

# An analytic description of an instructional writing program combining explicit writing instruction and peer-assisted writing

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**Abstract:** There is abundant research evidence on the effectiveness of explicit writing instruction and peer-assisted writing. However, most of the research articles investigating these evidence-based writing practices fail to include clear and detailed descriptions of the interventions. Consequently, researchers and educational practitioners have no perception of the crucial ingredients underlying these interventions, hindering replication, dissemination, and implementation of evidence-based writing practices. In the present study, we provide in-depth insight into two instructional writing programs via an analytic description of both programs. More particularly, EI+PA students received explicit writing instruction and practiced their writing collaboratively, while EI+IND students received the same explicit writing instruction; however, they practiced by writing individually. Both interventions were analytically described by means of a reporting system. Following this procedure, the writing lesson programs were more particularly described by defining design principles, instructional teaching activities, and student learning activities.

**Keywords:** explicit writing instruction, collaborative writing, design principles



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## 1. Introduction

Alarming results concerning students' writing proficiency level have consistently been reported in different national assessment reports across the world (Inspectie van het Onderwijs, 2010; National Center for Education Statistics, 2012; Ofsted, 2000). More particularly, these reports reveal that students' writing performance is below par. The findings are cause for concern as poor writing skills can have a serious impact on students' educational performance as well as on their job performance in later life (Graham & Harris, 2014). To support students in developing effective writing skills, we need to provide high-quality writing instruction by including evidence-based writing practices in everyday classroom settings. Recently, Graham, Harris, and Chambers (2016) argued that writing researchers should translate evidence-based writing practices into concrete teaching guidelines for teachers. In this way, evidence-based writing practices can effectively be translated and implemented in everyday writing education. To provide such guidelines, Rijlaarsdam, Janssen, Rietdijk, and van Weijen (2018) pointed out the need for analytic descriptions of writing interventions. Currently, however, clear and detailed descriptions of writing interventions are missing in research articles. In this respect, Rijlaarsdam et al. (2018) criticized the lack of a standard to report upon the independent variable, namely the intervention. Without clear and analytic descriptions of intervention programs, researchers do not only run the risk of hindering implementation of evidence-based writing practices in daily educational practice, but also of complicating theory building and replication in the scientific field of writing interventions (Fidalgo, Harris, & Braaksma, 2018; Rijlaarsdam et al., 2018).

To move the field of research on writing instruction forward at this point, Rijlaarsdam et al. (2018) recently developed a reporting system for interventions in writing research. More particularly, in this reporting system interventions are seen as complex and hierarchical programs consisting of teaching and learning activities. Following this reporting system, an intervention is analytically described by defining design principles (i.e., means-end-relations defining the intervention), teaching activities (i.e., instructional activities to stimulate certain learning activities), and learning activities (i.e., with the goal to improve students' writing) (Rijlaarsdam et al., 2018). The main aim of the present manuscript is twofold. First, we apply the reporting system of Rijlaarsdam et al. (2018) to analytically describe two instructional writing programs. Rijlaarsdam et al. (2018), however, did not provide any guidelines on how to report similarities and differences between different instructional writing programs. Therefore, the second aim of this manuscript is to provide such guidelines and, in this way, expand the reporting scheme of Rijlaarsdam et al. (2018). In what follows, we will shortly discuss the effectiveness of the two instructional writing programs and we will present the reporting system of Rijlaarsdam et al. (2018). Next, we will apply the reporting system to analytically describe both instructional writing programs and

emphasize the need for describing overlapping and diverging design principles to report similarities and differences between both writing programs.

## **2. Improving primary students' writing: the EI+PA and EI+IND writing program**

Previous meta-analyses have identified several evidence-based writing practices to promote primary students' writing (e.g., Graham, McKeown, Kiuahara, & Harris, 2012; Koster, Tribushinina, de Jong, & van den Bergh, 2015). Based on these meta-analyses, explicit instruction of writing knowledge and strategies and peer-assisted writing are promising practices to support developing writers. Recently, we developed, implemented, and evaluated an instructional writing program based on both evidence-based writing practices. The writing program was particularly designed for upper-primary grades in Flanders (Belgium). Following a design-based research approach (Wang & Hannafin, 2005), the effectiveness of the writing program was tested in two randomized controlled trials. The results of the first trial ( $N = 206$  fifth and sixth graders and  $N = 11$  teachers) revealed the effectiveness of explicit instruction of writing knowledge and strategies to enhance upper-primary students' writing. Surprisingly, however, peer-assisted writing had no additional effect to the explicit writing instruction (De Smedt & Van Keer, 2018).

Based on the results of this first trial, we optimized the instructional writing program and materials in general and we adapted the operationalization of peer-assisted writing in particular to maximize students' writing outcomes. Taking into account the design-based research approach (Wang & Hannafin, 2005), we conducted a second larger-scale follow-up randomized controlled trial ( $N = 431$  fifth and sixth graders and  $N = 20$  teachers). In view of evaluating the impact of the adjusted writing program, three research conditions were included in the research design. Students in the first experimental research condition received explicit instruction regarding writing knowledge and strategies and practiced writing with a peer (EI+PA). To evaluate the added value of peer-assisted writing, a second experimental condition was included in the research design as a comparison condition (EI+IND). EI+IND students received the exact same type of explicit writing instruction, but they practiced by writing individually. Finally, a business as usual condition was also included. The teachers in the business as usual condition did not follow an experimental writing program, as they applied their traditional writing approach by means of the regular school manuals to teach language. The results of this second trial were promising concerning the combined effect of explicit writing instruction and peer-assisted writing. More particularly, the results showed that EI+PA students outperformed both EI+IND and BAU students. Moreover, EI+PA students were also less motivated to write because of internal (e.g., shame or guilt) or external pressure (e.g., grades or punishment) and were more confident in their ability to invent ideas to write as compared to their EI+IND

counterparts. Because of the promising results of this second trial, the analytic description of both the EI+PA and the EI+IND program are central in the present study.

### **3. A reporting system for interventions in writing research (Rijlaarsdam et al., 2018)**

Rijlaarsdam et al. (2018) developed a reporting scheme to support researchers to analytically describe the content and structure of instructional writing programs. According to the reporting scheme, design principles lay the foundation for and define the intervention of instructional writing programs. Design principles are theoretically and empirically-driven and describe a means-end-relationship by stating which instructional activities should be done to stimulate learning and which learning outcomes are expected (Rijlaarsdam et al., 2018). A design principle includes three essential elements: (1) teaching activities (i.e., instructional activities that stimulate certain learning activities), (2) learning activities (i.e., cognitive or metacognitive activities leading to certain learning outcomes), and (3) learning outcomes or experiences. Design principles are typically formulated as if-then statements: ‘If you aim to increase a specific learning outcome, then you should apply the following teaching activities, so students can apply the following learning activities’. The reporting scheme of Rijlaarsdam et al. (2018) enables researchers to describe design principles, teaching, and learning activities. Because of the theoretical and empirical nature of design principles, researchers are encouraged to provide rationales explaining on the one hand the effectiveness of specific teaching activities to enhance students’ learning and on the other hand the relation between certain learning activities and learning outcomes. For more detailed information, we refer to the chapter of Rijlaarsdam et al. (2018) and to the introduction of this special issue (Bouwer & De Smedt, 2018).

## **4. The reporting system applied: An analytic description of the EI+PA and EI+IND program**

### **4.1 Context and focus of the EI+PA and EI+IND program**

To fully understand the design principles that lay the foundation of the EI+PA and EI+IND writing program referred to above, some additional background information concerning the context and focus of the interventions is necessary, since the educational context plays a decisive role in the design process of interventions and leads to particular design choices (Graham & Harris, 2014). In view of enabling implementation or replication of the EI+PA and EI+IND interventions, it is therefore important that educational practitioners or researchers receive information regarding the particular context the interventions were developed in and for (Bouwer & De Smedt, 2018).

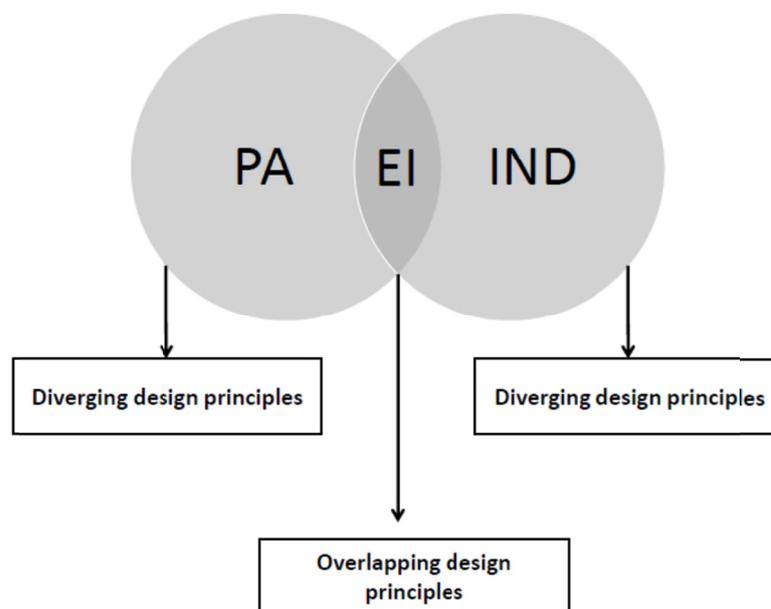
In Flanders, students start primary education at the age of six and follow six consecutive years of study. To guarantee the quality of primary education, the Flemish government lays down attainment targets. These targets are minimum objectives found necessary and attainable for primary school children (Flemish Ministry of Education and Training, 2008). The attainment targets for writing state that students should be able to copy and write texts such as letters, reports, stories, and descriptive texts by the end of primary education. Recently, a large-scale survey study was conducted with Flemish teachers and students in fifth and sixth grade (De Smedt & Van Keer, 2017; De Smedt, Van Keer, & Merchie, 2016). The results showed that students at the end of primary education have difficulties writing descriptive and narrative texts and that the instructional writing practice of teachers is not always in line with evidence-based writing practices (De Smedt & Van Keer, 2017; De Smedt et al., 2016). Based on these results, we decided to develop, implement, and evaluate an instructional writing intervention to increase fifth and sixth graders' writing performance. We specifically opted for teaching students to write descriptive instead of narrative texts as this text genre becomes especially relevant and increasingly important in secondary education. Furthermore, we consulted meta-analyses on effective writing instruction in primary grades in which several evidence-based writing practices, such as explicit writing instruction and peer-assisted writing are identified (Graham et al., 2012; Koster et al., 2015).

