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Creative writing: Thinking beyond the standard text

Teaching high school students to write original texts

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CHAPTER 4
WRITING ORIGINAL AND CAPTIVATING COMMUNICATIVE TEXTS BY
APPLYING CREATIVE THINKING AND
NARRATIVE TECHNIQUES IN SECONDARY EDUCATION

Abstract. In two studies we tested an instructional design that aimed to stimulate creative thinking in communicative writing, a domain that does not call for creativity by default. The design was based on Schacter et al.'s Creative Teaching Framework (2006) which had proven to be effective for narrative fiction writing in Chapter 3. In the first study we adapted the narrative writing design to communicative writing and tested its feasibility. In a subsequent quasi-experimental effectiveness study, we tested whether the new design improved holistic text quality of the target tasks (communicative texts) and non-target tasks (narrative texts) and affected students' writing behavior. Two different sets of three classes (Grade 10) participated in a pre-posttest design (Study 1) and in a switching replications design (Study 2) ($N = 79$ and 58 , respectively). Both communicative and narrative writing were tested at all measurement occasions. In Study 2, participants recorded their writing activities using a process sheet. Four motivational variables were included as possible moderator variables: Writing Attitude, Creative Self-Concept, and Approach and Avoidance Motivation. The lesson unit aimed to produce original communicative texts, via divergent thinking and narrative techniques. Although students' evaluation of the lessons was fairly positive and they found the lessons creative, we found no effects on the quality of students' communicative and narrative texts. However, analyses showed a significant effect on students' writing behavior: the lesson unit enhanced students' production of narrative texts, even when the lesson unit focused on communicative texts. This may indicate that the communicative lesson unit activated students' narrative writing skills. No moderation effects of Creative Self-Concept, Writing Attitude, and Approach and Avoidance Motivation were observed. The unexpected results provided input for reevaluating the design.

Keywords: creative thinking, writing processes, secondary education, text quality, communicative writing

1 INTRODUCTION

Today's society requires students to leave education as proficient writers. Secondary schools must prepare students for a study and work environment that involves writing far more frequently, for different reasons, and in different genres. Researchers claim that mass writing has surpassed the phenomenon of mass reading (Brandt, 2014; OECD, 2016). According to the OECD (2016), the daily production of written texts at work is now 13% higher in OECD countries than just over a decade ago. Furthermore, the changing nature of writing in recent years, with the rise of digital media, creates new functions and forms of communication.

In the United States only 24% of the students in Grades 8 and 12 are considered 'proficient' in writing (National Center for Education Statistics, 2012) while the National Commission on Writing (2003) labels writing as a neglected

academic subject in schools. These problems with writing education are present in other countries as well (Graham 2019; Graham & Rijlaarsdam, 2016).

The issue, then, is what schools and teachers can do to turn the tide. In an earlier study, we tested an instructional design for teaching writing based on Schacter's Creative Teaching Framework (Schacter et al., 2006), which proved to be effective for writing more original narrative fiction (see Chapter 3; Ten Peze et al., 2023). In the present study, that instructional design was adapted to teach students to write more original and captivating communicative texts.

2 THEORETICAL BACKGROUND

2.1 *Creativity in writing*

Creativity can be defined as 'the ability to produce work that is both novel and appropriate' at the same time (Sternberg & Lubart, 1999, p. 3). Creativity can be taught (Andiliou & Murphy, 2010; Kaufman & Sternberg, 2019; Scott et al., 2004; Stevenson et al., 2014), even to young adults in secondary education (Baer & Garrett, 2010; OECD 2019). Furthermore, instruction in divergent thinking, a crucial component of the creative process, can increase content knowledge and creativity (Baer & Garrett, 2010, p. 6).

Creativity comes in different shapes and sizes. In their Four-C Model of Creativity, Beghetto & Kaufman (2007) distinguish four types of creativity, ranging from creativity that takes place in daily life (little-c creativity) to eminent creativity in big artists (Big C-creativity). Composing written texts at school might be seen as little-c creativity. After all, drafting a text includes generating ideas, discovering, and transforming, and requires a certain amount of creativity (Flower & Hayes, 1977; Hayes, 1989). This generative aspect of drafting conflicts with the rhetorical function of a text (Galbraith and Baaijen, 2019). This tension corresponds with the tension between 'novel' and 'appropriate' in the creativity definition.

The extent to which discovery processes take place depends largely on the task: narrative writing will leave more room for discovery than communicative writing, for two reasons. First, although both fiction and communicative writing require a heuristic search for problem identification, the problem-solving space in fiction writing is larger (Amabile, 1996). A communicative writing task has a rhetorical goal, to communicate a message to a certain audience, which considerably restricts the problem-solving space. Moreover, in school contexts, communicative writing tasks often include additional constraints. The desired text structure is incorporated into the assignment (explain, argue, describe) as are specific learning objectives: introduce a point of view in the introduction, provide

arguments, and refute a counterargument. Even if school tasks set additional requirements for a narrative writing task (e.g., the perspective to be chosen or a story starter), the problem-solving space is relatively large because the fiction writer intrinsically aims to be original, to a certain extent.

Second, in non-fictional written communication, authors and readers share the world represented in the text. In non-fictional writing, the essence for meaning making and sharing is that the author's and addressee's world knowledge overlaps considerably: the natural and human phenomena, and natural systems of causes and effects. In a fictional text, however, authors do not refer to an existing world but create a fictional world instead (Doyle, 1998). A bird in a fiction text can do very bird-unlike things, which usually does not surprise the reader very much. Perhaps this imagining of the fiction world, by the author and the reader, is the crucial feature of narrative fiction writing, which distinguishes narrative fiction from communicative texts.

For clarity reasons, in this paper we will use the term *narrative texts*, to refer to fictional narrative texts, excluding expressive narratives, and the term *communicative texts* to refer to expository and argumentative texts in a functional communicative context.

2.2 *Domain specificity*

In this study, we applied instructional design principles that have proven effective for writing narrative fiction (see Chapter 3; Ten Peze et al., 2023), in another domain: original and captivating non-fiction communicative texts. As domain specificity is crucial, this placed additional demands on the re-design. The better the learning tasks align with the requirements for the target task, the greater the chance for success.

In their meta-analysis of 70 intervention studies, Scott et al. (2004) commented on effective creativity instruction and concluded that creativity training can lead to improved performance, provided the instructional design meets two requirements. First, the training must focus '... on development of cognitive skills and the heuristics involved in skill application, using realistic exercises appropriate to the domain at hand' (p. 361). Second, the creative training and task performance must occur in the same domain. Hargrove & Nietfeld (2015) recommended examining a domain-specific and contextualized approach for further research (p. 312), despite the fact that they showed that a general, domain-independent metacognitive instruction could enhance students' creative problem solving. Furthermore, according to Baer (2016), creativity training could work

successfully, but only in the domain in which the training occurs: 'Like expertise, and like creativity, higher level thinking skills are very domain specific' (p. 16).

Outcomes were even better when the training focused not only on the domain but on a specific task (Baer, 1996, 2016; Barbot et al., 2011). Baer (1996) examined whether instruction in divergent thinking activities focused on poetry-writing creativity led to better poems and better stories. He found that middle school students in the experimental group did indeed write more creative poems, but not more creative stories than the control group, even though both poetry and story writing belong to the domain of fiction writing. Likewise, Dow & Mayer (2004) taught students how to solve verbal, spatial, and/or mathematical insight problems. They found that the spatially trained group outperformed the other groups on spatial but not on the other types of insight problems and concluded that transfer does not occur if the training is not clearly targeted at the task. These findings were in line with theories on the transfer of cognitive skills (Billing, 2007; Singley & Anderson, 1989).

In conclusion, as the current study aimed to improve originality in communicative writing, the creative training had to focus on communicative texts, of a certain type: e.g., the training and target tasks had to be aligned.

2.3 *Creative thinking for communicative writing*

The objective of this study's learning unit was to teach 10th grade students how to write *captivating* and *original* communicative texts. We chose to focus on short newspaper articles, to which students wrote a response from the perspective of a journalist or a reader responding to an article, as these were relatively frequently occurring tasks in Dutch textbooks.

A major distinction we had to consider during the redesign, was the different role of creative thinking during the writing process. When writing narrative fiction, generating original ideas is almost intrinsic to the process, but for communicative writing, creativity must be set as an extra goal. Creative thinking is essential for the narrative writing process because it is a useful and appropriate strategy for generating content about a world that may be crazy, new, absurd, etc. Communicative texts, however, always refer to the writers' and readers' communal world knowledge. The Eiffel Tower is not the Tower of Pisa, and a nurse is not a purple alien with extendable ears. So, for communicative texts, originality revolves more around deviations in thought patterns: presenting original ideas, taking surprising perspectives on issues, making specific observations, using divergent text structures, and including unique wordings.

An unusual description of a deserted Amsterdam during the corona pandemic will catch the reader's attention, because it is unexpected, engaging, and stimulates one's imagination. The text's originality can be enhanced by the sequence of elements viewed and heard, the observer's chosen perspective, attention to detail (more birds in the square than usual, a windblown rubbish bag), and style (metaphors for silence and emptiness). Writing based on such techniques is not required in textbooks, which do not include originality as a goal; instead, communication of the referential or persuasive message is the main focus. Therefore, in the adapted instructional design, we sought to promote the idea that communicative texts can be original and captivating via divergent thinking and narrative techniques.

