

# Observation of peers in learning to write

## Practise and research

Gert Rijlaarsdam<sup>°</sup>, Martine Braaksma<sup>°</sup>, Michel Couzijn<sup>°</sup>, Tanja Janssen<sup>°</sup>, Mariet Raedts<sup>°°</sup>, Elke van Steendam<sup>°°°</sup>, Anne Toorenaar<sup>°</sup>, Huub van den Bergh<sup>°|°°°°</sup>

<sup>°</sup> Graduate School of Teaching and Learning, University of Amsterdam, the Netherlands, <sup>°°</sup> Vlekho, Ghent, Belgium, <sup>°°°</sup> University of Antwerp, Belgium, <sup>°°°°</sup> Utrecht University, Utrecht, the Netherlands

**Abstract:** In this paper we discuss the role of observation in learning to write. We argue that the acquisition of skill in such a complex domain as writing relies on observation, the classical imitatio. An important phase in learning to write, at all ages, is learning to write by observing and evaluating relevant processes: writing processes, reading processes or communication processes between writers and readers. First, we present two practical cases: writing lessons in which observation and inquiry are amongst other key elements and where students participate in a community of learners. Then, we review research that may inspire and substantiate proposals for implementing observation as a learning activity in writing education. Two types of studies are discussed: studies in which learners acquire strategies by observing and evaluating writing and reading processes of peers, as a prewriting instructional activity, and studies in which learners are stimulated to “pre-test” and then revise their first draft, as a post writing instructional activity. The paper closes with some recommendations for further research.

**Keywords:** writing, observational learning, strategy learning, inquiry, communities of learners



Rijlaarsdam, G., Braaksma, M., Couzijn, M., Janssen, T., Raedts, M., Van Steendam, E., Toorenaar, A., & Van den Bergh, H. (2008). Observation of peers in learning to write, *Practice and Research. Journal of Writing Research*, 1 (1), 53-83. <http://dx.doi.org/10.17239/jowr-2008.01.01.3>  
Contact and copyright: Earli | Gert Rijlaarsdam, Graduate school of Teaching and Learning, University of Amsterdam, Spinozastraat 55, 1018 HJ Amsterdam, the Netherlands.

## 1. Introduction

Once upon a time, writing education used to be simple. There was a writing task, students wrote a text and handed it in. Occasionally, before writing the text, model texts were analysed and discussed. The teacher delivered feedback on the text, usually a grade and maybe some marginal comments, and that was that. In spite of the feedback, most teachers perceived little progress in the writing ability of their students.

Then, in the 1960s, the paradigm of language education (L1) shifted towards language as a means of communication, moving from studying language as a system towards enhancing the language in communicative situations (Dixon, 1967; Sawyer & Van de Ven, 2007; Ten Brinke, 1976). This shift happened in many linguistic regions, in various forms<sup>1</sup>. The role of students in the teaching-learning process was discussed from various theoretical perspectives, generally proposing a more active and (self-)critical role, drawing explicitly or implicitly on Dewey (1916; 1930), relating to trends in educational sciences (Bruner, 1960, for instance) as well as development in the disciplines of linguistics (Halliday, 1973, Hymes, 1971) and literature (Iser, 1978; Rosenblatt, 1938). This was a move away from the transactional teaching model, where teachers transmit expert knowledge, towards the interpretative teaching model, where students create interpretations of the information they received. In various cultural practices and shared learning activities, views on what learning entails shifted from “learning as acquisition of knowledge” to “learning as a process of participation”. Thus, in the field of language education, and in particular in writing instruction, the way to constructivism was paved early. For writing education, three authors, Moffett, Elbow, and Bruffee, explicitly discussed assumptions about learning in writing education, and pointed out new directions. Reading the books of these authors, written 40 years ago, is still a very modern experience.