## 4.2 Design principles

According to the reporting scheme of Rijlaarsdam et al. (2018), design principles lay the foundation for and define the intervention. Design principles are theoretically and empirically-driven and describe a means-end-relationship by stating what instructional activity should be done to stimulate learning (Rijlaarsdam et al., 2018). Because this theoretical and empirical nature of design principles is of vital importance (Bouwer & De Smedt, 2018), writing researchers are directed to test writing interventions that are well-founded and designed (Graham & Harris, 2014). As we aim to describe two experimental research conditions (EI+PA and EI+IND) in the present article, elaborating on the design principles for both instructional interventions is required. However, as Rijlaarsdam et al. (2018) did not provide any guidelines on how to report similarities and differences between different experimental conditions on the level of design principles, we created two categories of principles (see Figure 1). The first category refers to the overlapping design principles that are identical across both experimental conditions. These principles are overlapping as both conditions focused on explicit writing instruction and were therefore based on research evidence on explicit writing instruction. The second category referred to the diverging design principles that were different across experimental conditions (also see the comparative report by López, Rijlaarsdam, Torrance, & Fidalgo, 2018). For the EI+PA condition, the diverging principles were based on research evidence on peer-assisted writing. Whereas for the

EI+IND condition, the diverging principles were based on empirical research on the effectiveness of individual writing. The construction of overlapping and diverging design principles enabled us to clearly distinguish and control for similarities and differences between both experimental conditions. In what follows, we will describe and elaborate on the overlapping as well as the diverging design principles by elaborating on the empirical and/or theoretical base of each principle.

*Figure 1.* Overlapping and diverging categories of design principles



### Overlapping design principles

**Design principle 1.** Students have to acquire writing knowledge to write effectively (Flower & Hayes, 1981; Graham, Gillespie, & McKeown, 2013). More particularly, students need to learn genre-specific knowledge such as, the content and goal of a specific genre. Further, they need to acquire knowledge on text structures so they know how texts are composed (e.g., different parts in composition or different story elements in a narrative text). Previous research consistently pointed at the effectiveness of explicit writing instruction to teach students writing knowledge (e.g., Bean & Steenwyk, 1984; De Smedt & Van Keer, 2018; Fitzgerald & Teasley, 1986). In this respect, prior research revealed the effectiveness of providing students compare and contrast tasks (Abbuhl, 2011; Charney & Carlson, 1995). This implies, more particularly, that teachers provide students with model texts to enable them to compare and contrast these texts. Additionally, teachers also have to elaborate explicitly on the differences between the

texts so students are able to discover and identify important characteristics of the genre and the text structure (Abbuhl, 2011). Based on the studies discussed above, the first design principle states: *“If you aim to increase writing knowledge, then offer students a variation of model texts so they can compare and contrast these texts”*.

**Design principle 2.** Next to text structure knowledge and genre-specific knowledge, students also need to acquire writing strategies to write effectively (Flower & Hayes, 1981; Graham et al., 2013). In this respect, students need to learn how, when, and why to plan, write, and revise texts (Berninger, Fuller, & Whitaker 1996; Flower & Hayes, 1981; Graham et al., 2013). More particularly, students should be able to apply strategies to generate and organize ideas (i.e., planning). Further and based on their planning, students need to learn how to compose texts by transcribing their ideas into words and sentences (i.e., translation). Finally, they should be able to review their text by evaluating and revising the content, structure and surface-level aspects, such as spelling (i.e., revision). Previous research studies consistently pointed at the effectiveness of explicit strategy instruction (e.g., Bouwer, Koster, & Van den Bergh, 2018; De Smedt & Van Keer, 2018; Fidalgo, Torrance, Rijlaarsdam, Van den Bergh, & Alvarez, 2015; Graham, 2006; Graham & Harris, 1993; Graham, Harris, & Troia, 2000; Limpo & Alves, 2013; Rietdijk, Janssen, van Weijen, van den Bergh, & Rijlaarsdam, 2017). Explicit strategy instruction requires a set of specific instructional activities implying that the teacher is key in promoting students’ strategy use. Based on previous experimental research, several important teaching activities come to the fore. More particularly, several evidence-based writing programs provide similar instructional guidelines (e.g., Bouwer et al., 2018; De Smedt & Van Keer, 2018; Fidalgo & Torrance, 2018; Fidalgo et al., 2015; Graham & Harris, 2018; Graham et al., 2000; Koster & Bouwer, 2018; Limpo & Alves, 2013; López et al., 2018; Rietdijk et al., 2017). A first recurring instructional guideline is teachers modelling the writing strategies so students can learn by observing (e.g., Fidalgo et al., 2015). More particularly, teachers should explain, verbalize, and demonstrate their thoughts, actions, and reasons while planning, writing, revising, and editing texts (Schunk, 2003). Next to modelling, the need to support students in memorizing the different strategy steps by means of, for instance, mnemonics (Graham & Harris, 2018; Koster & Bouwer, 2018; López et al., 2018; Rietdijk et al., 2017) or strategy cards (e.g., De Smedt & Van Keer, 2018) is highlighted as well. Based on these theoretical and empirical insights, the second design principle states: *“If you aim to increase students’ use of writing strategies (e.g., planning, writing, and revising), then explicitly teach and model how, when, and why they should use these strategies”*.

**Design principle 3.** Once writing knowledge and strategies are taught, students should be able to internalize these. In this way, they can transfer the knowledge and strategies to new and unfamiliar writing tasks (Flower & Hayes, 1981; Graham et al., 2013). To stimulate internalization, previous research showed the effectiveness of creating supporting writing environments in which practice opportunities are central (e.g., De Smedt & Van Keer, 2018; Graham et al., 2000). During practice, teachers

should provide feedback on both the writing product and process (e.g., Limpo & Alves, 2013). Additionally, teachers should gradually release responsibility from guided practice to independent performance by encouraging students to internalize the knowledge and strategies taught (e.g., Bouwer et al., 2018; De Smedt & Van Keer, 2018; Graham & Harris, 2018; Graham, Harris, & Mason, 2005; Graham et al., 2000; Koster & Bouwer, 2018; Rietdijk et al., 2017). Based on these studies, the third design principle states: *“If you aim to increase the internalization of writing knowledge and the use of writing strategies, then provide optimal writing opportunities so students can practice while gradually diminishing guidance”*.

### **Diverging design principles**

**Design principle 4A.** Several meta-analyses provided evidence on the effectiveness of peer-assisted writing to stimulate primary school students’ writing performance (Graham et al., 2012; Koster et al., 2015). Peer-assisted writing is defined as “students working together to plan, draft, and/or revise their compositions” (Graham & Perin, 2007, p. 449). In the meta-analyses reference is made to the effectiveness of different applications of peer-assisted writing, such as peer discussions and peer help (e.g., Harris, Graham, & Mason, 2006), peer feedback (e.g., Holliway, 2004), and peer tutoring (e.g., Nixon & Topping, 2001; Sutherland & Topping, 1999; Yarrow & Topping, 2001). Previous research, more particularly, pointed at important conditions determining the effectiveness of peer-assisted writing (Dale, 1994), guiding teachers to align their instructional activities to these conditions. First, teachers should create a collaborative writing environment in which shared responsibility and engagement are central. This implies that students must be engaged with and feel responsible for each other, the topic, and the writing process. Second, when grouping students into collaborative groups, the teacher should take into account the internal dynamic between group members as mutual trust is required. Third, teachers should include challenging writing assignments to create a certain level of cognitive conflict so students can collaboratively reach a consensus. Finally, teachers should structure the collaboration so students are able to coordinate their activities while planning, writing, and revising collaboratively (Dale, 1994). Based on these empirical and theoretical insights, design principle 4A states: *“If you aim to increase students’ writing, then provide peer-assisted writing opportunities to practice collaboratively with a peer”*.

**Design principle 4B.** In a recent intervention study, De Smedt and Van Keer (2018) found no significant differences between individual writing practice and peer-assisted writing practice. These findings contrast previous research on the effectiveness of peer-assisted writing in primary education (Graham et al., 2012; Koster et al., 2015) and led us to construct design principle 4B, which states: *“If you aim to increase students’ writing, then provide individual writing opportunities to practice individually”*.

### 4.3 Design principles translated into teaching and learning activities

Following Rijlaarsdam et al. (2018), we translated the abovementioned design principles into concrete teaching and learning activities. A learning activity is a (meta)cognitive activity, stimulated by an instructional teaching activity, that results in a certain learning outcome or experience (Rijlaarsdam et al., 2018). Consequently, teaching and learning activities are inherently connected and are therefore described simultaneously.