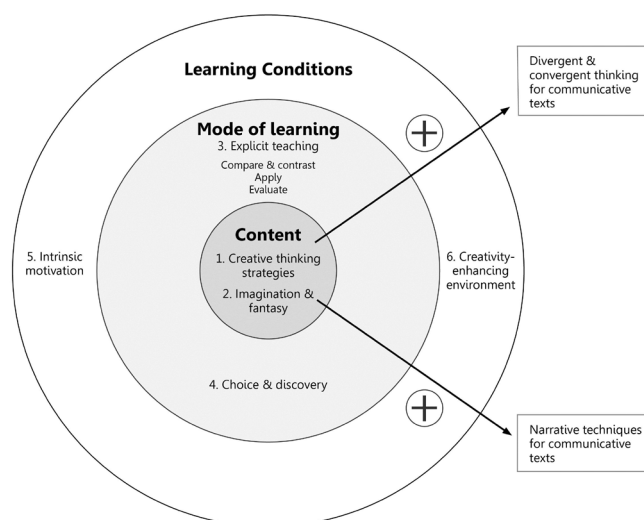
In the next section, we present how we adapted the original design to make it suitable for communicative writing.

2.3.1 Design principles: Schacter's creative teaching framework

The original set of design principles and learning conditions, applied to narrative writing, was based on Schacter et al.'s (2006) *creative teaching framework*, which included five areas from the literature that increased the likelihood of creative outcomes: 1. teaching creative thinking strategies, 2. opportunities for choice and discovery, 3. intrinsic motivation, 4. a learning environment conducive to creativity, and 5. opportunities for imagination and fantasy (p. 48). For these five areas, Schacter et al. formulated nineteen *creative teaching behaviors*, three to six for each area. They observed forty-eight teachers and found that creativity-supportive teaching improved student outcomes, although few teachers used this type of teaching. We reformulated Schacter et al.'s five areas into design principles that comprised all nineteen underlying teaching behaviors. In addition, we elevated one of these behaviors, explicit teaching, to a sixth principle as it seems crucial. Finally, we restructured the six principles in a nested structure, as shown in Figure 4.1 (see Chapter 3; Ten Peze et al., 2023).

In adapting this design for communicative writing, the two principles for condition and mode of learning remained unchanged. But as the content shifted from narrative texts to original and captivating communicative texts, we had to revise the two *content* principles. The two pluses in Figure 4.1 represent these revisions. We focused divergent thinking on *communicative texts* and added *narrative techniques for communicative writing*. Each of the principles is described in more detail below.

Figure 4.1 The design principles and adjustments for communicative texts



Content principles: Teach (1) creative thinking strategies and (2) imagination & fantasy.

During school writing classes, students can learn how to think creatively and how to process their generated ideas into an original text (Baer, 1996; see Chapter 3, Ten Peze et al., 2023). To do so, they need to acquire *creative thinking strategies*. For the design on narrative writing, we focused on the alternation between convergent and divergent thinking (Forthman et al., 2016; Lubart, 2009). Task-focused divergent thinking exercises stimulate the generation of original content and perspectives, from which the most original ideas should be chosen that best fit the target task's originality criterion. We chose to apply the cyclical Geneplore model (Finke et al., 1992), the alternation of divergent and convergent thinking, as it is applicable in various stages of the writing process. In the previous design, all divergent thinking focused on generating ideas for narrative texts. For the current design, we selected three content generation strategies that relied on divergent-convergent thinking for communicative writing: mind mapping, combining ideas/words and generating many ideas.

Schacter et al. (2006, p. 57) stated that teachers should provide opportunities for *imagination and fantasy* by offering learning activities that require students to use their imagination and, ideally, apply them to real-world situations and

problems. Communicative texts become more original when narrative techniques are used to stimulate readers' imagination. Journalistic techniques, such as 'show don't tell' and using all of one's senses to describe a situation or event, are known to stimulate readers' imagination. Therefore, we selected three narrative techniques to instruct and stimulate readers' imagination: show don't tell, write with one's senses, and use metaphors (see Appendix J).

Mode of learning principles: Teach (3) explicitly and (4) provide choice & discovery.

Thinking strategies must be taught *explicitly* (Schacter et al., 2006). We based the strategy instructions in all lessons on two of Merrill's First Principles: demonstration and application (Merrill, 2002). For demonstration, students *compared and contrasted* examples of communicative texts and of writing processes, for instance, by comparing videos of peer-models using a strategy to create a mind map more or less successfully. Merrill's *application* phase took shape in the form of a 15-20-minute writing session during each lesson focused on a specific element of communicative writing (lessons 2-5). Finally, students *evaluated* each other's texts by sharing them in small groups and providing written or oral feedback.

To make students aware that they were alternating between divergent and convergent thinking, we explicitly indicated these thinking activities using icons in the students' material and in the teacher's slide presentations.

The principle 'Providing opportunities for *choice and discovery*', required providing open-ended tasks, which created room for students to choose their approach to execute the task. In addition, we offered several different texts for students to respond to or revise.

Learning condition principles: Aim to establish and maintain (5) intrinsic motivation & (6) a creativity-enhancing environment.

To encourage students' *intrinsic motivation*, we emphasized the learnability of creative thinking skills, and the fact that these skills are useful and valuable not only for the handful of talented and unique students, but for all students. The desire and ability to evaluate and share your own work with others contributes to an atmosphere in the classroom that encourages creativity (Cropley, 1995). To establish a *creativity-enhancing environment* we chose to create a writers-readers community, in which all written texts were read and discussed in small groups and feedback was shared (Graham, 2018). To stimulate students' attitude towards writing, all assignments had to be open-ended, to maximize options for students to use their imagination (see Appendix K). In addition, during each lesson, students were encouraged to think creatively and freely, and all serious

contributions were appreciated. In the method section, we discuss the content of the lessons in more detail.

2.4 *Students' characteristics*

The instruction aimed to stimulate creative thinking in a domain that does not call for creativity by default. Whether and to which extent this effect occurs, depends on students' personal characteristics. Higher levels of creative self-belief (see Chapter 2; Ten Peze et al., 2021) or a stronger approach tendency might well facilitate the application of creative thinking in communicative writing tasks (Roskes et al., 2013).

Recent research showed that self-beliefs (Beghetto & Karwowski, 2017) and emotional factors play a key role in creative performance (Gu et al., 2018; Soroa et al., 2015). In their dual pathway model, De Dreu et al. (2008) account for the influence of personal factors on creativity. We will therefore include these learner variables in the current study.

2.4.1 Creative self-belief

Beghetto & Karwowski (2017) distinguish three creative self-beliefs: e.g., creative self-efficacy (CSE), creative metacognition (CMC), and creative self-concept (CSC). Despite the body of research on the topic, the effect of creative self-beliefs on performance remains unclear. Possible reasons are the wealth of definitions and measures available (Beghetto & Karwowski, 2017) or the lack of domain specificity in the measurements used (Pretz & Nelson, 2017). However, Qian et al. (2019) suggested that domain specificity is not relevant to *little c* creativity, the type of creativity that plays a role in educational practice. They proposed that creativity becomes gradually more domain specific when people become more experienced, up to the level of Pro-C creativity, at which point domain specificity would play a greater role (Qian et al., 2019). Indeed, Ten Peze et al. (Chapter 2, 2021) reported a significant relation between Creative Self-Concept and writing fluency and text quality in students of about 15 years old, where *little c* might play a role.

2.4.2 Approach & avoidance motivation

De Dreu et al. (2008) proposed two pathways to creativity: one via flexibility and one via persistence. Which pathway is activated in a person depends on the task and two personal factors: the situational state – mood and motivation – and the person's traits, such as aversion against ill-structured situations. For the first

pathway, flexibility, Baas et al. (2011) found that approach motivation activated creativity through flexibility, via divergent thinking. For writing, Ten Peze et al. (see Chapter 2, 2021), found support for this pathway when they observed a positive correlation between an affective attitude to writing ('Writing is fun') and text quality, which might be seen as a situational, domain specific state of an approach temperament.

The second pathway to creativity is following a persistence pathway, via systematic, persistent, and analytical thinking, induced by avoidance tendencies. Research by Roskes et al. (2013) has shown that time pressure has negative effects on performance mainly when individuals have an avoidance orientation instead of an approach orientation. In the present study, we induced time pressure for practical reasons – there is always some degree of time pressure during a one-hour writing class –but also to speed up students' writing process, as writing speed is positively related to text quality (see Chapter 3; Ten Peze et al., 2023). Therefore, we expect that students with an approach orientation are likely to be able to think creatively more easily during our training than students with an avoidance orientation.

3 RESEARCH QUESTIONS

Despite the recognition of the need to improve students' writing skills, the effect of applying creative instruction to communicative texts has not yet been investigated. Creative instruction has been proven effective for narrative writing and was, at the same time, as effective as a traditional writing course regarding the quality of non-instructed communicative texts. Therefore, we expected that a creative instructional unit targeting communicative texts, would improve both students' instructed communicative and non-instructed narrative writing.