Moffett (1968) presented a complete L1-learning theory. He advocated real learning experiences, in which learners undergo and analyse what communication actually does. In his view, learning ensues from experiencing language, and from abstracting and generalizing from that experience. For writing instruction this meant that teachers should create writing tasks with real audiences, so that real readers would be involved in the composition process. Fortunately, real audiences were available in the classroom: peer students. Learning to write became learning to communicate: “Learning to use language, then, requires the particular feedback of human response, because it is to other people that we direct speech” (p. 191). And: “A response must be real and pertinent to the action, not a standard, “professional” reaction” (p.192).

---

<sup>1</sup> In [L1-Educational Studies in Language and Literature](#), accounts from various countries are published: Awramiuk, 2002 for Poland; Locke, 2001 for New Zealand; Pamfil, 2007 for Romania; Papoulia-Tzelepi, 2000 for Greece; Poyas & Shalom, 2002 for Israel; Sawyer & Watson, 2001 and Sawyer, 2007 for Australia; Starc, 2004 for Slovenia.

Elbow (1974) in his provocative *Writing without Teachers* also advocated real writing experiences where writers listen to their readers. Not to listen to the reader in order to accommodate the text to the reader, but to accommodate to the writer. Elbow's focus was the need of the writer who tried to get his thoughts clear via writing. For him writing was foremost an act of exploring. He denied the existence of an objective theory of a good text. Success of a text depends on the subjective reader. Therefore, writers should have the opportunity to listen to readers. He used the word "listening" on purpose here. Writers must be able to hear what the text "sounds" like, to hear their readers' voice and to hear whether the writer's voice was recognized by the reader. Listening to how various readers read the text – aloud – would provide enough feedback in itself. From this listening experience, the writer could decide whether he was clear enough to be understood, and whether what was understood was also what the writer had intended. Readers' feedback must stimulate further thinking about what was presented in the text. As a consequence, readers became more necessary than teachers in writing education; since there was no objective theory about what a good text entailed, there was no need to transmit this knowledge...

Bruffee (1981) also departed from a knowledge theoretical argument to justify the involvement of peers in writing instruction. In his view knowledge is subjective per se. This not only applies to knowledge about texts, but also to knowledge about the world and content knowledge. Learning means that students must experience and employ multiple and different perspectives of the world and of the text. Co-operation between peers may result in meaningful and nuanced knowledge about writing and the topic of writing. Therefore peer work should not be limited to post-writing activities, i.e., responding to and talking about each other's texts. It should also include talking about the writing task and the contents and purpose of writing before and during writing the first draft. A text does not present the world, but a view on how a writer perceives the world. This view could be the subject of discussion among peer students before it was expressed in a textual form. Talking about ideas and text is something one should learn at school. Therefore, part of Bruffee's textbook on writing was a course for tutors that guided tutors in discussing text and contents with tutees (Bruffee, 1980).

From two meta-analyses (Hillocks, 1986; Graham & Perin, 2007) we may infer some developments in studies on the effect of peer involvement in writing lessons. During the 1960s and 1970s, much was expected of having peers involved in what Hillocks called post-writing instruction. In his detailed meta-analysis of 60 intervention studies published between 1963 and 1982 he distinguished, among others, studies which he labelled as "post-writing treatments", referring to effects of learning activities after the initial act of writing (Hillocks, 1986), like a revision phase. Merely adding such a revision phase after text production did not appear to be very effective (effect size (ES) .19). This is not surprising as self-initiated and self-governed revision is difficult, especially for learners who are in the process of acquiring genre-specific criteria for what a good text entails at the same time as they are in the process of experiencing what texts do to readers. Therefore, a feedback event is often inserted between the text

production and the revision phase. Traditionally, it is the teacher who provides feedback. Hillocks reported that when no clear criteria were involved in the feedback, the effect was small (ES .05). If, under similar conditions, learners receive feedback from the teacher and from peers, the effect was somewhat larger (ES .24). If both teacher and peers apply clear criteria in providing feedback, the effect was much larger (ES .56). Thus inserting feedback between drafts, together with specific criteria for feedback and peers as feedback providers, contribute to effective teaching of writing. This is well in line with the theoretical accounts of Bruffee (1981), Elbow (1974) and Moffett (1968).