For a more concise description of the overlapping design principles and the translation thereof in teaching and learning activities in both the EI+PA and the EI+IND program, we refer to Table 1. Furthermore, Table 2 provides a description of the diverging design principle, teaching and learning activities solely connected to the EI+PA program, while Table 3 provides an overview of the design principle, teaching and learning activities of the EI+IND program. These three tables are constructed following the reporting scheme of Rijlaarsdam et al. (2018). In the first column, the design principles are listed as if-then statements clarifying the learning outcome (in black), the teaching activities (in green), and the learning activities (in blue). The rationale for each of these design principles was included by referring to previous empirical research. In this way, each design principle was provided with an evidence-based underpinning. Based on these design principles, concrete operationalisations of instructional teaching activities (column 2) and learning activities (column 3) were designed.

#### **Overlapping design principles: Teaching and learning activities in the EI+PA and EI+IND program**

Design principle 1: If you aim to increase writing knowledge, then show students a variation of model texts so they can compare and contrast these texts (see Table 1). Based on this design principle, teachers introduced the writing genre by offering students two varying descriptive model texts (see Appendix A and B). Both models included good and bad elements of the descriptive text genre (e.g., model text 1 included paragraphs but little information was included while model text 2 did not include paragraphs but ample information was provided). After reading both texts aloud in front of the class, the teacher guided students in how to compare and contrast them. More particularly, the teacher structured the compare and contrast task so students could analyse the goal, the content, and the structure of descriptive texts (see Appendix C). After completing the compare and contrast task, a class discussion about the goal, content, and structure of the descriptive genre was held. After the class discussion, the teacher showed a third model text which combined characteristics of previous model texts into one good example text (see Appendix D). Finally, the teacher offered students a memory card, summarizing all key features of the genre (see Appendix E). The teacher discussed the memory card by referring to the specific examples in the compare and contrast task. By comparing and contrasting model texts and discussing these examples,

students learned to discover, identify, and label important characteristics of the descriptive genre.

Design principle 2: If you aim to increase students' use of writing strategies (e.g., planning, writing, and revising), then explicitly teach and model why, when, and how to use these strategies (see Table 1). Based on this design principle teachers explicitly taught students how to plan, write, and revise descriptive texts. More particularly, teachers applied the following instructional procedure.

First, they pointed out the importance and value of a writing strategy by referring to everyday activities and discussing the value of such strategies while writing. In this way, students had to actively think about the usefulness and importance of using strategies in everyday life and they had to reflect on how these strategies could be helpful when writing texts.

Second, teachers explored students' strategy use by discussing whether, when, and how students already used planning, writing, and/or revising strategies while writing. In this way, students' background knowledge on writing strategies was activated. More particularly, they were able to share previous experiences on applying writing strategies and to recapitulate what they specifically did while applying a writing strategy.

Third, each writing strategy (i.e., planning, writing, and revising strategy) was modelled by the teacher. More particularly, the teacher demonstrated the strategy in front of the class while visualizing the writing strategy on the black board or smartboard. While demonstrating, the teacher thought aloud what he/she was thinking and doing and how and why he/she applied the strategy. By modelling the strategies, students were able to observe and gain insights into the application of a specific strategy and into the thinking process of the teacher. Additionally, the teacher also modelled writing behaviour by intentionally making and correcting errors or by explicitly showing he/she struggled with the writing task. In this way, students became aware of the fact that writing is a complex task, even for experienced writers. While modelling, the teacher involved students to actively participate by asking for help to come up with ideas to write, construct sentences, or correct errors in the text. By including interactive modelling, student were actively involved in the modelling process.

After the teacher modelled each writing strategy separately, they offered students strategy cards, summarizing the important steps of the different writing strategies. In total, students received three strategy cards: (a) a planning card accompanied with a planning scheme, (b) a writing card, and (c) a revision card (see Appendix F, G, and H, respectively). The teacher explained and discussed the strategy cards with the students by referring to the steps and processes modelled. In this way, students were able to comprehend and remember the different strategies and relate these to the strategy steps modelled by the teacher.

*Table 1.* Overview of the overlapping design principles, instructional teaching activities, and learning activities in both the EI+PA and the EI+IND program

EI+PA and EI+IND program		
Overlapping design principles	Instructional teaching activities	Learning activities
<p>If you aim to <b>increase writing knowledge</b>, then <b>offer students a variation of model texts</b> so they can <b>compare and contrast</b> these texts (e.g., Abbuhl, 2011; Charney &amp; Carlson, 1995).</p>	<p><b>Offer a variation of model texts</b></p> <p>Offer students two varying model texts within the descriptive genre (<i>cf.</i>, <i>Appendix A and B</i>)</p> <p>Provide students with the ‘compare and contrast task’ (<i>cf.</i>, <i>Appendix C</i>)</p> <ul style="list-style-type: none"> <li>- Discuss the goal, the content, and the structure of the texts with the students</li> </ul> <p>Provide students with a third model text which combines characteristics of the previous model texts into one good example (<i>cf.</i>, <i>Appendix D</i>)</p> <p>Offer students a memory card, summarizing the key features of the genre and discuss the card (<i>cf.</i>, <i>Appendix E</i>)</p>	<p><b>Compare and contrast</b></p> <ul style="list-style-type: none"> <li>- Compare and contrast the model texts to discover, identify, and label important characteristics of the genre</li> <li>- Discuss the goal, the content, and the structure of the texts with the teacher and peers</li> <li>- Read and comprehend the memory card</li> <li>- Try to remember all the important characteristics of the genre</li> </ul>
<p>If you aim to <b>increase students’ use of writing strategies</b> (e.g., planning, writing, and revising), then <b>explicitly teach and model why, when, and</b></p>	<p><b>Explicitly teach and model</b></p> <ul style="list-style-type: none"> <li>- Point out the importance and value of a specific strategy</li> <li>- Activate students’ background knowledge on writing strategies</li> <li>- Model the writing strategy:               <ul style="list-style-type: none"> <li>o Demonstrate the strategy in front of the class</li> </ul> </li> </ul>	<p>Why, when, and how to use these strategies</p> <ul style="list-style-type: none"> <li>- Notice why writing strategies are useful and important</li> <li>- Think of writing strategies you already used when writing</li> <li>- During teacher modeling:</li> </ul>

<p><b>how they should use these strategies</b> (e.g., Bouwer et al., 2018; De Smedt &amp; Van Keer, 2018; Fidalgo et al., 2015; Graham, 2006; Graham &amp; Harris, 1993; Graham et al., 2000; Limpo &amp; Alves, 2013; Rietdijk et al., 2017).</p>	<ul style="list-style-type: none"> <li>○ Model the writing strategy by thinking aloud what you are thinking and doing, and how and why you apply the writing strategy</li> <li>○ Visualize the writing strategy on the black board or smartboard</li> <li>○ Model your writing behaviour by intentionally making and correcting errors or by showing you have difficulties with the task</li> <li>○ Involve students while you are modelling a writing strategy so they can actively participate</li> </ul>	<ul style="list-style-type: none"> <li>○ Observe how the teacher demonstrates and models the strategy on the (smart)board</li> <li>○ Listen and try to comprehend what the teacher is thinking and doing</li> <li>○ Help the teacher while he/she is planning, writing, or revising a text by providing ideas to write about, by offering suggestions to optimize the text, ...</li> </ul>
<p>Offer students strategy cards, summarizing the important steps of the different writing strategies and discuss the strategy cards (planning card, writing card, and the revision card) (<i>cf.</i>, Appendix F, G, and H)</p>	<ul style="list-style-type: none"> <li>- Offer students challenging and communicative writing tasks that focus on practicing a specific writing strategy and provide feedback concerning students' writing process and text</li> </ul>	<ul style="list-style-type: none"> <li>- Read and try to comprehend the strategy cards</li> <li>- Practice the writing strategy by planning, writing, or revising a text</li> <li>- Use the memory card and strategy cards to guide you through the writing process and try to remember all the important steps of the strategy</li> <li>- Take teachers' feedback concerning your writing process and text into account while planning, writing or revising a text</li> </ul>
<p>If you aim to increase the internalization of writing knowledge and the use of writing strategies, then <b>provide optimal writing</b></p>	<p><b>Provide optimal writing opportunities and practices while gradually diminishing guidance</b></p> <p>Introduce and discuss the integration card, summarizing all previous cards (<i>cf.</i>, Appendix I)</p> <ul style="list-style-type: none"> <li>- Offer and introduce challenging and communicative</li> </ul>	<p><b>Practice</b></p> <ul style="list-style-type: none"> <li>- Read and try to comprehend the integration card</li> <li>- Practice by planning, writing, and revising a text</li> </ul>

opportunities and practices so students can practice while gradually diminishing guidance (e.g., Bouwer et al., 2018; De Smedt & Van Keer, 2018; Graham, Harris, & Mason, 2005; Rietdijk et al., 2017)

- writing tasks
- Provide feedback concerning students' text and writing process
- Challenge students to internalize the writing process by gradually diminishing guidance
- Differentiate: offer less proficient writers or groups of writers the help they need (e.g., memory card, strategy cards, planning scheme) and challenge more skilled writers or groups of writers to gradually diminish the use of the supporting materials:
  - Memory card, strategy cards, planning scheme
  - ↓
  - Integration card and planning scheme
  - ↓
  - Integration card
  - ↓
  - No supporting materials
- Encourage (groups of) students to check either their own work or work of another group of students before handing in

