 1), which we have justified on the basis of theoretical and empirical research findings from linguistics and discourse studies.

The design principle that emerges from this sub-study is that a paragraph has a role at different levels: at the demarcation level, at the global structure level, at the local structure level for thematic coherence and at the local structure level for relationships between sentences. In addition, Chapter 2 provides an overview of Dutch teaching methods, which show a striking diversity in the paragraph norms covered.

TABLE 1

Constructed on the basis of Dutch language reference books (N = 29), divided into four categories, with the last column indicating how often the norm was found in language reference books.

Category	No.	Norm	No. of times found
Demarcating the paragraph	1	The writer uses one of the following to indicate the start of a new paragraph	
		[a] indenting	17
		[b] a blank line	20
	2	A paragraph consists of at least two sentences	12
Coherence at global structure level	3	The purpose of the paragraph is clear	7
	4	The paragraph is related to the central message of the text	3
	5	The core sentence supports the central message of the text	4
Coherence at local structure level: thematic coherence	6	The paragraph addresses one of the subtopics in the text	26
	7	The main statement about the subtopic is contained in the core sentence	21
	8	The rest of the information relates to the core sentence	17
	9	New information in the paragraph is linked to what the reader already knows	
		[a] by linking this new information to knowledge of meanings of words	1
		[b] by linking this new information to knowledge of the world around us	2
Coherence at local structure level: relationships between sentences	10	Within the paragraph, sentences are combined to form a coherent whole	
		[a] by using reference words and/or	15
		[b] by using linking words and/or	22
		[c] through implicit links	3
	11	The paragraph is structured in one of the following ways:	
		[a] as a pyramid: the core sentence is at the beginning of the paragraph	21
		[b] as an hourglass: the core sentence is in the middle of the paragraph	6
		[c] as a funnel: the core sentence is at the end of the paragraph	15

Chapter 3: Pupils' mastery of paragraph skills

In a textual-analytic study, we answered the question of which paragraph-writing skills pupils had mastered in the initial situation, i.e. without being explicitly taught paragraph-writing using the framework of norms. To do this, we operationalised the paragraph norms shown in Table 1 in an analytical model. The paragraphs of 179 informative emails and 194 argumentative texts written by a total of 216 pupils in the second (2-HAVO) and fifth (5-HAVO) year of upper general secondary education (HAVO) were analysed by two reviewers. Based on the results of the multilevel analysis of the data, we can conclude that a genre effect is observed for both year groups; in the data, we see that the paragraph norms tend to score higher in argumentative texts.

To answer the question of whether pupils have actually mastered the skills of the various norms, we need to make an assumption about *when* pupils master a skill. Here we draw on Bloom's *Mastery Learning* (1968): pupils as a group master a skill when 90% of that group achieve the norm. If we apply this to the results of the multilevel analysis, we see that pupils in 2-HAVO have not yet mastered the paragraph skills. The only paragraph norm they have mastered is norm 1b ('The text contains paragraphs') in the argumentative texts; the group scores 96% for this. In the e-mails, the pupils have not mastered any of the paragraph norms.

In both genres, within the *paragraph demarcation* category, pupils in 5-HAVO have mastered norms 1b and 2, but not norm 1a on the consistent demarcation of paragraphs. In the *local coherence: thematic coherence* category, pupils have mastered norms 9a and 9b ('New information in the paragraph is linked to what the reader already knows by linking this new information to knowledge of meanings of words as well as to knowledge of the world around them') in both genres. In the *global coherence* category, they have mastered norms 3 ('The purpose of the paragraph is clear'), 4 ('The paragraph is related to the central message of the text') and norm 10b in the *local coherence: relationships between sentences* category ('Within the paragraph, sentences are combined to form a coherent whole by using linking words') in the argumentative texts.

Chapter 4: Declarative knowledge and self-efficacy beliefs
While Chapter 3 examines pupils' skills in writing comprehensible paragraphs, in this chapter we focus on pupils' knowledge and self-efficacy beliefs. To do this, we use the results of a questionnaire. This questionnaire, containing statements based on the paragraph norms from Table 1, was carried out three times during the research period. Since this chapter focuses on the pupils' initial situation, we derived the data for answering this sub-question from the baseline measurement. This questionnaire was conducted among the same target group whose paragraph writing skills were also tested (N = 301).