However, what component of this instructional environment that contributes most to learning is not clear. Is it the author's awareness of writing for a real audience, is it the feedback from "real" readers or from various readers, or is it the student-writers being feedback gives themselves applying specific criteria and building knowledge about what a good text entails? Do students learn the most in the role of writer, in the role of feedback receiver and processor, or in the role of feedback provider? What is necessary, what is additional to establish in writing lessons? Studies of the time that compared the effect of peer feedback with teacher feedback did not distinguish between these components. However, they all showed a positive effect of peer feedback, or at least that peer feedback was as successful as extensive teacher feedback<sup>2</sup>.

Over the years, thinking about the role of peers in the learning-to-write process changed. Peers were not merely seen as an aid to help the author realize what the text did in the reader, and whether this effect of the text corresponded to what the writer intended. Nor were peers merely seen as a help to estimate to what extent the written text met the criteria of a good text, set by the textbook or teacher. The power of peer involvement was rather seen in the teaching-learning set up as a whole, where students were viewed as participants in the teaching and learning process, carrying knowledge and experiences about effective texts and about effective communication. These insights into peer involvement in writing classes, advocated and practiced by Bruffee (1981), have been reflected in a recent meta-analysis of effective writing instruction (Graham & Perin, 2007). In their analysis of 123 writing intervention studies (including some studies discussed by Hillocks), peer feedback was not distinguished as a separate instructional feature but included as an element of collaborative learning. The effect size of this larger collaborative learning category was considerable (ES .75). Thus, creating learning environments where peers work together to think, to plan, to draft, and/or to revise their texts is, no doubt, an effective approach to writing instruction. At the same time, the holistic approach in this meta-analysis does not allow us to theorize

---

<sup>2</sup> Benson (1979), Clifford (1981), Ford (1973), Karegianes, Pascarella and Pflaum (1980), Maize (1954), Sager (1972; 1973) and Shum (2005) reported significant effects for the experimental peer feedback condition, Burt (1980), Carter (1982), Copland (1980), Delaney (1980), Farrell (1977), Fox (1978), Lyons (1976), Myers (1979), Pfeifer (1981), Pierson (1967), Rijlaarsdam (1987), Sears (1971) and Ward (1959) observed equal effects of peer and teacher feedback. NB Mark Shum's study is from the 80's, it was only published in English in 2005.

about the contribution of the separate elements of the intervention, or the most effective sequence of these elements.

In this paper we will focus on the involvement of peers in writing classes, limiting ourselves to a presentation and discussion of two major and closely related learning activities in such classes: observation and inquiry. Our aim is to show that in several theoretical approaches, varying from social constructivism via socio-cognitive learning theory to referential communication, observation and inquiry, are key elements. Thus, after sketching our frame of reference, we will start with teaching practices, based on various research perspectives, and then discuss various sources of research on observational learning.

## 2. Practice as a starting point

When we describe and analyse the role of observing as a key learning activity in learning-to-write lessons, it might be helpful to first sketch our frame of reference. Two fairly simple figures may guide our analysis of effective practices (Figures 1 and 2).

A first assumption for designing effective instructional environments in learning-to-write classes, is to realize that writing and learning to write are interdependent competencies, as are reading and learning to read (Figure 1) (Rijlaarsdam & Van den Bergh, 2004).