- Use the memory card, strategy cards, planning scheme, and integration card if you need additional support when planning, writing, and revising the text
  - Ask the teacher for additional help if you have difficulties with planning, writing, and revising the text
  - Internalize the writing process and the genre knowledge
  - Try to systematically write without the supporting materials
  - Check your work or the work of another writing group before handing in
-

**Table 2.** Overview of the differing design principle, instructional teaching activities, and learning activities within the EI+PA program

EI+PA program		
Differing design principle	Instructional teaching activities	Learning activities
<p>A. If you aim to <b>increase students' writing</b>, then <b>provide peer-assisted writing opportunities to practice collaboratively with a peer</b> (e.g., De Smedt &amp; Van Keer, 2018; Harris et al., 2006; Nixon &amp; Topping, 2001; Sutherland &amp; Topping, 1999; Yarrow &amp; Topping, 2001).</p>	<p>Provide peer-assisted writing opportunities</p> <p>Create engagement and mutual trust: Group students into fixed heterogeneous dyads by taking into account their writing level and matching personalities</p> <p>Discuss the importance and added value of writing together</p> <p>Organize a class discussion so students can agree on some collaboration rules (<i>cf.</i>, Appendix I)</p> <p>Structure the collaboration: Introduce three roles: (1) the thinker, (2) the strategy card reader, and (3) the reporter</p> <p>Support students in role-taking by providing them role badges (<i>cf.</i>, Appendix K)</p> <p>Provide one writing portfolio per group so students work on a shared writing document</p> <p>Model collaboration: Demonstrate how the roles are assigned</p>	<p><b>Practice collaboratively with a peer</b></p> <ul style="list-style-type: none"> <li>- Agree on collaboration rules</li> <li>- Collaborate with your writing partner by fulfilling your role as thinker and strategy card reader or reporter. Depending on your role, do the following:</li> </ul> <p><b>Thinker:</b></p> <ul style="list-style-type: none"> <li>o Think of good ideas to write about</li> <li>o Keep the goal of your text in mind</li> <li>o Think about the content of your text</li> <li>o Think about the structure of your text</li> <li>o Think about words and sentences you want to write in your text</li> <li>o Think of how you can improve your text</li> </ul> <p><b>Strategy card reader:</b></p> <ul style="list-style-type: none"> <li>o Read the strategy card(s)</li> <li>o Explain the different steps of the strategy</li> </ul>

Model your role as strategy card reader by guiding the reporter and the other students through the different steps of a specific strategy

Model appropriate collaboration and interaction skills

- Create opportunities for collaboration across different writing groups by including peer feedback

to the reporter

- o Guide the reporter in planning, writing, and/or revising the text
- o Monitor your strategy use: are you following each step as prescribed on your strategy card?

Reporter:

- o Take notes of the ideas you and your writing partner are thinking about and fill in the planning scheme
  - o Write down the text you and your partner are constructing
  - o Correct and revise the text if you and your partner want to change something in your text
  - Work together with your partner in your shared writing portfolio
  - Read the work of another writing group and provide concrete feedback
  - Use the received feedback to improve your writing
-

**Table 3.** Overview of the differing design principle, instructional teaching activities, and learning activities within the EI+IND program

EI+IND program		
Differing design principle	Instructional teaching activities	Learning activities
4 B. If you aim to increase students' writing, then <b>provide individual writing opportunities</b> to <b>practice individually</b> (e.g., De Smedt & Van Keer, 2018)	<p><b>Provide individual writing opportunities</b></p> <p>Discuss the importance and added value of independent and individual work during writing</p> <p>Organize a class discussion so students can agree on some rules to create a writing environment that fosters individual writing (<i>cf.</i>, <i>Appendix L</i>)</p> <p>Structure individual writing by offering each student an individual writing portfolio</p>	<p><b>Practice individually</b></p> <p>Agree on rules you think are important when writing individually</p> <p>Work individually in your personal writing portfolio</p>

*Table 4.* Overview of the writing lesson programs

Lesson	Focus of the lesson	Design principle(s)	Instructional materials	Writing assignment	EI+PA	EI+IND
1	Explicitly teaching students writing knowledge	1	Model texts (cf., Appendix A, B, C, and D) Memory card (cf., Appendix E)			
2A	Rules on writing collaboratively	4A	Collaboration card (cf., Appendix J) Role badges (cf., Appendix K)			
2B	Rules on writing individually	4B	Individual writing card (cf., Appendix L)			
3	Explicitly teaching students the planning strategy	2 and 4A or 4B	Planning card and scheme (cf., Appendix F)	Appendix M and N		
4	Explicitly teaching students the writing strategy	2 and 4A or 4B	Writing card (cf., Appendix G)	Appendix M and N		
5	Practice lesson: planning and writing a text	2 and 4A or 4B		Appendix O		
6	Explicitly teaching students the revising strategy	2 and 4A or 4B	Revision card (cf., Appendix H)	Appendix O and P		

7	Practice lesson: revising a text	2 and 4A or 4B		Appendix Q
8	Guided instruction: integrating the strategies	3 and 4A or 4B	Integration card (cf., Appendix I)	Appendix R
9	Practice lesson: planning, writing, and revising a text	3 and 4A or 4B		Appendix S
10	Practice lesson: planning, writing, and revising a text	3 and 4A or 4B		Appendix T
11	Practice lesson: planning, writing, and revising a text	3 and 4A or 4B		Appendix U

As a final step in the instructional procedure to explicitly teach students writing strategies, the teacher provided students short writing tasks so they could practice each strategy separately, immediately after the strategy was modelled and discussed. While practicing, teachers provided feedback concerning students' strategy use and text. The students used the memory card and depending on which strategy they were practicing, they also used the strategy card to guide them through the different steps of the strategy.

**Design principle 3: If you aim to increase the internalization of writing knowledge and the use of writing strategies, then provide optimal writing opportunities so students can practice while gradually diminishing guidance** (see Table 1). After explicitly teaching each strategy separately, the teacher introduced and discussed the integration card, summarizing the previous cards in a nutshell (see Appendix I). Next to information on genre and text structure knowledge, the integration card also contained information on the different steps of each strategy (i.e., planning, writing, and revision strategy). In this way, the integration card guided the students through the whole writing process. After the integration card was introduced and discussed, the teacher guided the students through the complete writing process by interactively planning, writing, and revising a descriptive text together. In this respect, students recapitulated important key features of the genre and discussed together with the teachers and peers the different steps of the strategies.

After receiving the integration card and practicing all writing strategies together, the teacher offered students challenging and communicative writing tasks in view of practicing all writing strategies. Students could use the memory card, strategy cards, and integration card for additional help while writing. During practice, teachers provided feedback concerning students' texts (e.g., goal, content, and structure) and writing process (e.g., planning, writing, and revision strategies). Additionally, they challenged students to internalize the writing process by gradually diminishing guidance taking into account students' individual or group writing level. More particularly, teachers differentiated between less proficient and more skilled (groups of) writers: less proficient writers or less proficient groups of writers could use the different strategy cards as additional help, while more skilled writers or more skilled groups of writers could work with the integration card or without any supporting materials. Finally, before handing in their writing assignment, students were encouraged to check either their own work (i.e., EI+IND) or work of another writing group (i.e., EI+PA). If needed, they had to revise their writing document (i.e., planning scheme or text) before handing in. Concerning the planning scheme, students had to place a question mark next to the idea(s) they wanted more information on. Concerning the text itself, students had to make notes in the text according the revision strategy (cf. Appendix H).

**Diverging design principle: Teaching and learning activities in the EI+PA program**

Design principle 4A: If you aim to increase students' writing, then provide peer-assisted writing opportunities to practice collaboratively with a peer (see Table 2). To ensure optimal collaboration, teachers first had to create engagement and mutual trust between writing partners. In this respect, they grouped students into heterogeneous dyads by taking into account students' writing level (i.e., pairing less proficient and more skilled writers) on the one hand and the relation between the students (i.e., matching personalities) on the other hand. More specifically, teachers ranked all their students ranging from 'the most skilful writer' to the 'the most struggling writer'. Subsequently, they split the ranking in half, so they were able to pair the most skilful writer in the first half to the most skilful writer in the second half. They followed this procedure until all students had a writing partner. If a dyad consisted of students with clashing personalities, the teacher adjusted the pairing procedure. In case of an uneven number of students in the class, the teacher exceptionally created one group of three students. To ensure engagement and mutual trust, the groups remained stable for the duration of the intervention. In this way, students could get used to each other's abilities and limitations. Additionally, the teacher discussed the importance and added value of writing together and organized a class discussion so students could agree on some collaboration rules to write together (e.g., listening to each other, negotiating, compromising, respecting each other's input, ...). The students had to summarize and agree on these collaboration rules by writing the rules on a collaboration card. Finally, they had to sign the card to show their engagement (see Appendix J).

Second, the teacher structured the collaboration between students by introducing three roles. The first role, labelled 'the thinker', applied to both students in the pairs, implying that in each writing lesson and at all times all students were thinkers. As a thinker, students had to think of good ideas to write about, keep the goal of the text in mind, think about the content and structure of the text, think about words and sentences, and think about how to improve the text. The second and third assigned role, labelled as 'the strategy card reader' and 'the reporter', respectively, were exchangeable. Each lesson, the dyads switched these roles. The strategy card reader had to read the strategy card(s), explain the different steps of the strategy to the reporter, guide the reporter in planning, writing, and/or revising the text, and monitor their strategy use to make sure they were following all the steps as prescribed on the strategy card. The reporter on the other hand had to take notes of the ideas they were inventing collaboratively, fill in the planning scheme, write down the text they constructed in pairs, and correct and revise the shared text if they collaboratively decided to make adjustments. The teacher supported students' role-taking by providing them role badges (see Appendix K). In this way, students could visualise their role by pinning their role badge. Next to the roles, the teacher structured the collaboration by providing one

writing portfolio per dyad. In this way, students had to work on a shared writing document (e.g., shared planning scheme or shared text).