In two studies, we tested an instructional design aimed at stimulating creative thinking in communicative writing, a domain that does not naturally call for creativity. In Study 1, we adapted the narrative writing design to communicative writing and tested its feasibility. In a subsequent quasi-experimental effectiveness study (Study 2), we tested whether the new design improved the holistic text quality of the target tasks (communicative texts) and non-target tasks (narrative texts) and affected students' writing behavior.

Our research questions were:

RQ1. Do students appreciate the key features of the creative instructional unit?

RQ2. Does an instructional unit that induces a creative thinking strategy for communicative texts and includes narrative writing techniques improve Writing Behavior, in terms of Text Production, and Text Quality for target (communicative) and non-target (narrative) texts?

RQ3. Do students' characteristics moderate the unit's effectiveness?

These research questions all apply to both Study 1 and Study 2, except for the question on the influence of the unit on Writing Behavior, which was only investigated in Study 2. For RQ1, which focused on design quality, we expected participants to recognize and appreciate the key learning activities and to appreciate key features of the creative instructional design. RQ1 was meant to test whether the adaptation of the unit from narrative writing to communicative writing would be recognized as a creative, innovative instructional unit.

Furthermore, we expected that the experimental condition would outperform the control condition in text quality for the target text type, communicative writing (RQ2), and that the experimental condition would also positively affect the quality of the uninstructed narrative texts (non-target text type), as both distinctive learning contents – divergent thinking and narrative techniques – also apply to narrative writing. More specifically, we expected that the narrative writing task would activate divergent thinking, which would likely affect text quality in terms of originality.

Since we found an effect of writing speed on both communicative and narrative texts in a previous study (see Chapter 2; Ten Peze et al., 2021), we also expected an effect on Text Production. Moreover, the generative process interacts with the associative text production process (Galbraith & Baaijen, 2018). If students are taught the divergent thinking process, the text production process will be accelerated. Our expectation was reinforced by the fact that the experimental condition aimed to speed up the writing process through fast divergent thinking and time constraints (see Chapter 3; Ten Peze et al., 2023).

As for RQ3, this study will provide more insight into the influence of several student characteristics: Approach and Avoidance Motivation, of Creative Self-Concept, and Writing Attitude. While the instructional unit aimed at increasing Text Production and flexibility, we expected that the course would probably be more effective for learners who scored high on Approach Motivation, and Writing Attitude, and are more likely to follow the first, flexible pathway and less for those who scored high on Avoidance Motivation and are likely to follow the second, persistence path (De Dreu et al., 2008). Although in other research the role of Self-Concept is inconsistent (Beghetto & Karwowski, 2017; Pretz & Nelson, 2017), we expected Self-Concept to moderate the effect of the experimental

condition. After all, our previous study showed that students who saw themselves as creative wrote both better communicative and narrative texts (see Chapter 3; Ten Peze et al., 2023).

To examine the effect of a creative instructional design we set up a design feasibility study with a pretest-posttest design (Study 1) and a subsequent quasi-experimental effectiveness study (Study 2) with a switching replications design (Shadish et al., 2002, p. 146-147). Different sets of three intact classes participated in the studies. The first author participated as teacher in both studies; the second teacher differed for studies 1 and 2.

4 METHOD STUDY 1

4.1 *Participants*

Eighty-eight 10th grade pre-university students from one secondary school in the Netherlands participated in the study (15-16 years, $M = 15.53$, $SD = .58$). We did not select students because we involved all 10th-grade classes. Seventy-nine students gave active consent for their participation in the study and their parents gave passive consent.

4.2 *The lesson unit*

The structure of the original lesson unit (see Chapter 3; Ten Peze et al., 2023) was kept intact. The unit included three blocks: (1) a metacognitive introduction block of one session on creativity, followed (2) by a block of four instruction sessions, each of which introduced another aspect which could help students write more original texts and which they then put into practice, and concluded (3) with a block of one application session in which students were invited to apply everything they had learnt while writing a complete text. All materials were compiled in a student workbook, in which students wrote their texts by hand during every writing class. The workbook was accompanied by a teachers' guide and slide shows.

4.2.1 Block 1: Metacognitive session

This session was replicated almost entirely from the former design on narrative writing. The aim was that students became aware of the importance attached to creativity and gained insight into their own and others' creative processes. Students did not write anything themselves, but explored ideas and creative thinking strategies, by focusing on the nature of creativity, on the fact that creativity

combines originality and appropriateness, on the difference between divergent and convergent thinking, and the different notions of creativity: from mini-c to Big-C (see Chapter 3; Ten Peze et al., 2023). To enhance understanding of text creativity, we added one important lesson component: students reviewed narrative texts written by peers during a previous investigation and discussed them with their group and in class. To conclude the lesson students performed a divergent thinking task in the form of a game and assessed the originality of each other's ideas.

4.2.2 Block 2: Instruction

We replicated the key learning activities for each lesson from the former design but adjusted the learning content to communicative writing. The key learning activities were: 1. compare and contrast example texts or writing processes, 2. generate original ideas through divergent thinking, 3. select ideas from step 2 by convergent thinking, 4. apply the new knowledge by writing a text, followed by 5. evaluation. All activities were aligned to the lesson's target task: writing an original communicative text. The writing tasks were all aimed to be short, authentic, novel, and exciting (Beghetto & Kaufman, 2014; Davies, 2013). The tasks were authentic since students revised or rewrote excerpts from recent newspaper articles, responded to an article in the newspaper or wrote an Instagram text for a youth newspaper. Moreover, we interpreted authenticity as writing for an authentic audience: texts were written and shared with classmates. For each task, students practiced a new element of communicative writing to focus on, such as generating and writing a captivating opening paragraph or generating and producing written content by using the various senses.

In line with the previous study, we operationalized 'exciting' as writing under creative constraints. However, there was a difference: narrative writing concerned solving problems in the fiction world (Doyle, 1998), while the current study focused on generating captivating ideas for communicative texts. Both studies, however, involved working under time pressure.

4.2.3 Block 3: Application

Students were given 30 minutes to apply what they had learnt during the unit. They could choose to respond to one of three newspaper articles they were given about visible armpit hair, parents posting unsolicited photos of their children online, and plastic soup (marine pollution). After 30 minutes of writing, students exchanged their texts in a group of four. On the table were cards with the

narrative techniques they had learned: writing with senses, a captivating beginning, and the use of metaphors. Each student provided each text they had read with a suggestion to improve the text using one of the cards and a brief explanation. So, each writer received their text back with three cards with possible techniques for improving their text. Students subsequently wrote their final versions using the feedback. The final texts could be submitted to the newspaper for consideration if students wanted.

4.3 Measures

We collected data for one dependent variable: 1) Text Quality, and four learner variables 2) Creative Self-Concept, 3) Writing Attitude, and 4) Approach and 5) Avoidance Motivation. For Fidelity, we collected information about Students' Appreciation of the unit, and their Participation during classes (see Table 4.1).

Table 4.1 Overview of the instruments: variables, measures, and source

Variables	Measures	Source
Holistic Text Quality	Text scale, 3 raters a text	Author designed
Creative Self-Concept	Questionnaire	Stubbé et al. (2015)
Writing Attitude	Questionnaire	Rijlaarsdam (1986)
Approach/Avoidance Motivation	Questionnaire	Elliot & Thrash (2010)
<i>Fidelity</i>		
Students' Appreciation	Questionnaire	Author designed
Degree of Participation	Task completion	Workbooks

4.3.1 Writing tasks

Students wrote a communicative and a narrative text at each measurement occasion. The tasks were administered in balanced order and pre-assigned randomly to the participants within classes. We included four tasks. The two communicative tasks were argumentative tasks as secondary school students are most familiar with argumentative tasks for communicative writing in our curriculum (Meestringa & Ravesloot, 2014). Each task required approximately 20 minutes of writing. For the narrative writing tasks, students were provided with a story prompt and had to continue and finish the story themselves. These prompts worked well in earlier research (see Chapter 3; Ten Peze et al., 2023) and were both fairy tale-like: a young princess who wakes up in the morning and

does not recognize herself in the mirror, and a young adventurer who goes in search of adventures.

The communicative tasks had a similar structure: a brief explanation and the assignment, followed by a newspaper article which students had to respond to in a letter to the editor. Topics included game addiction, and privacy rights for children at school. Both tasks were also used during a previous study (see Chapter 3; Ten Peze et al., 2023). Appendix K provides an example of a narrative and a communicative task.

4.3.2 Creative self-concept, writing attitude, and approach and avoidance motivation

The Self-Concept questionnaire was designed and tested by Stubbé et al. (2015) for use in secondary education. The 44 items represent a construct matrix with seven constructs: inquisitiveness, imaginativeness, focus on output, pride in own work, dare to be different, persistence, and collaborativeness. A 7-point Likert scale was used to indicate students' perception of their creative competencies (1 = does not apply to me, 7 = completely applies to me). Reliability was high ($\alpha = .90$).

The Writing Attitude questionnaire consisted of six items, which were dispersed in a longer questionnaire on writing apprehension. All thirty-one items were statements, accompanied by a 5-point Likert scale (e.g., 1 = strongly agree, 5 = strongly disagree). Reliability for the six target items was high ($\alpha = .88$).