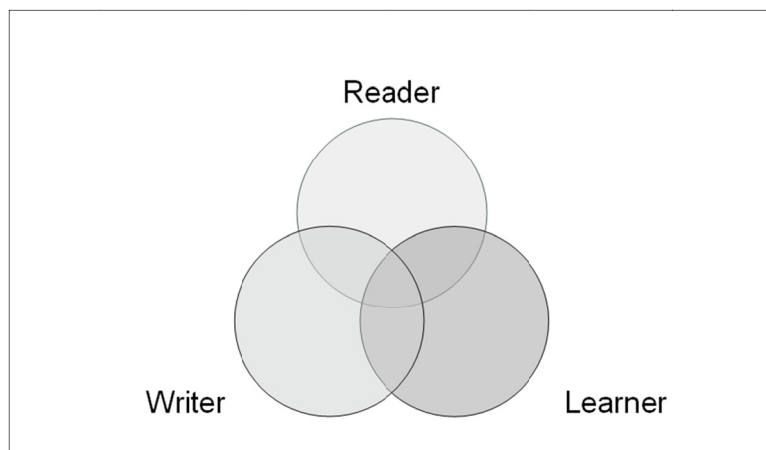
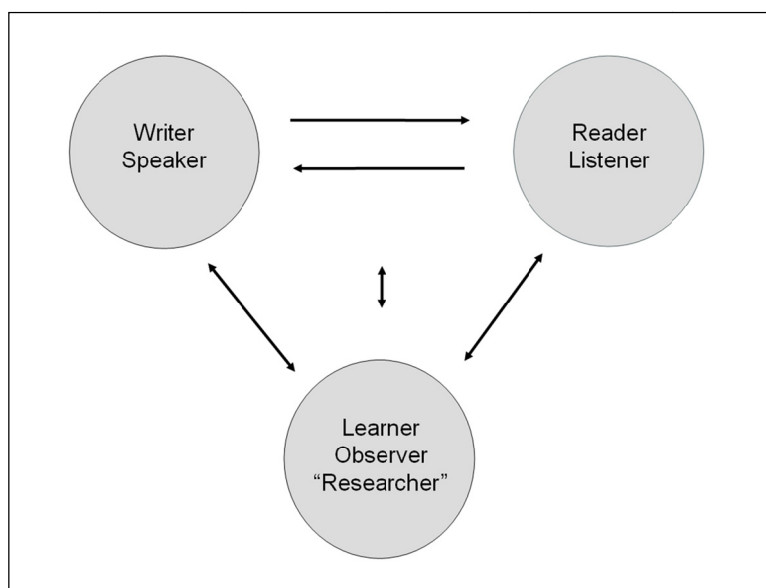


Figure 1. Three interrelated capacities in learning-to-write.

A student who does a writing task in class, must have opportunities to learn from doing a writing task; writing and learning-to-write are different but interrelated processes (Rijlaarsdam & Couzijn, 2000). Learning from executing a writing task is not provided

by the doing itself. It must be stimulated via the instructional design. Therefore, well designed writing lessons evoke the learner capacity. This implies that, at some instance or instances, students are not writers, but learners. They observe, process, abstract, generalize and contextualize information from the learning environment into declarative, procedural and conditional knowledge; they gain awareness about what a good text in this context comprises and/or how to produce such a text under the given circumstances. (See for a theoretical account Oostdam & Rijlaarsdam, 1995; Rijlaarsdam & Couzijn, 2000.)

To stimulate students' learning-to-write capacities, instruction should stimulate them to observe and evaluate relevant processes: writing processes (strategies), text processing processes (reading), or communication processes between writers and readers (talking about, for example, texts and interpretations).



**Figure 2.** Lesson design model for the L1-curriculum: Designing interrelated roles or functions.

Therefore, designers of writing lessons should not focus on the role of the writer only (see Figure 2). Designing writing lessons could be guided by the design rule that at least the Learner role must be realized in the lessons. Input for learning can be Writing (writers role must be designed), Reading, or Interaction between Writer and Reader. In some cases, the students act in several roles, in other cases, just in one, as we shall see in the examples and the studies we present. But even if a student functions during the

lesson just in one role, others will function in another role: there is always in some respect a complement.

In his rich description of his teaching practice, Uwe Geist (2004) focuses on classic imitation as a learning activity, building on the natural habits of learning, moving from the unconscious to semi consciousness, which again is a matter of awareness raising:

The unreflected, casual and random use of imitation we practise all the time is uncontrolled, e.g., it often becomes an imitation of the “ends”, and not of the “means”, as Dewey formulates it, and imitation thus loses its element of analysis, of “close observation and judicious selection” which makes it “an intelligent act” (Dewey, 1916: 42). The potential in imitation I want to activate is precisely this semi-conscious analytical component of observation and selection. In its semi-consciousness, it provides access to funds of techniques which are commonly shared, but which are too subtle, too varied, too contextually determined to be formulated in common rules or instructions. (Geist, 2004, p. 171).