Third, the teacher modelled how students could collaborate while writing. More particularly, when the teacher modelled the writing strategies (cf., design principle 2), he/she also demonstrated how students could work together in pairs. First, the teacher invited one student to accompany him/herself during modelling. Then, he/she demonstrated the assignment of the roles and role badges as follows: the whole class (including the teacher and accompanying student) was assigned the role of thinker, the teacher was the strategy card reader, while the accompanying student performed the reporter role. The teacher modelled the role of the strategy card reader by guiding the reporter and the other students through the different steps of a specific strategy. The accompanying student modelled the role of the reporter by filling in the planning scheme (cf., planning strategy), writing a text (cf., writing strategy), and revising the text (cf., revision strategy). Next to modelling a specific strategy and the role of strategy card reader, the teacher also modelled appropriate collaboration and interaction skills, such as listening to each other's ideas, negotiating, compromising, and respecting each other's input.

Finally, the teacher created collaboration opportunities across the different writing groups. More particularly, before handing in their written work, each pair of students had to exchange their work (e.g., planning scheme or text) with another pair of students. They had to read each other's work and provide concrete feedback on the written products. The teacher guided the students in providing peer feedback by offering them specific guidelines on how to do this (cf. design principle 3).

### **Diverging design principle: Teaching and learning activities in the EI+IND program**

Design principle 4B: If you aim to increase students' writing, then provide individual writing opportunities to practice individually (see Table 3). Based on this design principle, the teacher first had to create a writing environment in which students can practice writing individually. More particularly, he/she discussed the importance and added value of independent and individual work during writing. Additionally, the teacher organized a class discussion so students could agree on some rules to create a writing environment that fosters individual and independent writing (e.g., work quietly, do not disturb your classmates, address your questions to the teacher and not to a classmate, ...). Once students agreed on the rules, they had to write the rules on an individual writing card and they had to sign the card to show they would respect the rules (see Appendix L). Next to creating a safe writing environment fostering individual writing, the teacher also structured individual writing. More particularly, he/she offered each student an individual writing portfolio. In this way, students worked individually in their personal writing portfolio.

#### 4.4 Writing lesson programs and instructional materials

The teaching and learning activities were translated into two concrete writing lesson programs: the EI+PA and the EI+IND program. Both writing programs were identical (cf., overlapping design principles) with the exception that the EI+PA program integrated peer-assisted writing (cf., diverging design principle 4A) whereas the EI+IND program integrated individual writing (cf., diverging design principle 4B). Both writing programs consisted of 11 writing lessons, spread over ten consecutive weeks resulting in one lesson per week (with the exception of the first week in which the teacher had to teach two lessons). We opted for this time-based approach as the sequence of the writing lessons had to fit within the trimestral system in Flemish school. Table 4 presents an overview of both lesson programs by showing the focus of each lesson, the design principle(s) on which the lesson was based, the instructional materials introduced during the lesson, and the writing assignments used for modelling and/or practicing. Additionally, Table 4 clearly indicates which lessons were included in both writing programs and which lessons were included in either the EI+PA condition or in the EI+IND condition. As can be seen in Table 4, lesson 1 was identical in both conditions while lesson 2A and 2B were only included in either the EI+PA (lesson 2A) or the EI+IND condition (lesson 2B). All other lessons (i.e., lesson 3 to 11) were included in both conditions but they slightly differed depending on design principle 4A (EI+PA: students writing with a peer) or 4B (EI+IND: students writing individually).

To increase clarity, transparency, and continuity throughout the writing program, each writing lesson followed a fixed format with three lesson phases. First, the teacher recapitulated the previous lesson and stated the goals of the present lesson during an introduction phase. After the introduction, an instruction or practice phase was included. During instruction, the teacher introduced, modelled, and explicitly taught writing knowledge or strategies. During practice, students practiced writing while the teacher provided feedback. After instruction or practice, the teacher concluded the lesson with a reflection/recapitulation phase in which students had to synthesize what they learned or publicly share their written text.

Next to the writing lesson programs, supplementary instructional materials, such as writing portfolios, memory cards (cf. appendix E), strategy cards (cf. appendix F, G, and H), and integration cards (cf. appendix I) were provided in both experimental conditions. While the EI+PA students received collaboration cards (cf. appendix J) and role badges (cf. appendix K), the EI+IND students received individual writing cards (cf. appendix L).

#### 4.5 Teacher training

To support teachers in implementing the writing program, two researcher-directed training sessions were organized. The first session was intended for EI+PA teachers while the second one was organized for EI+IND teachers. Both sessions contained a 3-h group training in which teachers were guided through the detailed teacher manuals

(EI+PA: 92 pages and EI+IND: 81 pages). Next to a comprehensive description of the background, aims, and organization of the intervention, the teacher manuals provided detailed lesson scenarios. Each lesson scenario described the objectives, the materials, the content, and the instructional approaches of a specific lesson. In addition, all teachers were trained on how to explicitly teach writing knowledge and strategies during hands-on practices and the EI+PA teachers were provided with specific guidelines on how to implement and structure peer-assisted writing. During the intervention period, teachers were also provided with an in-service training session in which they were coached in the implementation of the writing program.

## 5. Discussion

The present study aimed to meet a major shortcoming in reporting writing interventions, namely the lack of clear and detailed descriptions of writing interventions in the majority of the writing research articles. This hinders theory building, replication, dissemination, and implementation of evidence-based writing practices (Rijlaarsdam et al., 2018). Additionally, the present study provides clear guidelines on how to report similarities and differences between different instructional writing programs by means of overlapping and diverging design principles. In the present article we specifically focused on analytically describing two writing programs: EI+PA students received explicit instruction of writing knowledge and strategies while practicing writing with a peer, while EI+IND students received the exact same type of explicit writing instruction but they practiced writing individually. Both programs were analytically described by means of the reporting system of Rijlaarsdam et al. (2018). Following this reporting scheme, the programs were described by defining overlapping and differing design principles, instructional teaching activities, and learning activities. Below, we first elaborate on the scientific significance of the EI+PA and EI+IND writing program by situating them in the current research base on explicit instruction of writing knowledge and strategies and on peer-assisted writing. More specifically, on the one hand we highlight key aspects of the writing programs that are in line with existing evidence-based writing programs. On the other hand, we also point out key aspects in which our writing programs differ from existing research and thus expand our current knowledge base on explicit writing instruction and peer-assisted writing. Furthermore, we present some hypotheses on which differential features of the EI+PA program might explain the additional effect of peer-assisted writing. Second, we provide suggestions on how to report design principles when different experimental writing programs need to be described. In this respect, we underline the need for reporting overlapping and diverging design principles. To conclude, we discuss the value and usability of the reporting scheme of Rijlaarsdam et al. (2018) to analytically describe writing interventions.

### 5.1 Scientific significance of the EI+PA and EI+IND writing program

Based on several meta-analyses, it can be stated that the explicit instruction of writing knowledge and strategies in primary grades is well-researched (Graham, 2006; Graham et al., 2012; Koster et al., 2015). Consequently, quite a few evidence-based writing programs have been developed in which explicit writing instruction is key. The Self-Regulated Strategy Development (SRSD), in this respect, is by far the most studied instructional writing program and has been acknowledged as a very powerful and evidence-based program to enhance students' writing (Graham & Harris, 2018; Graham et al., 2012; Harris & Graham, 2016, 2018). Next to SRSD, other writing programs such as, for instance, the Cognitive Self-Regulation Instruction (CSRI) (Fidalgo & Torrance, 2018), Tekster (Bouwer et al., 2018; Koster & Bouwer, 2018), and a comprehensive writing program focused on communicative writing (Rietdijk et al., 2017) have also been proven to be very effective in improving students' writing. The EI+PA and EI+IND programs described in the present article, are in line with these previous programs. More particularly, all the evidence-based writing programs referred to are comprehensive and multifaceted programs containing several key writing practices. The key practice which is central in each of these programs is identical, namely the explicit instruction of writing strategies. Based on this key practice of explicit strategy instruction, instructional activities such as modelling, supporting memorization of the writing strategy, scaffolding, and guided practice with gradual release of responsibility are present in all writing programs discussed (Bouwer et al., 2018; Fidalgo & Torrance, 2018; Harris & Graham, 2016, 2018; Rietdijk et al., 2017). However, each program operationalized these instructional activities differently according to the different educational contexts in which the programs were implemented. The EI+PA and EI+IND program, for instance, was the only program that does not apply mnemonics to support students in memorizing the (steps of the) strategies. For the EI+PA and EI+IND programs we developed strategy cards for each writing strategy (i.e., planning, writing, and revising) and an integration card summarizing the strategy cards to support memorization. In this respect, the EI+PA and EI+IND program differed from prior evidence-based writing programs and in this way research on the effectiveness of the EI+PA and EI+IND program expands our current knowledge base on explicit writing instruction.