Approach and Avoidance Motivation were measured by rating to what extent participants agreed with twelve statements (e.g., 'When it looks like something bad could happen, I have a strong urge to escape,' 'It does not take a lot to get me excited and motivated,' Elliot & Thrash, 2010; Roskes et al., 2013). The statements were accompanied by a 7-point Likert scale (e.g., 1 = strongly disagree, 7 = strongly agree). Both scales were reliable (Approach Motivation, $\alpha = .82$; Avoidance Motivation, $\alpha = .84$) and did not correlate ($r = .16$, $p = .115$).

4.3.3 Fidelity

Student workbooks

We examined the extent to which students participated in the lessons by checking their workbooks. Students all participated in the metacognitive lesson and corresponding divergent thinking exercise and wrote a final text during the last lesson. During lessons 2 through 5, they all wrote their assignments in their workbooks. For those lessons, we defined two assignments as essential for the

successful completion of the lesson, one divergent thinking task and one writing task, and checked whether these tasks were accomplished by all participants.

Appreciation of the lessons

We checked the fidelity of the instructional design's implementation with a student questionnaire. It consisted of five components (see Table 4.2) with all items rated on a five-point scale, from 1 = *strongly disagree* to 5 = *strongly agree*.

Table 4.2 Overview of student evaluation questionnaire components including number of items (#) and example items

Object	Component	#	Example
Whole unit	Perceived qualities	12	I found the writing unit meaningful.
Learning Activities	Evaluation: key learning activities per lesson	24	Four indicators per activity: meaningful, difficult, pleasant, inspiring. Example: I found sharing stories in a group meaningful.
Social Climate	Social Climate	6	During the lessons there was a pleasant, respectful atmosphere in the classroom.
Text Choice	Quality of the chosen texts for the writing tasks	1	I found the texts chosen for the lesson unit (very weak-very strong).
Outcome	Experienced change in writing communicative texts	1	To what extent do you think you can write a more creative or attractive communicative text after completing the lesson unit, than you could before?

We added four open questions at the end of the questionnaire: (1) to explain the experienced change, to list (2) positive features of the unit and (3) features that should be changed, and (4) to provide students with the opportunity to share other remarks.

With the first component, Perceived Qualities (whole unit; lesson 1), we solicited cognitive (meaningfulness, usefulness, difficulty) and affective (fun, interestingness) responses to the unit. The component Evaluation of Key Features (lessons 1-6) asked for evaluations of distinctive design decisions per lesson (content – learning about the use of metaphors, and mode – learning by observation, compare and contrast). To evaluate the design in terms of safe learning conditions, questions about the classroom climate were included about the general classroom atmosphere, worries about making errors and being evaluated in class. One question asked about the text choice/topics for the tasks, and about

the outcome as experienced, in the form of a retrospective pretest question: 'To what extent do you think that you can now write more creative or attractive communicative texts than you did before the lessons'?

4.4 *Procedures*

4.4.1 Implementation

All three tenth-grade classes in this school participated in the design study. The lessons were taught from mid-May till mid-June. During both measurement occasions students wrote an argumentative and a narrative text in Word on their own computers. Before the pretest we collected data about the four learner variables Writing Attitude, Creative Self-Concept, and Approach and Avoidance Motivation. After the post-test students filled in a questionnaire to evaluate the lessons.

4.4.2 Text quality

The texts written during Study 1 and Study 2 were assessed simultaneously. To assess Text Quality, we constructed a rating instrument that consisted of a rating scale for a holistic text quality score, and five benchmark texts of different quality, indicating five points on the scale (70 – 85 – 100 – 115 – 130), with each text annotated for six qualities, based on Fürst et al. (2017). The five benchmark texts formed a continuous scale, with a minimum (0) but no maximum score. Holistic scores, guided by a set of benchmark texts, are recommended to increase the assessment's reliability (Pollitt, 2012), and have proven effective in writing research (Bouwer et al., 2016; Van Ockenburg et al., 2021).

We chose the five benchmark examples for the narrative and communicative scales from texts that were written by students in a previous study (see Chapter 3; Ten Peze et al., 2023). To annotate the benchmark texts, we adapted a scheme from Fürst et al. (2017). This scheme consisted of six items representing two dimensions: Originality (items: originality, surprise, aesthetic, and creativity) and Quality (items: coherence, quality, creativity, and aesthetic) (Fürst et al., 2017, p. 208). We used these items in a previous study (see Chapter 3; Ten Peze et al., 2023). Each explanation consisted of three characteristics, in which we consistently combined two items from Fürst et al.'s system. For the narrative scale, these characteristics were: 1. *Text* on coherence and quality 2. *Plot* on originality and surprise, and 3. *Artistic value* on aesthetic value and creativity. Artistic value was mainly interpreted in terms of formulation: to what extent is the text special or beautiful in terms of language, while creativity was operationalized as: the text

is thought provoking and does more than simply tell a story. For the communicative rating scale, we also created three corresponding characteristics: 1. *Text* on coherence and quality, 2. *Argumentation*, on originality and surprise, which described the originality and validity of the argumentation and the extent to which the argumentation was surprising/special, and 3. *Persuasiveness & style* on the persuasiveness of the text, the way it was formulated and the extent to which it was thought provoking.

For the narrative rating scale, we used a short story about a young princess, who wakes up in the morning and does not recognize herself in the mirror. For the communicative scale, we used a task in which students responded to a newspaper article about privacy rights for children at school. Appendix L provides an example of a narrative rating scale and an example of a communicative rating scale.

Raters were experienced secondary teachers of Dutch language and literature or researchers familiar with secondary students' writing ($N = 37$). We provided each rater with a written instruction with 1. the texts to be assessed, including the assignment students were given, 2. the annotated benchmark text scale, and 3. an explanation of the assessment criteria. Each rater rated a portion of 50-60 narrative or communicative texts. For each task, we created overlapping rater teams of three raters per text (Van den Bergh & Eiting, 1989). Jury reliability was calculated using Cronbach's alpha, which was .71 for Communicative and .73 for Narrative texts, and which depended on the task (Narrative ranged from .66 to .80, Communicative from .62 to .86). We calculated mean scores based on three raters.

4.4.3 Creative self-concept, writing attitude, and approach and avoidance motivation

Questionnaires were administered before the start of the lesson unit. Students who did not complete the questionnaires due to absence or other causes, completed the questionnaires during the intervention.

4.5 *Data analysis*

4.5.1 Effects on text quality and moderation

We checked whether the writing tasks within each of the text types were equally difficult by comparing the Text Quality scores for the two tasks within each task type at the first uninstructed measurement occasion. Scores did not differ

between tasks (Communicative $F(1, 60) = 0.002, p = .964$; Narrative $F(1, 56) = .137, p = .713$).

Mixed models were used to analyze the data, because the design included two measurements (pre- and posttest) per text type (Communicative and Narrative), nested in individual students, who were nested in intact classes. We compared the fit of a series of nested models, for Communicative and Narrative tasks separately. Pre- and posttest scores were included as repeated measures, allowing differences in variation ('unstructured'). We started with a model with the effect of measurement occasion as factor, and participants in classes as random factor: the results of this model indicate the pretest-posttest effect. Subsequently, we added a factor and an interaction: the effect of one of the learner characteristics (centered; Model 2), and the interactions between this learner variable with Measurement Occasion (Model 3). We tested these models for Global Text Quality and ran these models for the four learner variables involved (see Appendix M).

4.5.2 Fidelity

Student workbooks

Analysis of students' workbooks revealed that 90% of students completed all divergent thinking assignments (total = 104) and 63% completed all writing assignments (total = 104).

Students' appreciation of the lessons

We calculated means and standard errors for all items per cluster, as an indication of students' feedback on the instructional design. We will focus on whether students' scores indicate a sufficient level of perceived usefulness. The boundary score was set at 3 (neutral), plus and minus two standard errors ($2*SE$). For positive statements ('meaningfulness'), the design is considered to be successful when the mean score is higher than $3+2*SE$, while for negative statements ('this unit was boring'), scores higher than $3+2*SE$ would indicate a problem.

4.6 Results

4.6.1 RQ1. Appreciation of the instructional unit

Perceived qualities of the lesson series

Figure 4.2 presents the mean scores for the appreciation of the lesson series. If we apply a boundary of two times the standard error (mean $SE = .12$) to assess whether students appreciated the design, four items scored neutral: Meaningful,

Pleasant, Annoying, Interesting, five scored positive (Creative, Innovative, Good, Clear, Original), indicating a positive reception of the design, and one negative (Boring), indicating a design issue. Overall, participants did not experience the unit as difficult or confusing.