In Geist’s teaching practice, students attempt to reconstruct the relation between text features and reading experiences. They act as “researchers” who try to objectively reconstruct their reading experiences (“data”) from a variety of texts (“data analysis”), and then try to relate (“theorize”) this variation in text features to variation in reading responses. Students construe “scales of texts”, or genre awareness, which seems to be an effective way to teach composition (See Hillocks, 1986, for “scales”).

Thus, the input for the learner/observer/researcher can be acts of reading, like in Geist’s example, but it can also be acts of both writing and reading. In studies we will refer to later, learners do not write themselves, but instead observe, analyse, compare and evaluate other writers who, for instance, are learning to write an argumentative text (Braaksma 2002, Couzijn 1999), synthesis texts (Raedts et al., 2007), or writers who are learning to cooperatively revise their texts (Van Steendam, Rijlaarsdam & Sercu, 2006, 2007, 2008a and 2008b). The focus is on observing the targeted behavior: learning to write requires observing writers, learning to read requires observing readers (Couzijn, 1999).

In other studies, the input for analysis by the learner consists of reader’s processes, that is, learners experience of how readers process texts (Couzijn & Rijlaarsdam, 2004; Crasnick & Lumbelli, 2004; Lumbelli & Paoletti, 2004), or how writers change positions from writer to reader to writer again (Holliday & McCutchen, 2004; Holliday, 2004). From observing how texts work in readers they learn by comparing and evaluating strategies as well as by abstracting and generalizing from their observations. In these cases, the students act as writer first, then learns from being in the role of reader (Holliday & McCutchen 2004), and applies the new acquired knowledge in a second round of writing; or they write, and then experience readers of these or similar texts; or they see readers, and then write.

In the two examples from innovative teaching practice that we present in the next sections, a more complex pattern of distribution of role is implemented: in both cases all three roles are implemented, and students are involved in more than one role.

## 2.1 Examples from practice: Community of learners

Current lesson models in research literature on writing strategy teaching, include observation, as part of inquiry as a distinctive element. In successful strategy training models, such as the Social Cognitive Model of Sequential Acquisition (Zimmerman, 2000) or the Self-Regulated Strategy Development model (Graham & Harris, 2003), observation is a distinctive element of the sequence of learning activities. In the research literature, the focus in the description of these sequences is on modelling, as teacher's task. However, in this paper we would like to focus on the learner's perspective, and on theories, practice and research that focus on the student as they learn from observing each other: peer involvement.

In socio-cultural theory, for example, observation and inquiry are strongly integrated into the classroom activity system. In their chapter on the tenets of sociocultural theory of writing instruction research, Englert, Mariage, and Dunsmore (2006) provide a clear oversight of three tenets, as they call the three educational design principles, as we would call them.

The first tenet is the establishment of sociocognitive apprenticeship in writing classes. "This implies that interactive dialogues about texts, content and processes must be created: teacher-to-student, and student-to-student. (...) The heart of writing development is the dialogue in which teachers and students collaborate, inform, question, think aloud, self-correct, challenge, and construct meaning together." (Englert et al., 2006, p. 211). The quality of dialogue depends on the meaningfulness of the shared work.

The second tenet is the use of procedural facilitators that support cognitive performance. These facilitators are tools that help writers to organize mental reasoning by offloading aspects of thought and by making elements of the activity more visible, accessible, and attainable (Englert et al., 2006, p. 211). One of these tools is public demonstrations by the teacher, which enable students to witness the bottlenecks, false starts, dilemmas, actions, thoughts, and corrections of writers in the process of text monitoring (Englert et al., 2006, p. 215).