In contrast to research on explicit writing instruction, research on peer-assisted writing in primary grades is rather limited (Graham et al., 2012; Koster et al., 2015). The majority of the studies focus on a specific application of peer-assisted writing, for instance peer discussions and peer help (Harris et al., 2006), or peer feedback (Hollaway, 2004). Contrary to these specific peer-assisted writing applications, Paired Writing is the most structured system of peer-assisted writing because tutor and tutee roles and behaviours are identified at each step of the writing process (i.e., generating ideas, drafting, reading, editing, producing a best copy, and evaluating) (Nixon & Topping, 2001; Sutherland & Topping, 1999; Yarrow & Topping, 2001). Although

Paired Writing is primarily designed for peer tutoring in which one member is more skilful at writing, the program can also be used for co-composition with reciprocal roles (Yarrow & Topping, 2001). In accordance to Paired Writing, the EI+PA program can also be considered as a structured system of peer-assisted writing as the roles and behaviours of the card reader, the reporter, and the thinker are embedded throughout the complete writing process (i.e., planning, writing, and revising). The EI+PA program, however, also significantly differs from Paired Writing as it not designed for peer tutoring but exclusively focusses on co-composition with reciprocal roles. Furthermore, the EI+PA program goes beyond Paired Writing as collaboration between writing pairs is also facilitated (e.g., writing pairs provide peer feedback on each other's planning scheme and text).

To conclude, the EI+PA program discussed in the present article is the first evidence-based writing program which successfully combines explicit writing instruction and a structured system of peer-assisted writing. The effectiveness of this program largely depends on the complementary nature of explicit writing instruction on the one hand and peer-assisted writing on the other hand (Ferretti & Lewis, 2013). More particularly, explicit instruction can foster students' acquisition of writing knowledge and strategies (Graham, 2006), while a structured system of peer-assisted writing can offer students opportunities to practice and apply the knowledge and strategies taught (Daiute & Dalton, 1993). The effectiveness of the EI+PA program was also highlighted when EI+PA students significantly outperformed their EI+IND counterparts. Based on the deep analysis of both writing programs by means of overlapping and differing design principles, we can put forward some hypotheses on which differential features of the EI+PA program might explain the additional effect of peer-assisted writing. First, the EI+PA students were writing in heterogeneous dyads in which less proficient writers were matched with more skilful writers. Based on previous research in which cross-ability groups were compared to same-ability groups (Sutherland & Topping, 1999), the effect of the EI+PA program might depend on the group composition in which more skilful writers support less proficient writers'. Second, the EI+PA program structured the collaboration between students. More particularly, students were assigned roles which helped them identify different types of behaviour during the writing process. Additionally, the roles were also modelled by the teacher and peers so students could learn appropriate collaboration and interaction skills by observing. Finally, by providing students shared writing documents, students felt a kind of shared responsibility to complete their writing assignments collaboratively. By structuring peer-assisted writing in this way, students were provided specific guidelines and routines on how to collaborate and interact. Such structuring is essential for peer-assisted writing in order to be successful (Dale, 1994; De Smedt & Van Keer, 2018). A final feature that might explain the additional effect of peer assistance in the EI+PA program is the inclusion collaboration opportunities between writing groups. More particularly, each pair of students had to exchange their written work with another pair of students. They had to

read each other's work and provide concrete feedback on the written products. This type of peer feedback has also been proven to be effective (Hollaway, 2004).

## 5.2 The need for overlapping and diverging design principles

Based on the results of the present study and our experiences with the reporting system of Rijlaarsdam et al. (2018) we want to propose some additional guidelines on analytically describing writing interventions. A lot of writing intervention studies include more than one experimental condition in order to compare these to each other. In realising this, researchers have to meticulously distinguish condition-specific intervention elements from intervention elements that are identical across the different experimental conditions. In this way, they can control for similarities and differences between the experimental conditions enabling them to make valid claims on possible significant intervention effects. In the present study, we particularly wanted to compare the EI+PA condition with the EI+IND condition. The explicit writing instruction was identical in both experimental writing programs. The only difference between both conditions was the fact that EI+PA students practiced writing collaboratively, while EI+IND students practiced individually. In this way, we would be able to attribute possible significant differences concerning the impact of both interventions to the impact of either peer-assisted writing or individual writing. Based on our experiences with the reporting system, we argue that it is essential for writing researchers to explicitly take into account the similarities and differences between different experimental writing conditions. In this respect, researchers should design and report on the one hand condition-specific design principles, teaching activities, and learning activities to control for differences between the experimental conditions. On the other hand, they should also design and report design principles, teaching activities, and learning activities that are present across experimental conditions to control for the similarities between conditions. In the present study, we specifically reported these similarities and differences by means of overlapping and diverging design principles. In this way, writing researchers and educational practitioners can gain insight into the crucial intervention elements and the underlying empirical and theoretical principles that are on the one hand identical across interventions and on the other hand distinguish the different interventions from each other. In this respect, also see the proposed approach of López et al. (2018) for reporting comparative or concurrent interventions in writing studies.

The adoption of overlapping and diverging design principles when describing intervention programs becomes increasingly important in the light of the growing need for response to intervention studies (RTI). The RTI-framework provides a multi-tiered problem-solving process to support and monitor all students' writing and to intervene as soon as possible if students do not respond to a specific writing program (Mesmer & Mesmer, 2008; Saddler & Asaro-Saddler, 2012). In tier 1, all students receive the same educational writing program. Students who are not responding as anticipated are

provided with more intense interventions in tier 2. Students who fail to succeed in tier 2 receive more intense specialized and individualized writing instruction in tier 3 (Saddler & Asaro-Saddler, 2012). In order to efficiently implement scientifically based interventions in schools according the RTI-framework, writing researchers have to translate their evidence-based writing programs into specific teaching guidelines. In this respect, we would recommend the use of overlapping and diverging design principles to identify the teaching and learning activities that are similar across tiers and to distinguish the teaching and learning activities that are tier specific.

### 5.3 Value and usability of a reporting system to analytically describe writing interventions

To conclude, we underline the value of a reporting system such as the scheme of Rijlaarsdam et al. (2018) as it stimulates and explicitly prompts writing researchers to be more aware of the designing process of writing interventions. The reporting scheme of Rijlaarsdam et al. (2018) is particularly helpful and serves the purpose as it requires researchers to explicitly define and share design principles, teaching activities, and learning activities. Following this scheme, researchers are first encouraged to actively think of design principles that underlie the intervention. As these design principles are grounded in empirical and/or theoretical research, researchers can demonstrate and ensure the empirical and theoretical value of the different ingredients of their intervention. Based on these design principles, researchers not only consider instructional teaching activities, but they also reflect on what kind of learning activities they want students to perform in order to foster their writing. By doing so, the researcher provides clear instructional guidelines to other researchers who want to gain insight into the critical elements of the intervention (cf., theory building and replication) and to educational practitioners who want to implement the intervention in everyday classroom settings (cf., dissemination and implementation).

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## Appendix A: Model text 1

Model text 1

# Welcome in my house!



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Have you ever watched the houses in your street or city? If you did, did you notice that there are a lot of different houses: apartments, villas, bungalows, cottages, ... There are houses of different sizes, colours and shapes. Are you curious to know how my house looks like? In this text, I am going to tell you a bit more about the size of my house, my bedroom and my garden.

My house is big as I live in a three-storey house!

The most cosy spot in my house is definitely my bedroom. There you can find my bed and my computer.

Outside we have a large garden where I often play with my sister.

It does not really matter in what kind of house you live. The most important thing is that you feel at home in your own house.

**Appendix B: Model text 2**

First of all, my house has two storeys. On the ground floor, you can find the entrance, the living room, the kitchen and the storage room. On the first floor, we have three bedrooms (my parents' bedroom, my sisters bedroom and my bedroom) and a bathroom. My house is not small, but it is not a villa. Second, my bedrooms is the nicest place in the entire house. My room is blue and there are posters on the walls. At night, you can find me in my bedroom to finish my homework or to play a computer game. But there is one very special thing in my bedroom: my bunkbed! Now and then I can invite a friend to sleep over in my bunkbed. Furthermore, I have a large garden with a lot of trees and a pond with colourful fishes. During the summer, I often play in the garden with my sister. We play hide-and-seek or we build a camp in the garden. This summer we even build a treehouse and we were allowed to sleep in the treehouse for one night! Finally, my house is big enough, my room is the nicest place in the house and I often play in my big garden.

**Appendix C: Compare and contrast task**

1. What does the writer want to achieve with these texts? What is the **goal** of both texts?

.....

.....

2. Compare both texts. Analyse the <u>content</u> and the <u>structure</u> of both texts.					
 <p><b>Text 1</b></p>			 <p><b>Text 2</b></p>		
<b>CONTENT</b>			<b>CONTENT</b>		
<ul style="list-style-type: none"> <li>• Do you have <b>enough information</b> about the house?</li> </ul>			<ul style="list-style-type: none"> <li>• Do you have <b>enough information</b> about the house?</li> </ul>		
<ul style="list-style-type: none"> <li>• Are there <b>images</b>?</li> </ul>			<ul style="list-style-type: none"> <li>• Are there <b>images</b>?</li> </ul>		
<b>STRUCTURE</b>			<b>STRUCTURE</b>		
<ul style="list-style-type: none"> <li>• Is there a <b>title</b>?</li> </ul>			<ul style="list-style-type: none"> <li>• Is there a <b>title</b>?</li> </ul>		
<ul style="list-style-type: none"> <li>• Is there an <b>introduction</b>?</li> </ul>			<ul style="list-style-type: none"> <li>• Is there an <b>introduction</b>?</li> </ul>		
<ul style="list-style-type: none"> <li>• Is there a <b>middle</b>?</li> </ul>			<ul style="list-style-type: none"> <li>• Is there a <b>middle</b>?</li> </ul>		
<ul style="list-style-type: none"> <li>• Is there a <b>conclusion</b>?</li> </ul>			<ul style="list-style-type: none"> <li>• Is there a <b>conclusion</b>?</li> </ul>		
<ul style="list-style-type: none"> <li>• Are there <b>paragraphs</b>?</li> </ul>			<ul style="list-style-type: none"> <li>• Are there <b>paragraphs</b>?</li> </ul>		

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### Appendix D: Model text 3

#### Welcome in my house!



Have you ever watched the houses in your street or city? If you did, did you notice that there are a lot of different houses: apartments, villas, bungalows, cottages, ... There are houses of different sizes, colours and shapes. Are you curious to know how my house looks like? In this text, I am going to tell you a bit more about the size of my house, my bedroom and my garden.