Figure 4.2 Appreciation of the lesson unit: Mean scores ($SE = .12$)

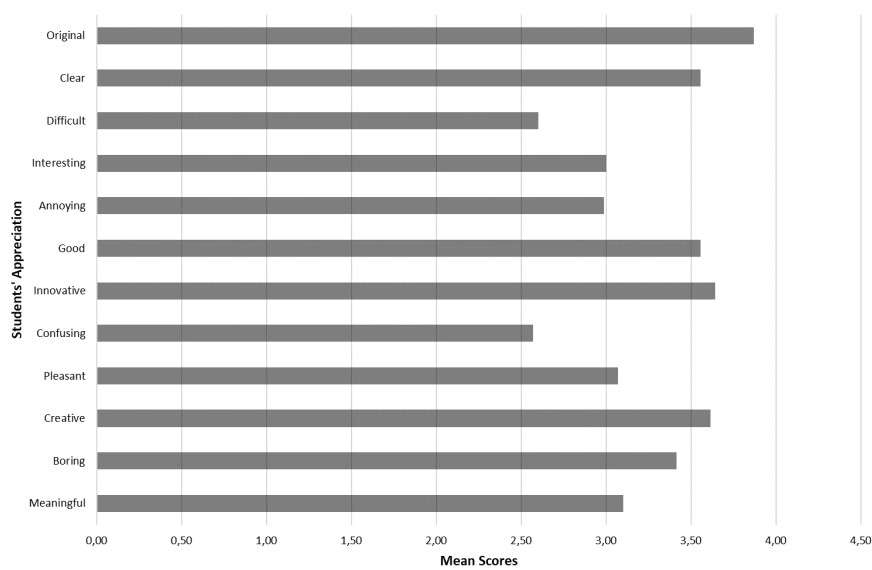
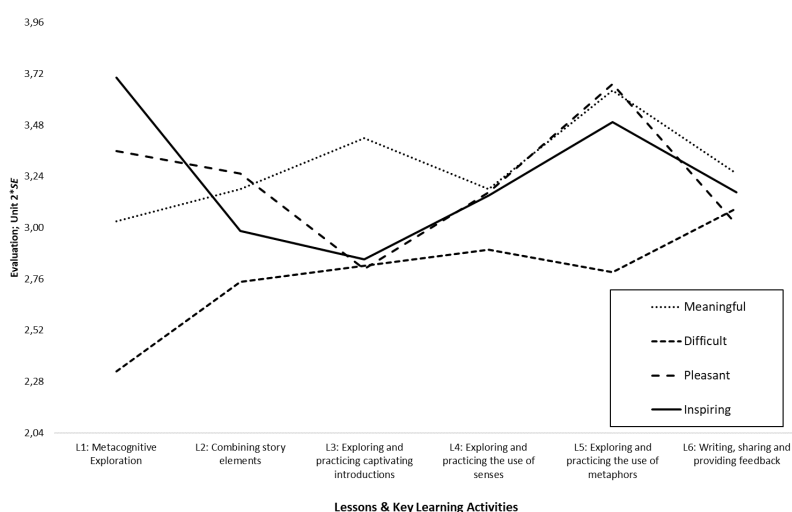


Figure 4.3 presents students' appreciation for the key element per lesson. None of the lessons appeared to be too difficult. When we focus on the three remaining aspects per key learning activity that score significantly above or below the neutral score of 3 (plus or minus 2×0.12), the following pattern emerges. Students found the first lesson, which focused on setting the task representation, on metacognition on creativity and the development of creativity, pleasant and the most inspiring of all lessons. The second lesson, on creating stories by forced combination of unusual elements, was considered highly pleasant as well, and neutral in other respects. Students found Lesson 3, on creating captivating introductions in communicative texts, rather meaningful. Lesson 4 scored neutral on all three aspects, but students found lesson 5 very meaningful, pleasant, and inspiring. The last lesson, a typical writing practice lesson with writing and sharing texts and providing feedback, scored neutral on all aspects.

Figure 4.3 Appreciation of the key learning activities in six lessons



Conditions: Social climate

All six items on classroom climate scored above neutral, ranging from 3.63 (two items: sharing tasks in class) to 3.94 (share tasks with peers in groups; participating in activities in general).

Perceived change as outcome

Participants scored their changes in writing communicative texts as neutral ($M = 2.88$), with equal shares in the negative (25%) and positive (23%) ranges. Via regression analyses we explored the perceptions of lesson qualities that predict the perceived outcome. From the twelve general perceptions, the scores on Creative and Difficulty contributed to the prediction ($F(3, 63) = 18.68, p < .001$). Of the 24 responses to key learning activities, the more positive the response was on meaningfulness of lessons 3 and 4, the more positive the perceived outcome was ($F(2, 61) = 14.25, p < .001$). From the items about social climate, one predicted Change as Outcome: participating in the lessons ($F(1, 65) = 15.48, p < .001$).

4.6.2 RQ2. Effects on text quality

Text quality

Appendix M shows the comparison for the models for Communicative and Narrative Text Quality. No interaction with one of the learner characteristics was observed (Model 3) and no effect of the intervention (Communicative Texts; M

= 89.91, (*SE* = 4.43) vs $M_2 = 91.75$ (*SE* = 4.44)), Narrative Texts ($M_1 = 93.40$ (*SE* = 4.62) versus $M_2 = 94.27$ (*SE* = 5.20)).

4.6.3 RQ3. Moderator effects: Creative Self-Concept, writing attitude, and approach and avoidance motivation

Of the four learner variables, only Writing Attitude influenced Text Quality positively. Writing Attitude explained Text Quality for Narrative as well as Communicative Texts (Model 2). The effects are in the expected direction: the higher the scores on Writing Attitude, the higher the scores on Text Quality (Communicative $\beta = 6.63$, *SE* = 2.78, $t(25.93) = 2.30$, $p = .03$; Narrative $\beta = 9.69$, *SE* = 4.50, $t(27.29) = 2.51$, $p = .04$).

5 METHOD STUDY 2

5.1 *Participants*

Sixty-three students from the same secondary school in the Netherlands ($M = 14.94$, *SD* = 0.41) participated in the experiment. All three tenth-grade classes participated. Fifty-eight students gave active consent for their participation in the study, including parents' passive consent. Since the lessons were part of the regular program and school schedule, we had to assign intact classes to the two sequences of the conditions in this study: Experimental then Control (EC) and Control then Experimental (CE). The number of participants per group varied due to the uneven number of classes available (see Table 4.3).

Table 4.3 Distribution of students over classes and groups

Group	Class	Teacher	Participants
EC	A	A	15
CE	B	A	25
EC	C	B	23

Note. EC, experimental condition in Panel 1, control condition in Panel 2. CE: reverse sequence of EC.

In the first panel thirty-eight students followed the experimental lessons and twenty-five the spelling lessons of the regular program and the other way round in the second panel. The gender distribution did not differ by condition ($\chi^2(1) = .394$, $p = .530$): 68% of the students in the experimental condition (classes A &

C) in panel 1 were female, while 60% percent of the students in the other condition (class B) were female.

5.2 *The lesson unit*

We re-used Study 1's lesson unit, although some modifications had to be made as a result of the students' evaluation and teachers' experiences from Study 1. Appendix J shows the content of the final version of the lesson series. The main adaptation to the first lesson was that we also focused on the importance of originality and creative thinking for communicative texts. Most other modifications had to do with timing. During the first lesson students spent less time on assessing texts so there was more room for the metacognitive explanation of creative thinking. In addition, during this lesson, students also discussed how to provide feedback on each other's texts.

During the second lesson, the list of the number of characters students could choose from was slightly shortened, since some characters were rather similar. For the third lesson, some lesson activities were slightly shortened to allow more time for writing. Since reading all six sample texts took up too much class time, the sample text excerpts for this lesson were reduced from six to four. During the fourth lesson, two excerpts were added that used senses and required students to name those senses, to demonstrate to students how senses are used in newspaper articles to capture the reader's attention. During the fourth lesson, there was not enough time during Study 1 to write and evaluate the texts. Moreover, students had to interview people, which also required some time. Therefore, we chose to let the students finish writing at home and moved the evaluation in groups to the beginning of the fifth lesson. As a result, students wrote individually in Study 2 and not in pairs, as they did in Study 1, so that they could finish the assignment themselves at home and were not dependent on each other.

5.3 *Measures*

For the experiment, we measured the same variables as in Study 1, but we added Writing Behavior, in terms of Text Production, as a dependent variable and Attendance Rate as a fidelity variable.

5.3.1 Writing tasks

We used the same tasks as in Study 1 but since there was an extra measurement moment, we added a creative task about a young prince who leaves the palace

every night and only returns in the early morning, and a communicative task about reducing the number of tests at school.

5.3.2 Writing behavior

We recorded students' writing behavior using a process sheet that we created for this study, which was based on previous research on translating Latin texts in Dutch (Luger, 2020) and on narrative writing research using logging data (see Chapter 2; Ten Peze et al., 2021). Students could choose between eleven activities during writing (e.g., I am reading the assignment, I am organizing/selecting my ideas, I am writing, I am deleting text) (see Appendix N for more details). Although we were interested in the amount of text production within the entire process, we decided to ask participants to indicate all possible options to avoid sensitivity to the dependent variable.

5.3.3 Creative self-concept, writing attitude, and approach and avoidance motivation

We measured the same personal characteristics as in Study 1: Creative Self-Concept, Writing Attitude and Approach and Avoidance Motivation, using the same questionnaires and administered them in the same way. The reliability (Cronbach's alpha) for all characteristics was good (Creative Self-Concept, .93; Writing Attitude, .94; Approach Motivation, .80, and Avoidance Motivation, .83).

5.3.4 Fidelity

Students' workbooks

We examined the extent to which students participated in the lessons by checking their workbooks. Since some students took their notebooks home, we analyzed thirty-one workbooks for Panel 1 and seventeen workbooks for Panel 2.