In order to be able to answer the question of whether the pupils have actually mastered knowledge of paragraph-writing, we again follow Bloom's (1968) premise, as in Chapter 3. The conclusion is that 4% of 5-HAVO pupils have mastered knowledge of paragraph-writing and that pupils in 2-HAVO have not mastered this knowledge.

The results of the questionnaire show that 5-HAVO pupils score higher in terms of knowledge (45.0, SD= 19.2) than 2-HAVO pupils (19.7, SD= 18.4). Pupils in 2-HAVO give more incorrect answers on average; six items score negatively. Pupils in both year groups are aware that linking words play an important role in a paragraph. This item from the questionnaire scored highest for both groups.

The results show that pupils in both year groups find it difficult to articulate what a paragraph is. On a 7-point scale, pupils in 2-HAVO score an average of 2.9 (SD = 1.7). This means that, in their definition, pupils on average describe the paragraph as a part of a text or a section of a text combined with a comment on the indication or length of the paragraph. The definitions provided by 5-HAVO pupils are, on average, more comprehensive. They score an average of 4.1 (SD = 1.6) on a 7-point scale; that is, they formulate a definition that includes the concept of subtopics in combination with the concepts of indication or length. In addition, both 2-HAVO and 5-HAVO pupils find it difficult to indicate the function of a paragraph; on a 4-point scale, 2-HAVO pupils scored on average 1.0 (SD = 0.50) and 5-HAVO pupils scored on average 1.2 (SD = 0.70).

The pupils actually have quite high self-efficacy beliefs; i.e., they *think* that they have mastered the knowledge and skills of paragraph-writing. The average for pupils in 2-HAVO is 65.8 (SD = 16.0), and the average for pupils in 5-HAVO is 71.6 (SD = 14.5). The combination of the questions 'What do students know about writing paragraphs?' and 'How confident are they in writing paragraphs?' raises concerns in terms of conscious language proficiency. We consider it unlikely that pupils will be willing to put effort into learning a component that they feel they have already mastered. After all, this will hardly contribute to pupils' motivation to learn.

Chapter 5: Didactic design principles and the paragraph toolboxes
This chapter discusses the design principles for the design study: (1) Pay attention to the norms for writing comprehensible paragraphs, (2) Start by presenting the genre-specific writing assignment as a whole task, (3) Have pupils complete a self-assessment using the paragraph norms and (4) Provide pupils with tailored assistance and exercises. For these design principles, we drew on educational theories on the teaching of complex tasks (De Corte et al., 2014). A didactic method for a complex task should meet three criteria: valuable content, effectiveness for learners and practical applicability for teachers. The feasibility of an educational innovation is therefore a crucial aspect of its implementation. Teachers will only adopt a new approach if they have efficient ways of translating abstract ideals into concrete student activities and guidance for their own actions in the classroom; in addition, the new approach should not conflict with the teacher's other goals. The use of a modular approach with recombination and adaptation of existing lesson building blocks ensures practical applicability (Janssen et al., 2013).

One very tangible outcome of this design study is the four toolboxes that secondary school pupils use to chart their personal learning progress. Each toolbox consists of genre-specific writing assignments, self-assessment tools and help-on-demand assignments where pupils can find additional theory and extra exercises.
This chapter also describes how a teacher and a pupil experience the practicality of the paragraph didactic method; the teacher explains that the method is very useful during writing skills lessons, but that the pupils have to learn to work with it. The analysis of a pupil's work shows that he is able to evaluate the text and gauge for which part he will need help to improve further, but that guidance on how to work with the method is needed.