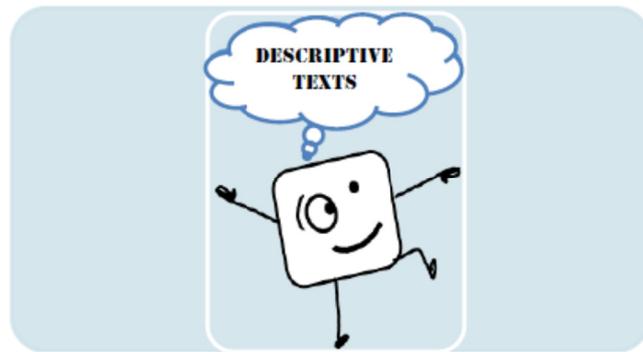
First of all, my house has two storeys. On the ground floor, you can find the entrance, the living room, the kitchen and the storage room. On the first floor, we have three bedrooms (my parents' bedroom, my sisters bedroom and my bedroom) and a bathroom. My house is not small, but it is not a villa.

Second, my bedroom is the nicest place in the entire house. My room is blue and there are posters on the walls. At night, you can find me in my bedroom to finish my homework or to play a computer game. But there is one very special thing in my bedroom: my bunkbed! Now and then I can invite a friend to sleep over in my bunkbed.

Furthermore, I have a large garden with a lot of trees and a pond with colourful fishes. During the summer, I often play in the garden with my sister. We play hide-and-seek or we build a camp in the garden. This summer we even built a treehouse and we were allowed to sleep in the treehouse for one night!

It does not really matter in what kind of house you live. The most important thing is that you feel at home in your own house.

## Appendix E: Memory card



### EXPLAIN SOMETHING TO SOMEONE

1

**GOAL!:** If you want to explain something to someone, you provide information on a certain topic so the reader is able to understand the information related to the topic.

**IMPORTANT!** When you explain something, you do not tell a story!!!

2

**HOW?:**

- **CONTENT:** You provide facts, examples and details about the topic so the reader understands the topic
- **STRUCTURE:** The text consists of 4 large parts:
  - **Title**
  - **Introduction:** The introduction provides information so the reader knows the topic of the text and so the reader has an idea of what the writer is going to write about.
  - **Middle:** The middle describes all important information related to the topic by means of examples, details, ...
  - **Conclusion:** The conclusion summarizes the text or provides a conclusion.

## Appendix F: Planning card and planning scheme



**1 Read the assignment carefully**

- WHAT should I write about?

Write the topic in the planning scheme.

**2 Collect main ideas**

- WHAT do I know about the topic and what do I want to write about this topic? These are your main ideas.

Write your main ideas in the planning scheme.

**3 Add additional information**

- WHAT do I know about each main idea? Think of details and examples. Provide enough information to your reader!

Write the additional information in the planning scheme.

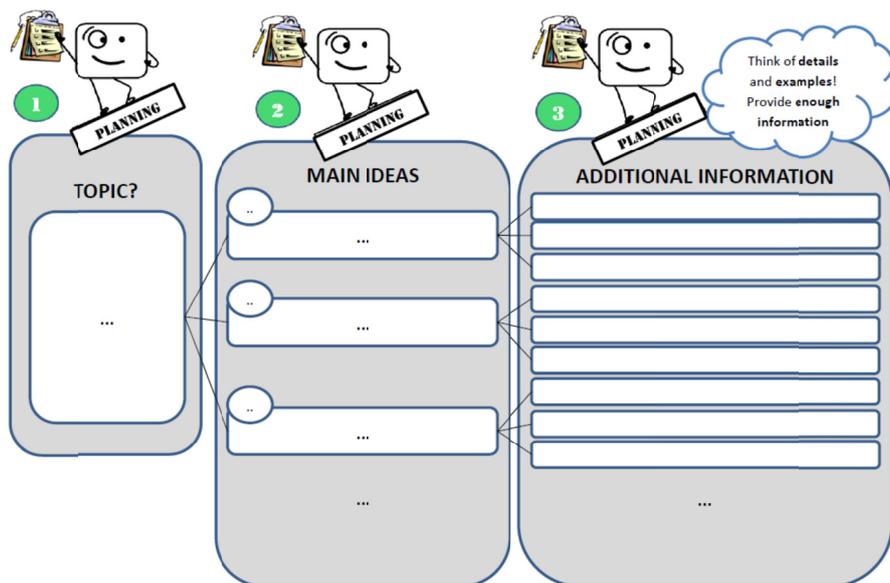
**4 Organise the main ideas**

- WHAT is the order of my main ideas?

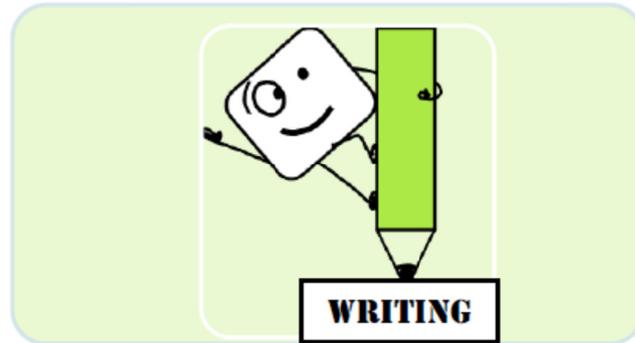
Number each main idea in the planning scheme.

**5 Check your planning scheme**

- Need more information? Write a question mark.



**Appendix G: Writing card**



1 Use the planning scheme to write down your text. The planning scheme helps you with **the structure** and **the content** of your text.

2 Construct your text as follows:

- Title
- Introduction

Alinea 1	Write down the writing topic
	Write down what you are going to tell about this topic. Summarize your <b>main ideas</b>

- Middle

Alinea 2	Write out <b>main idea 1</b> : use the <b>additional information</b>
Alinea 3	Write out <b>main idea 2</b> : use the <b>additional information</b>
Alinea 4	Write out <b>main idea 3</b> : use the <b>additional information</b>
Alinea .	...

- Conclusion

Final alinea	Summarize your text or Provide a <b>conclusion</b>
-----------------	--