The third tenet Englert et al. discuss is the establishment of communities of practice, in which knowledge construction and knowledge dissemination are emphasized. Students participate in inquiry-based conversations about texts, learning to treat printed words as thinking devices. They are more likely to be successful in approaching their texts as improvable objects (Englert et al., 2006, p.216). When they interact frequently with other writers and readers they have greater opportunity to understand and internalize the perspective of their audience, thereby laying the foundation for the development of dialogical skills that support text production, transformation, and



revisions (ibid, p. 216). A key element of a community of learners is the construction of new artefacts and tools that support the development of the group.

We will present two examples from practice that both could be called ‘communities of learners’ although they differ seriously. First we will present the Yummy Yummy Case, where students write, do research, are readers, present research, present good texts and revise their first versions. Then we will present the Care & Welfare Case, where students prepare texts for a real audience: students from secondary vocation education prepare a text to read and present for Kindergarten pupils. In the first case, all students act as writers and revisers, while some of them are ‘readers’, and the other half as ‘researchers’. In the second case, students observe targeted behaviour (reading stories to younger children) and help each other to test written stories on usability.

## 2.2 Community of learners in a language class: Yummy Yummy Case

As an example of how the roles of writers, readers and observers can be established and distributed in writing classes, we show in the vignette below The Yummy Yummy Case. A series of lessons were designed to test the practical relevance of the Student-as-learner participation model (see Figure 2, above). We call this the Yummy Yummy case, called after the central element, Yummy Yummy candy bars.

The lesson series aimed at learning-to-write, stressing the acquisition of pragmalinguistic knowledge and answering the question of what makes text effective. The teacher/researcher<sup>3</sup> developed lessons in which young students themselves investigated qualities of texts in order to come to possess this genre knowledge and, in doing so, learn how to acquire this knowledge. The teacher avoided the knowledge transmission model, and instead focused on students’ already available but mostly implicit knowledge. In this lesson series, the teacher tried to cover all roles from our student-participation model: students as participants in communication (writers and readers) and students as researchers (observers).

The lesson series consisted of four lessons of 45 minutes each. Participants were students in grade 7, the first grade of secondary education of 12 to 13 years old. Video clips of the lessons can be seen at our website<sup>4</sup>

### **Writing an argumentative letter (computer room). Role: Writers!**

In lesson 1, the teacher presented the case to all students and subsequently, students wrote their letters in the computer room. The students received the following instruction:

---

<sup>3</sup> Teacher was Martine Braaksma, who graduated as PhD on studies about Observational learning in writing (Braaksma, 2002). She combined a postdoc research appointment at the Graduate School of Teaching and Learning of the University of Amsterdam with an appointment as full licensed teacher at a school for secondary education, Pieter Nieuwland College in Amsterdam.

<sup>4</sup> <http://www.ilo.uva.nl/Projecten/Gert/Presentations/webpresentations.htm>

Monday, April 7th 20..

Task: writing a convincing letter, version 1

Imagine:

You are a real fan of the Yummy Yummy Candy Bars. One day you read the following advertisement:

Save up for two free movie tickets!

How to get them:

On the wrapper of each Yummy Yummy Candy Bar you will find 1 saving point. Save 10 points. Send the points in an envelope to Yummy Yummy Saving Action, PO Box 3333, 1273 KB Etten-Leur, the Netherlands.

Include a stamp of 39 cents for the mailing costs. Mention clearly your name, address, residential town, and zip code. The two free (FREE!) movie tickets will be sent as soon as possible to your address.

This offer ends on April 15th 20...

Communicative situation

It is April 7th. Now you have saved 8 points. Nearly all 10 points required! But you cannot find any more Yummy Yummy Bars with points on the wrapper, although it isn't April 15th yet. You tried different shops. Strange! So it seems you can't collect 10 points! But you still want to get the two free movie tickets. Therefore you decide to send your 8 points and two Yummy Yummy wrappers without points.

Write a letter that you send with the 8 points and the wrappers. Explain why you cannot send 10 points. Convince the Yummy Yummy Company that it isn't your fault that you didn't collect 10 points and that you still want to receive the two movie tickets. Be sure they will send you the tickets! Then address the envelope.

Note:

This first version of your letter will be put in your port folio.