Appreciation of the lessons

We administered the same questionnaire as in Study 1 to check the fidelity of the instructional design's implementation, and to test for possible differences between panels.

Attendance data

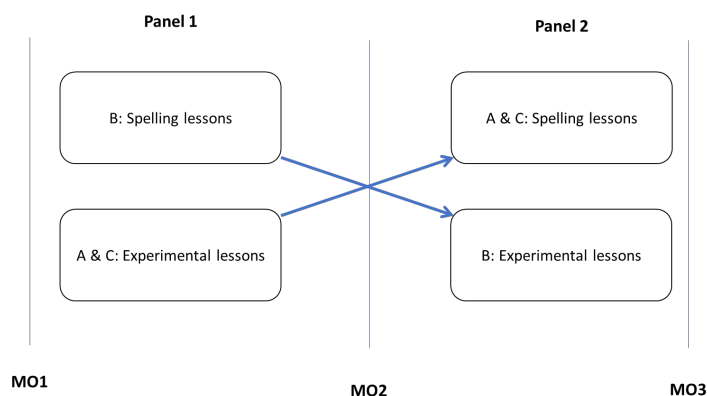
We tracked students' attendance records and calculated the percentage of students present during each lesson based on the total number of lessons all students attended.

5.4 Procedures

5.4.1 Implementation

Figure 4.4 shows the switching panel design we used in this study. The first panel was taught in September, at the beginning of the academic year, with three lessons during the second week and three lessons during the third week. The second panel was taught from the end of October till half November. In between panels students had a regular school test week and a week's autumn holiday.

Figure 4.4 Quasi-experimental design with switching panels: three classes (A, B, C), switching conditions after measurement occasion 2 (MO2)



5.4.2 Text quality

Since the texts of Study 1 and Study 2 were assessed simultaneously, using the same instruments, reliability was identical to Study 1.

5.4.3 Writing behavior

Students wrote a text in Word in no more than twenty minutes on their laptops. Writing Behavior was measured twenty times during the writing task using a self-report form (Torrance et al., 2007) at fixed 60 second intervals (see Appendix N). At the beep, students indicated on the form what they were doing at that moment. They practiced using the process sheet during a test session prior to the intervention lessons and had been instructed to tick the specific activity at that moment as quickly as possible and then continue writing.

5.4.4 Creative self-concept, writing attitude, and approach and avoidance motivation

As in Study 1, the questionnaires were completed before the start of the experiment, but in some cases, due to various reasons, the questionnaires were completed later.

5.4.5 Fidelity

We administered the questionnaire on the fidelity of the instructional design's implementation in the week after the completion of the study.

5.5 *Data analysis*

5.5.1 Text quality

We implemented the same procedures as used for Study 1, with the addition of condition as factor and three instead of two measurement occasions. We compared the fit of seven nested models, for Narrative and Communicative tasks separately. The first three models analyzed the sequence of Measurement Occasion (Model 1), plus Condition (Model 2), plus interaction between Measurement Occasion and Condition (Model 3). Measurement Occasion was included as repeated component with participants nested in classes as random factor, and Class as random factor. In addition, we added the effect of a learner characteristic score (centered) in four steps: Main effect (Model 4), and the interactions with Measurement Occasion (Model 5), with Condition (Model 6) and the interaction with Time * Condition (Model 7). We tested these models with Global Text Quality as dependent variable.

5.5.2 Writing behavior

Frequency analyses revealed that two of the eleven activities were rarely reported: 'I am creating a list of ideas', and 'I am selecting and organizing my ideas'. Our target variable *number of text production events within the process*, was indicated by the item 'I am writing'. To extract a production factor, we ran factor analyses with the 'I am writing' item and the other nine types of events for each of the text types separately. We used maximum likelihood extraction which enabled us to compare the fit of competitive models, with oblimin rotation.

For narrative writing tasks, a three-factor model fitted no worse than a four-factor model (X^2 -change 2.74, df 6, $p = .84$) but better than a two-factor model

(X -change 16.006, $df7$, $p = .025$). The three factors explained 38.62% of the total variance, and represented Task Representation, Forward Text Production and Reprocessing Text. For communicative tasks, a two-factor solution proved to be the best choice ($X^2 = 17.369$, $df19$, $p = .565$), empirically and theoretically (X -change with three factor model 8.552, $df7$, $p = .286$, with one factor model X -change was 12.420, $df8$, $p = .133$). Although the one-factor model also fitted the data, we chose to structure the data according the two-factor model so that a 'Production' factor was established for both text types (see Appendix O for the factor loadings).

To answer the research question, we applied the same set of nested models as for Text Quality. As the number of events varied per participant, per occasion, and per text type, we added a preliminary model including the control variable's number of valid responses. At Measurement Occasion 1, 72% of the participants reported valid responses of activities for 19 to 20 events, while 18% reported to have stopped the process at event 14-18, and 10% after event 10-13.

5.5.3 Fidelity

Students' workbooks

In Panel 1, 88% of all students completed all divergent thinking assignments (total = 124) and 65% completed all writing assignments (total = 124), and in Panel 2, 68% (total = 68) and 35% (total = 68) respectively. In both Panel 1 and 2, the final writing task was often not completed. This can be explained by the fact that students had to finish this assignment as homework before the sixth lesson. Thus, this slightly distorts the results for writing. Overall, the workbooks show that students in Panel 1 participated better in the lessons than during Panel 2.

Students' appreciation of the lessons

We collected participants' evaluations with the questionnaire we used in Study 1 (see Table 4.2) to check the fidelity of the instructional design's implementation and applied the same data analysis.

Attendance data

The percentage of students who attended all writing classes was satisfactory: the absentee rate was 7.4% for all classes. However, there was a difference between the number of absentees during Panel 1 and Panel 2: in Panel 1 the absentee rate was 4.4% for the EC group and 12% for the CE group in Panel 2.

5.6 Results

5.6.1 RQ1. Appreciation of the instructional unit

Perceived qualities of the lesson series

Figure 4.5 presents the mean scores. If we apply a boundary of two times the standard error (mean $SE = .15$), the following pattern emerges. Five statements scored neutral, Boring, Pleasant, Annoying, Interesting and Clear. Five positive items scored positive (Meaningful, Creative, Innovative, Good, and Original). Participants did not report experiencing the lesson unit as difficult or confusing.

Figure 4.5 Appreciation of the lesson unit. Mean scores ($SE = .15$)

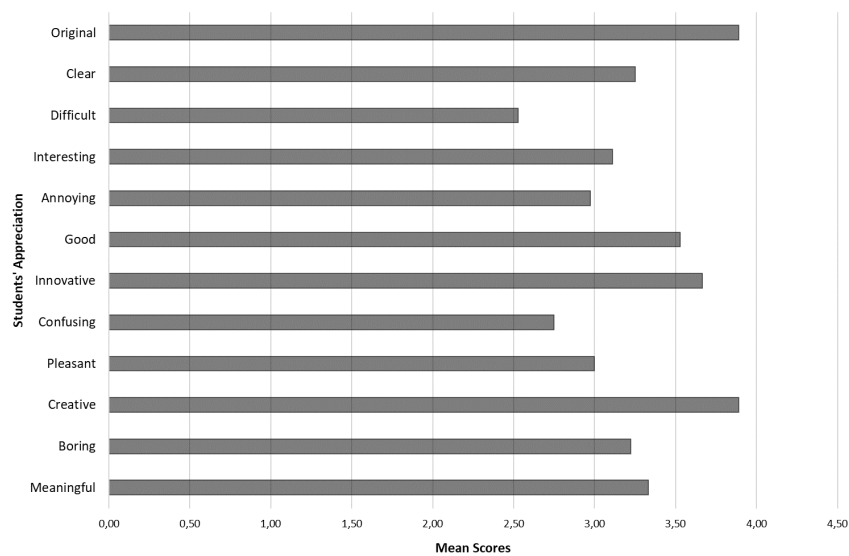
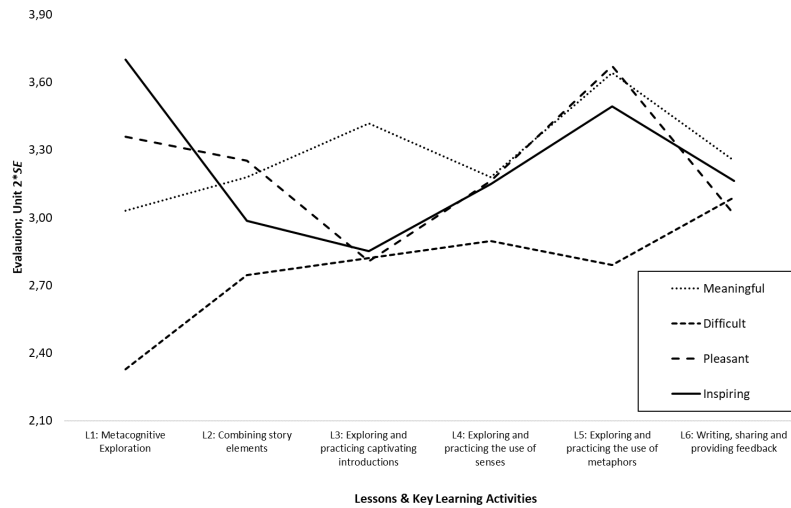


Figure 4.6 presents students' appreciation for the key elements per lesson. The first observation is that none of the lessons was too difficult, with lesson 1 considered easy, but also most inspiring of all lessons and highly pleasant. The second lesson was considered highly pleasant as well but scored neutral for all other aspects. Lesson 3 scored significantly positive on Meaningful. Lesson 4 scored neutral on all aspects. Lesson 5 scored significantly positive on Meaningful, Pleasant, and Inspiring. The last lesson scored neutral on all aspects. Overall, the patterns reported are very similar to those from Study 1 (see Figure 4.3).