Chapter 6: Effects of applying the designed paragraph didactic method

The final chapter presents an intervention study in which we investigated the effects of the developed paragraph toolboxes on the knowledge, skills and self-efficacy beliefs of pupils in 2-HAVO and 5-HAVO. To this end, we conducted a questionnaire among 300 pupils in a quasi-experimental design and analysed more than 2,100 paragraphs for the presence of the paragraph norms. Contrary to our expectations, the hypothesis that pupils in 2-HAVO and 5-HAVO would benefit from the intervention for both genres is not supported by the data. In terms of knowledge and self-efficacy beliefs, working with the paragraph toolboxes had no visible effect. Regarding skills, there is a difference between the genres studied: for argumentative texts, there is a significant difference between the conditions for norms 5, 6, 7, 10a and 11; for individual variables, the year of study, the time of measurement and the interactions of the various predictors have an influence. Therefore, the results show that there is no direct relationship between the developed paragraph toolboxes and the increase in pupils' knowledge, skills and self-efficacy beliefs. However, we can see that the 5-HAVO pupils write more comprehensible paragraphs than the 2-HAVO pupils and that the results of all pupils are better during the 'after' measurement than the baseline measurement.

Chapter 7: Conclusion and discussion

In the last chapter, we answer the main question: in this study, we have illustrated what a didactic method for teaching paragraph writing – in the form of toolboxes – can look like. The fact that the pupils do not have the knowledge and skills needed to write comprehensible paragraphs demonstrates that the content of this didactic method is valuable. The method also seems to be, to some extent, of practical use for teachers. We have not been able to prove the effectiveness of the didactic method for pupils through experimentation. As such, it remains unclear whether the intervention encountered incidental problems, such as a lack of motivation among pupils during the Covid-19 pandemic, or more structural problems, such as paragraph norms that are too detailed, too much emphasis on declarative knowledge in the toolboxes or too little opportunity to practise using the toolboxes.

We have identified the following concrete opportunities for further research:

(1) When analysing paragraphs in relation to the various norms, we made the assumption that a paragraph that satisfies more norms is of a higher quality. It would therefore be interesting to know whether these paragraphs are also rated as higher-quality paragraphs by readers. A qualitative analysis based on a holistic approach or using a primary trait analysis (Schoonen & De Glopper, 1992) may therefore be a valuable addition.

(2) We situate this study within the framework of conscious language proficiency (Meesterschapsteam, 2016). This is a topical issue, which corresponds to the national trend to focus more on subject knowledge in Dutch as a school subject. However, we still do not know whether students actually use the knowledge they have acquired about paragraphs when writing their texts. We do not know what the relationship is between knowledge and skills among pupils.

(3) We also want to critically examine the method of using the toolboxes. Pupils have had to learn to work with self-assessment and tailored assistance. This type of formative assessment is difficult for them; this was evident from the way the workbooks were completed during the intervention and also from the interviews with pupils and teachers. A future case study involving a selection of pupils using the toolboxes during several rounds will provide a detailed picture of how pupils learn and work with self-assessments and of the choices they make when seeking tailored assistance. This can provide teachers with knowledge about this form of formative assessment.

(4) Writing comprehensible paragraphs can play an important role in the teaching of formulation skills in secondary education. In Dutch teaching methods, chapters on 'correct formulation' include exercises with stand-alone sentences with formulation errors that pupils are expected to identify and correct. This method is not beneficial for pupils because the stand-alone sentences have no context (Steenbakkers, 2023). It therefore does not teach pupils how to write good, grammatical sentences. The paragraph offers opportunities to learn how to formulate for both substantive and didactic reasons. A first practical but relevant point is that the paragraph is small enough for students to write during a lesson. In addition, a paragraph is an acceptable length for teachers to provide feedback. We can increase the value of this feedback to pupils by using consistent terminology. A second reason for using the paragraph as a basis for teaching formulation skills is that, unlike a sentence, the paragraph provides sufficient context for making formulation choices. The sentences in a paragraph are connected, and the paragraph provides information about the purpose, structure and audience of the text. At the paragraph level, these formulation choices are relevant because they affect the comprehensibility of a text. A follow-up study that further investigates formulation at the paragraph level is therefore relevant to the further development of teaching formulation skills.