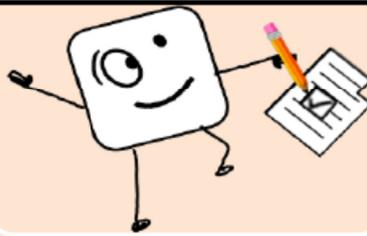


**Keep in mind:**

- Correct spelling and sentence construction
- Use a variation of words

Appendix H: Revision card

**RERead AND CHECK**



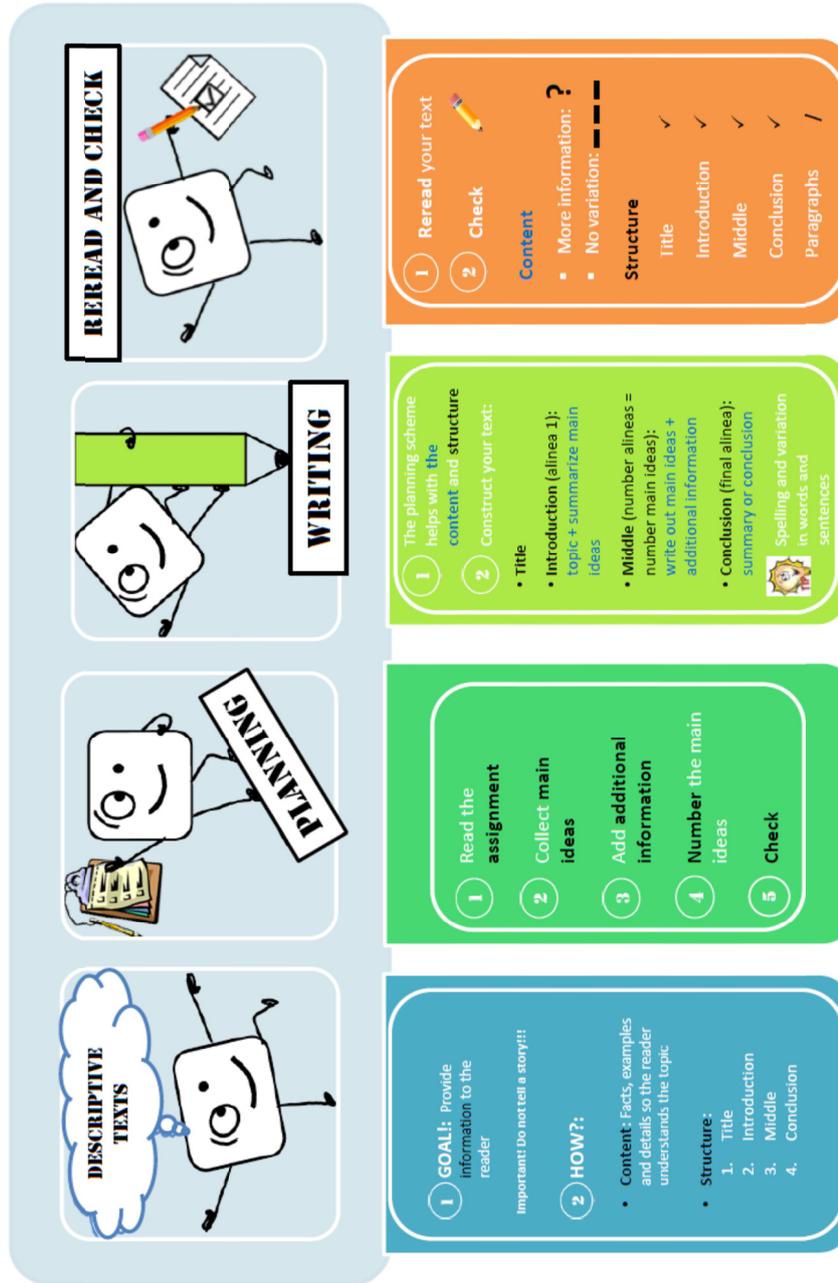
1 **Reread** your text

2 **Check** the **content** and the **structure** of your text as follows:

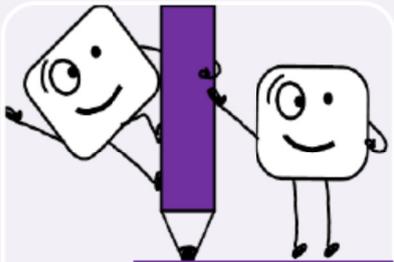
Check:	Mark: 
Where do you need more <b>information</b> ?	?
Where do you see a <b>lack of variation</b> ?	<u>And...</u> <u>And...</u> <u>And...</u>
Does the text have a <b>title</b> ?	✓
Does the text have an <b>introduction</b> ?	✓
Does the text have a <b>middle</b> ?	✓
Does the text have a <b>conclusion</b> ?	✓
Does the text have <b>paragraphs</b> ?	/

3 **Revise** the text

Appendix I: Integration card



## Appendix J: Collaboration card



**WRITING TOGETHER**

### COLLABORATION RULES

Basic principle:  
Writing together = together **responsible!**

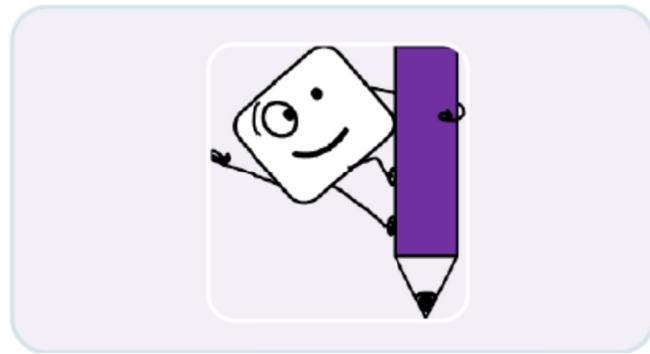
- .....
- .....
- .....
- .....
- .....

Signature

**Appendix K: Role badges**



**Appendix L: Individual writing card**



**INDIVIDUAL AND INDEPENDENT WRITING**

**Some rules!**

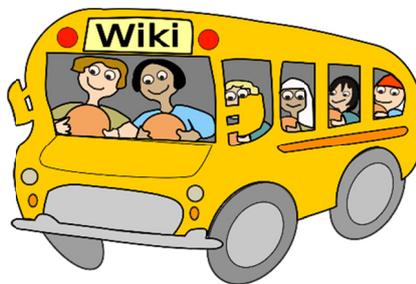
- ① .....
- ② .....
- ③ .....
- ④ .....
- ⑤ .....

Signature

### Appendix M: Modelling the planning and writing strategy

In lesson 3, the teacher modelled the planning strategy based on the writing assignment below. In lesson 4, the teacher modelled the writing strategy based on the planning he/she modelled during lesson 3.

This schoolyear, the headmister/headmistress decided that your class can organise the **school trip**. Explain to the headmister/headmistress which **three activities** you are planning for the school trip.



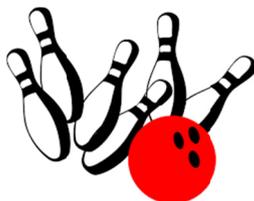
### Appendix N: Writing assignments lesson 3 and lesson 4

In lesson 3 students had to choose between the following writing assignments to plan their text. In lesson 4 students could write the text based on the planning they made in lesson 3.

**CARNAVAL** is approaching! Write a text for the schoolpaper in which you describe **what happens during carnival**.



Today, the lessons finish earlier so we can play a game. You are responsible to explain the rules of the game. Pick one of the games below and explain to your classmates **how you should play the game**.



### Appendix O: Writing assignment lesson 5 and 6

In lesson 5, students had to plan and write a text based on the assignment below. In lesson 6, students had to revise their text.

Today we play 'Who is it'? Pick a classmate and **explain in your text who this classmate is without giving away his/her name**. Do not only consider appearance, but also think about character, hobbies, ...

Can your classmates guess who you are writing about?



### Appendix P: Modelling the revision strategy (lesson 6)

In lesson 6, the teacher modelled the revision strategy based on the writing assignment below.

Previous week there was a burglary in the school. the burglar got away but you saw him running away. Explain to the police how the burglar looked like, what he was holding in his hands, and his escape route.



Read and check this text. The revision card will help you!

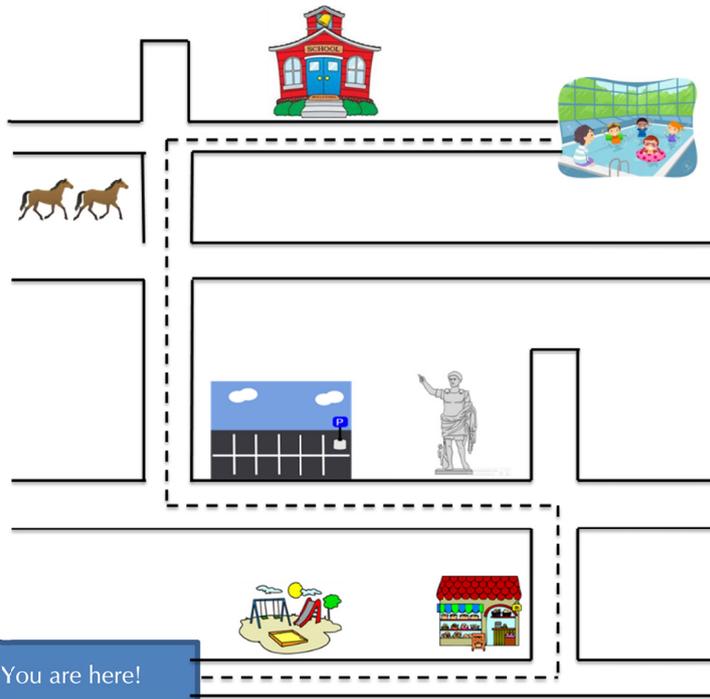
The burglar was wearing a sweater with long sleeves and a dark pants. And he was smoking a cigar and he was almost bald and had a wicked sneer.

In his one hand he was wearing a bag and in his other hand he had a crowbar. He probably used this crowbar to break in. When he saw me, he escaped.

Hopefully I provided you enough information so you can quickly find and arrest him!

### Appendix Q: Writing assignment lesson 7

Somebody asks you to show the way to the swimming pool. Give directions and explain what he/she will see during the walk.  
Read and check this text. The revision card will help you!



The road to the swimming pool

I will explain the route to the swimming pool and tell you what you will see during your walk. First, you walk straight ahead until you reach the bakery. Then you turn of left and walk towards the intersection. Then you turn left again. Then you walk until you see a parking lot. If you passed the parking lot, you turn right. At that moment, you will be halfway.

Now, walk straight ahead. If you approach the next intersection, you cross it. You will see a meadow. At the next intersection, you turn.

You are almost at the end. Keep walking and at the end of the road you will find the swimming pool.

### Appendix R: Guided instruction (lesson 8)

In lesson 8, the teacher and students interactively plan, write, and revise a text based on the writing assignment below.

Good news: it is almost the birthday of the headmaster/headmistress. Your class is responsible for the surprise party! Explain which activities you will organize, what food you will serve and which birthday present you will give. Do not forget to mention the time and place of the party!



**Appendix S: Writing assignment lesson 9**

This weekend you are going on a **camping trip!** Before you pack your suitcase, you read the weather forecast. **Explain to your parents which clothes and objects you will pack for each day.**

**Friday**



Temperature:  
15°C  
Rainfall: 0%  
No wind

**Saturday**



Temperature: 10°C  
Rainfall: 100%  
Windy

**Sunday**



Temperature: 8°C  
Rainfall: 100%  
Stormy

### Appendix T: Writing assignment lesson 10

Imagine you are stuck on a desert island with your best friend. Explain to your friend what you should do to survive on this island.



### Appendix U: Writing assignment lesson 11

Imagine a professor made it possible for you to travel back in time... back to the **Middle Ages**. The images below show what you saw during your time traveling. Explain to the professor **how people lived back then**.