Figure 4.6 Appreciation of the key learning activities in six lessons



Conditions: Social climate

Scores on the six items on classroom climate ranged from 3.25 (*I felt sufficiently at ease in the class to work on my tasks*) to 3.75 (*During the lessons there was a pleasant, respectful climate*) with a mean of 3.5. So, all classes also scored above neutral for class climate.

Writing tasks

Each lesson contained one writing task to practice. Participants were positive about the tasks (score 3.4).

Perceived change as outcome

Participants scored their changes in writing communicative texts as 2.88, which is neutral, 31% scored negative, and 25% positive. This perception of change was predicted by the score on Creative (Figure 4.6: $F(1, 30) = 14.33, p < .001$), the inspiring score of lesson 5 (Figure 4.7: $F(1, 30) = 8.88, p = .006$) and the social climate item: *I felt sufficiently at ease in this class to share my tasks and texts* ($F(1, 30) = 5.45, p = .027$).

Figure 4.7 Communicative texts:
Changes between three measurement occasions for two conditions:
text production



5.6.2 RQ2. Effects on text quality and writing behavior

Text quality

No effect of the experimental condition was observed, in either panel: inclusion of the interaction between Measurement Occasion and Condition did not improve the model fit (Model 3).

Writing behavior

Appendix P presents the model comparisons for Communicative and Narrative writing tasks. For both tasks, Model 4 fitted best for Text Production indicating an effect of condition.

Communicative texts

The effect of Measurement Occasion ($F(1, 52.59) = 4.53, p = .015$) is moderated by condition ($F(2, 49.23) = 4.36, p = .018$). From subsequent dummy analyses we observed no differences between conditions at MO1 (Mean Difference (M_{diff}) = 0) and MO3 ($M_{diff} = -.119 (SE .17), p = .487$), but found a difference in favor of the EC-condition at MO2 ($M_{diff} = -.48 (SE .16), p = .003$). The scores in the CE-condition did not change from MO1 to MO2 ($M_{diff} = .01 (SE .13), p = .808$), neither from MO2 to MO3 ($M_{diff} = -.24 (SE .13), p = .075$). The scores in the EC-condition moved upwards from MO1 to MO2 ($M_{diff} = -.44 (SE .11), p < .001$), and did not change between MO2 and MO3 ($M_{diff} = .12 (SE .11), p = .278$).

In summary, in Panel 1, we observed an effect of the intervention in the EC-condition, which was maintained in Panel 2. In Panel 2, in which the CE condition received the intervention, no significant effect was observed (see Figure 4.7).

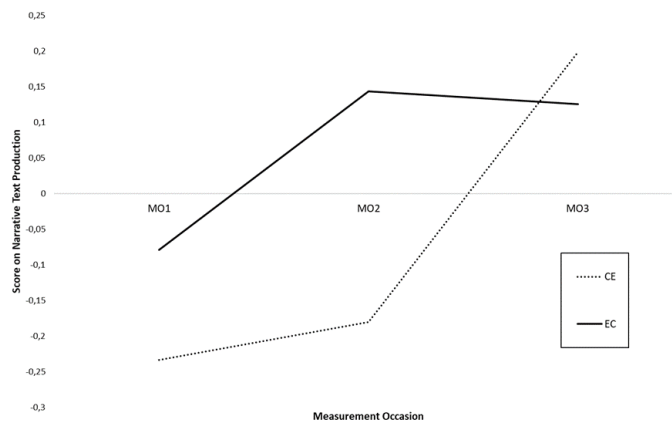
Narrative texts

We observed condition differences at MO2 (CE < EC, $M_{diff} = -.32$ ($SE .16$), $p = .046$) and not at MO1 ($M_{diff} = -.15$ ($SE .17$), $p = .367$) and MO3 ($M_{diff} = -.09$ ($SE .17$), $p = .592$). The movement in Panel 1 stems from condition EC, in which scores significantly increased ($M_{diff} = -.22$ ($SE .10$), $p < .035$), and not from condition CE ($M_{diff} = 0.05$ ($SE .12$), $p = .663$). In Panel 2, the movement is in condition CE ($M_{diff} = 0.05$ ($SE .12$), $p = .663$), and not in condition EC ($M_{diff} = .015$ ($SE .10$), $p = .89$). Both groups profited from the intervention, in this respect (see Figure 4.8).

5.6.3 RQ3. Moderator effects: Creative self-concept, writing attitude, and approach and avoidance motivation

In line with Study 1, we found no effect of Creative Self-Concept and Approach and Avoidance Motivation. Writing Attitude influenced Text Quality positively, for narrative texts only ($B = 11.86$, ($SE 2.18$), $t(37.07) = 5.43$, $p < .001$).

Figure 4.8 Narrative texts: Changes between three measurement occasions for two conditions: text production



6 DISCUSSION

In these two studies we examined the efficacy of a writing intervention based on Schacter's Creative Teaching Framework (Study 1) and the effectiveness of the redesign (Study 2). For both studies, we investigated whether students appreciated the instructional unit. Furthermore, we examined to what extent the participation of students in the intervention contributed to text quality and increased text production of communicative and narrative texts. Finally, we explored whether the effects of the training were influenced by students' creative self-concept, writing attitude, and approach and avoidance motivation.

6.1 *RQ1. Appreciation of the instructional design*

In both studies, students were satisfied with the design of the lessons and considered the lessons creative. For Study 1, improvement was needed for one item (boring). After the subsequent adjustments we made for the redesign in Study 2, students scored neutral to positive on all items.

Interestingly, for both studies, lessons were perceived more positively when the divergent thinking task was applied either in the form of a game element, or to a creative text. A game element is free and playful, and these elements also apply to creative tasks. In lessons where the divergent thinking task focused on communicative texts (Lesson 3, 4 and 6), students were less positive, although they did recognize the importance of these lessons. It seems that the playfulness and freedom contributed to the high rating of this type of divergent thinking task. This is in line with research highlighting that choice and discovery are crucial for creative thinking (Schacter et al., 2006). Since freedom is more limited when writing a communicative text, it is especially important for this type of text to emphasize the importance of divergent thinking to produce original ideas.

Finally, it is noticeable that students considered the first lesson, the metacognitive lesson on creativity and originality, the most inspiring. The aim of the lesson was to stimulate students' intrinsic motivation. In that respect, we can conclude that the lesson contributed to that aim.

6.2 *RQ2. Effects of the instruction on text quality and text production of communicative and narrative texts*

6.2.1 Text quality

Contrary to our expectations, for both studies, and for both text types, we found no effect of the intervention on text quality. Therefore, we must conclude that

our strategy instruction that included creative thinking and narrative techniques was not effective, although strategy instruction has been shown to be effective for writing (Fidalgo et al., 2015; Graham & Harris, 2006; Harris et al., 2009; Van Ockenburg et al., 2021) and divergent thinking as well (Baer, 1996).

Various explanations for the lack of effects can be raised. For example, we might not expect to find an effect if students did not appreciate the instructional design. But in both our studies, students were satisfied with the unit, the social climate in the classes was good, and students perceived the lessons to be creative and original. Similarly, we would also not expect to observe differences between conditions if the study lacked reliable text quality measurements, but reliability was found to be sufficient in both studies. Furthermore, one might not expect to find an effect of the intervention if the research design failed in some respects related to implementation or fidelity. However, in the present study, we observed no effects, despite a reliable research design having been executed. Therefore, it seems likely that the unexpected outcome (no effect of the lesson series on text quality), might be due to the instructional design itself, the lesson unit. Although this design was proven to be effective for narrative texts in a previous study (see Chapter 3; Ten Peze et al., 2023) it failed to produce similar results when applied to communicative writing.

Upon reflection, we would like to make three critical comments about our design which might explain, to some extent, why an effect was lacking in this study. First, it is likely that the instructional design stayed too close to the original narrative design and did not focus sufficiently on the new target text: communicative texts. Since narrative techniques played a crucial role in the unit, we left the first two lessons of the original narrative writing design almost completely intact. After all, these lessons focused on creative thinking and narrative writing, and narrative techniques fitted well in these lessons. Although we adapted the first lesson after Study 1 and added attention to the importance of divergent thinking for original communicative texts for Study 2, this attention may still have been too limited. A reason to keep these lessons was that they were positively received in the original design (see Chapter 3; Ten Peze et al., 2023), as well as in Study 1. However, we tend to think that it would probably have been more effective, in both lessons, if we had paid more attention to using narrative techniques to depart from the default patterns to create original and engaging communicative texts. From a domain specific point of view, learning to use narrative techniques in the domain of narrative writing as a context for practice seems logical, but less when the unit aims at communicative writing.