Save your letter on a disk.

Print your letter and hand it in to me.

Give me the envelope too.

Send your letter to [teacher's email address] (or give me your disk.)

### **Board Meeting Yummy Yummy Candy Bars. Roles: Readers and Researchers**

In lesson 2, the teacher divided the class into four groups of four to five students. Two groups were Managers (Readers, Learners), two groups Researchers (Learners).

Group A, C: Management board. The task of the board was to select two out of nine letters that would win the movie tickets. Selection had to be done, because just two pairs of tickets are left in stock....

Parallel: Group B, D: Researchers. The task of the researchers was to study the arguments and the criteria the management board used during the board meeting when selecting the letters. Group B observed the discussion of Group A, Group D observed group C.

### **Poster composition and presentation. Roles: Learners**

Lesson 3 consisted of three parts. First phase aimed at inquiry. The students from the research group worked on listing the criteria of the Yummy Yummy Candy Bars board and wrote them on a poster. At the same time, the Yummy Yummy board group composed a letter to children who didn't win the cinema tickets. The second phase aimed at sharing information. The two Research teams (group B, D) presented a poster with criteria the management board discussed and used. Then, in phase 3, there were presentations: the chair persons of the management team (group B, D) presented the two selected letters, referring to the poster when qualities of the letter were mentioned.

### **Rewriting/revision original letter (computer room) and evaluation. Roles: Writers and Learners**

In lesson 4, the students revised or rewrote their original letter in the computer room and evaluated on paper the lessons.

The teacher put much effort into the design of the lessons (work sheets, task sheets), but during the lessons, she confined to the role of organizer and stimulator. Lesson 4 was a lively rewriting and revising lesson and the students were clearly very motivated to improve their letters. They evaluated the lessons very positively with a mean score 8 out of ten. Revised letters showed improvements, especially in the domain of rhetoric. Children in de Research Team improved more than children in the Board Team (Effect size 1.30 versus .30; Rijlaarsdam & Braaksma, 2004).

The Yummy Yummy case shows that students are able to create their own frame of reference of what a letter of complaint should include: the posters made by the research teams each contained about ten items, representing at least 80 per cent of the criteria used in the board discussion. Students collected their own 'real' data, although the board meeting was set up as a simulation. The awareness about what works in communication was expressed in the board discussions, studied and fed back to the whole group via research presentations. Sharing and constructing communicative awareness, as a group, and in a group, led to ownership of the criteria for a good text, which stimulated children to revise their texts; they experienced that texts were improvable.

### **2.3 Communities of learners: Meeting the real audience**

The Yummy Yummy case demonstrates that it is possible in language classes to create communicative tasks, and to distribute writer, reader and observer roles, when readers are 'simulated' authentic readers, as has been advocated for a long time (Moffett, 1968). The key feature of the Yummy Yummy lessons is that students are motivated to think about what works in a text, to raise awareness about quality of communication, about rhetorical strategies. The readers and the researchers both experience their task as a meaningful learning task that inspires and stimulates genuine dialogue about relevant content. The whole case floats on the letter of complaint, in a setting that suits students

of this age quite well. In the Yummy Yummy case, the relevant content consisted of criteria for a good letter of complaint. Here, the learning content stems from the aims of the language curriculum ('letter of complaint'). The topic of writing is not related to the language curriculum: the Yummy Yummy case is just construed to motivate learners of this age.

In this respect, the language curriculum is 'content free'. All kinds of topics can be chosen, as long as these topics serve the language curriculum content. This freedom of content stimulates teachers to search for relevant contents, to hit two flies in one shot: improving language arts, and improving topic knowledge. Graham and Perin (2007) distinguish three 'formats': (1) an applied academics format, in which the language arts teacher uses subject matter from school, such as science or social studies, as the content of writing instruction), (2) an infused content format, in which a content-area teacher teaches writing skills in the course of teaching subject matter, and (3) the learning community format, in which writing instruction and content instruction are systematically connected by both the language arts teacher and the content-area teacher). "The effectiveness of these various formats has been neither tested nor compared one to another." (Graham & Perin 2007, p. 469).