Moreover, students' assessment of the unit supports this hypothesis. The lower appreciation for divergent thinking tasks focusing on communicative texts

might have been avoided during the metacognitive lesson if we had focused more on the relevance of originality for communicative texts and on how to achieve it. In retrospect, it may also have been confusing for students to spend a relatively large amount of time (one-fifth of the writing lessons) on writing a narrative text, especially in the beginning of the series, while the aim was to write original communicative texts. As a result, some students expressed disappointment when they had to switch to writing communicative texts: they wanted to continue writing more narrative texts.

For the original narrative design, the narrative techniques used, and the narrative target texts were in the same narrative domain, thus ensuring optimal alignment. Furthermore, all learning activities aimed to improve the default process of narrative writing. For the current unit, there is a crucial difference: students had to implement divergent thinking and narrative techniques more consciously in another domain: transfer was needed from the narrative to the communicative domain. According to Tromp & Baer (2022), cross-domain and interdisciplinary creativity are challenging since they require more knowledge as more than one domain has to be taken into account (p. 4). Especially for students in upper secondary education, the transfer from one domain to the other is not natural. In fact, transfer always requires substantial cognitive effort (Becheick et al., 2010; Taatgen, 2013). Therefore, it may require more practice and explicit attention when the technique and the text type are from different domains (narrative versus communicative) compared to when both are in the same domain (only narrative).

Second, the divergent thinking tasks might not have been sufficiently focused on the target texts (Baer, 1996, 2016; Barbot et al., 2011). Students mainly reported on the techniques they practiced during the unit (e.g., using senses and the use of metaphors) and not on the divergent thinking activity itself. This leads us to suspect that, despite our efforts, the divergent thinking might have been insufficiently task-oriented (Baer, 1996; Jia et al., 2019).

All divergent tasks did focus on communicative texts: generating ideas for a captivating opening and using one's senses and metaphors in communicative texts. For the gripping opening, the divergent thinking task directly generated ideas for the texts students wrote. For the metaphor and the senses texts however, the divergent thinking task focused on a writing task that preceded, but was not connected to, the lesson's final task. That final task required students to apply divergent thinking completely independently, without help or support. For example, in the lesson on senses, students used a word web to generate ideas for describing a personal event by using senses. For the final communicative text, ideas for a topic were generated but not for the use of senses. Students were

simply instructed to incorporate two senses into the text. Likewise, for the metaphor lesson, students first generated metaphors in a group game using dices with words and subsequently wrote a new final text with a new metaphor that was not connected to the outcome of the previous divergent thinking game. In both lessons the divergent task was thereby disconnected from the final writing task. In conclusion, students practiced only once with a divergent thinking task that *directly* generated ideas for the writing task.

Third and finally, for the narrative unit, students always worked on content discovery for the narrative text they wrote. In this unit, we may have focused too much on techniques (*Pimp* your text) and not enough on content discovery for the text. During the second lesson, students generated ideas for a narrative text. The third lesson is the only lesson in which students generated three content ideas for a captivating beginning. Of these three, they developed the most original idea. During the fourth lesson (senses), generating ideas for the *content* of their final text was lacking. As the fifth lesson focused entirely on the application of metaphors in a text, this lesson also did not generate ideas for the content of the text, but instead focused entirely on language use. So, although we did provide strategies to generate content, such as mind mapping, combining ideas/words and generating many ideas, we did not always link them sufficiently to the content of the final writing task.

We hypothesize that the unit would become more effective if we had 1. emphasized the importance of departing from default patterns by divergent thinking to create original communicative texts more strongly, 2. better aligned the divergent thinking task with the writing task, and 3. focused more on content discovery for communicative texts, just as the narrative unit focused on content discovery for narrative fiction. Since students were satisfied with the unit and the design principles have been proven effective for narrative writing, we see no need to change the learning activities or design principles, but the way they were applied clearly needs improvement.

6.2.2 Writing behavior

For communicative texts, we found an effect of the intervention on text production in panel 1, which was maintained in panel 2. However, the effect was not replicated in panel 2. Although in the experimental condition the share of text production events increased in panel 2, the effect was not significant. Therefore, we must conclude that we did not find a consistent effect on text production for communicative texts.

For narrative texts, however, we did find a consistent result: students in the experimental condition profited from the intervention in both panels. Even though narrative texts were not the target text of the training and students wrote only one narrative text during the unit. These results support our earlier findings that the narrative writing process enhances text production (see Chapter 2; Ten Peze et al., 2021) and is in line with our hypothesis that divergent thinking is a 'default' strategy for generating content for narrative texts. There is best alignment between the learning activity and the text, since it is almost a necessary strategy for generating content for a fictional world in which anything is possible. Perhaps activating this thinking strategy during the training contributed to students' text production, even though this training focused on communicative texts.

The lack of a consistent result for the text production of communicative texts could be an implementation effect. Both the absentee rates and the analysis of the workbooks showed that students were more likely to attend lessons and work better during panel one than panel two, which may have affected our results. An unfortunate inherent aspect of ecologically valid research in real classroom situations in an authentic school context is that there are many variables that can influence a study's outcomes. The lack of effects does not appear to have been due to the class climate in this study, as the climate in classes was good during the experiment. Thus, it seems likely that a more limited effect was due to missed classes and students' declining participation during the unit in the second panel.

6.3 RQ3. Moderator effects: Creative self-concept, writing attitude, and approach and avoidance motivation

Contrary to our expectations, we found no influence of creative self-concept and approach and avoidance motivation on text quality and text production. Since the unit aimed at increasing text production under time pressure, we expected the course to be more effective for students with an approach motivation than for students with an avoidance motivation. Since we found in a previous study that students who score high on creative self-concept wrote better creative and communicative texts, we expected self-concept to moderate the effects of the training. However, we found no effect for both motivational orientation and self-concept.

For both studies, only writing attitude explained text quality. For Study 1 for narrative as well as communicative texts and for Study 2 for narrative texts only. Students with a positive writing attitude, scored higher on text quality. This is in line with Amabile's componential theory of creativity in which motivation plays

a crucial role (1983), and with our previous finding that students wrote better narrative and communicative texts when they reported a more positive attitude towards writing (see Chapter 2; Ten Peze et al., 2021).

We cannot properly explain the fact that writing attitude contributes to the quality of narrative texts in both studies, but only to the quality of communicative texts in Study 1 and not in Study 2. However, these findings do support results from previous research that writing attitude is even more important for narrative texts than for communicative texts (see Chapter 2; Ten Peze et al., 2021). We explained this by pointing to Doyle's fiction world (1998). For narrative texts, writers cannot simply refer to the existing world, but it is necessary for them to use their imagination to enter the fiction world. This requires additional cognitive effort and is virtually impossible without emotional involvement on the part of the writer. Since during communicative writing there is little or no entry into the fiction world, the importance of writing attitude may be less important.

6.4 *Limitations and future directions*

Like every study, our study also has limitations. First, for practical reasons, all participants for studies 1 and 2 came from one school, at which the first author worked as a teacher, which limits the studies' generalizability. However, the advantage is that we know exactly what training students followed prior to our research, both in terms of writing and creative thinking training. Thus, for both studies, we know that students had no experience with divergent thinking nor with writing creative communicative texts. All effects are therefore attributable to the intervention and not to prior experiences. Second, a more qualitative analysis of the texts students wrote might provide us with more insight in the results. We found no effect on text quality in this study, but some raters did indicate that the techniques taught were clearly reflected in the texts. If we examine whether there is a difference in the extent to which the narrative techniques students practiced were applied in the texts, this might provide new insights into the effectiveness of the training.

Future research could focus on a redesign of the unit. Since the design principles have proven effective in previous research (Schacter et al., 2006; see Chapter 3; Ten Peze et al., 2023), the design principles do not seem to be the problem, but the way they were applied. The application of creative design principles might require a different approach for communicative texts since these texts are not automatically part of the creative domain for which the principles were designed. For a redesign, the design principles should be adapted even more closely to

communicative texts: the focus in all lessons should be entirely on the target task: writing an original communicative text.

Furthermore, all divergent thinking should focus *directly* on the target text. The tasks should generate content ideas that students can use in their communicative texts. We therefore recommend that the lessons work directly towards the final text without students first drafting another text that has nothing to do with the content of the final text. Finally, we recommend shifting the emphasis from using narrative techniques to generating original content for communicative texts. While narrative techniques should be taught, they are not the goal in themselves.

6.5 Conclusion

The results of our study show that students are positive about a communicative writing unit based on divergent thinking. However, applying creative instruction to communicative texts has no effect on the quality of students' communicative and narrative texts. The training does appear to influence students' writing behavior: it enhances the text production of narrative texts, even when the training is targeted at communicative texts. This indicates a transfer effect from communicative writing to narrative writing: even if you train students in divergent thinking during communicative writing, it enhances narrative text production. For the quality of the texts, we did not find this transfer.

In addition, motivation, in the role of students' affective attitude towards writing, plays a key role: students who have a positive attitude towards writing write better narrative texts and, during Study 1, better communicative texts as well.

Since the design principles worked well in previous research and students were positive about the unit, divergent thinking during writing class still seems to be a promising strategy for improving text quality. For future research and teaching, we recommend a redesign of the current unit in which the design principles are fully applied to communicative texts and in which all divergent thinking tasks focus directly on content discovery for the communicative task