In this section, we would like to present an example from practice in which content teachers – pre-vocational education – and language arts teachers cooperatively create a motivating and stimulating writing lesson series, in which the writer, reader and learner roles (figure 2) are distributed.

Anne Toorenaar started to test the learning community format in a four year study on communities of learners inspired by Brown and Campioni (1994), Cobb and Yackel (1996), and Wells (2000) for students in pre-vocational education (Toorenaar & Rijlaarsdam (2005a, 2005b). Together with vocational teachers in the vocational domain of 'Care and Welfare' and language teachers Toorenaar iteratively designed several instructional units, and tested them in practice<sup>5</sup>. Students from 'Care and Welfare' learnt to work and communicate with different target groups, such as elderly people, young children or mentally handicapped persons. Normally they learnt these issues from the text book (text and questions about the texts). In the community of learners' lesson format, the students indeed met these target groups, and prepared the meetings in the lessons. One example may illustrate this format. One of the designed instructional units focused on the target group of young children. Together with primary school teachers, teachers arranged an 'activity-morning' in primary school wherein ninth-grade students, as 'real' professionals, guided the young children. Three weeks preceding those activities in the primary school, teachers and students cooperatively designed several activities during the vocational and language classes. Students participated and collaborated in design groups of three or four peers. During language arts classes, design groups turned into author groups. Students collaboratively wrote,

---

<sup>5</sup> Two language teachers and two teachers in the vocational domain were set from lessons for one day a week to prepare experimental lesson series.

illustrated and published a book for the children in primary school. Each author group took responsibility for one of the stories in the book. This lesson format was tested in two sequential years, 2006 and 2007.

In their 2006 and 2007 design language teachers primarily focused on the social aspects of writing: the relationship between writers and their real audience, and the authentic purpose and context of writing. In the 2006 design students generated ideas and content for their stories through interactive classroom dialogues guided by the teacher. The teacher read aloud different kinds of stories, followed by a discussion of the possible reactions from the primary school children (e.g. questions such as 'Would they like this story?', 'Why would they like this story?'). Elaborating their ideas and content in a written story, author-groups continued this discussion in peer-to-peer interaction (e.g. students sharing their own history as a listener of stories being read to them when they were little themselves). In this way students took the opportunity to understand and internalize the perspective and characteristics of their specific audience, thereby laying the foundation for developing dialogical skills that support text production, transformation and revision (Englert et al., 2006). However, teachers experienced that the collaborative writing processes of author groups and the written stories varied strongly in quality. In a joint evaluation of researcher and teachers, in the 2007 design two pedagogical changes were made. First, author groups watched video fragments of their peers (students involved in the 2006 design) performing their read-aloud story in primary school. In this way students would have a clear picture of their real audience, and their authentic purpose and context of writing. In addition each author group interviewed a peer about their writing and reading aloud experience of last year. Second, each author-group thought of a main character, events and an environment/surrounding for a story and presented their ideas for all other author groups. By means of a whole classroom discussion, guided by the teacher, students collaboratively choose the best character, events and environment/surrounding for their joint picture book. Each author group elaborated this idea into their own story. In both the 2006 and 2007 design, author-groups pre-tested their story by reading it aloud for peers. Peers commented on the quality of the story itself (appropriateness for target group) and on the read-aloud-session as such (audibility, voice variation). In addition they provided with suggestions how to improve the story and read aloud skills. In the end, the stories were read aloud during the activity morning with the young pupils in the primary school. A jury of independent professional primary school teachers (teaching the target group of 6 and 7 years old children) assessed all read-aloud stories (separately). All professionals valued the 2007 stories better/more as read-aloud stories for their pupils.

This example shows how students can be involved in various ways in each others learning on writing and the school subject: they are writers, simulate readers, they observe the execution of the target task (observe other students from video reading a story to small children). A genuine writing task leads to genuine processes of talk about

good texts, readers, communicative situations (reading this text for young children to entertain them).

### 3. Research bases

In this section we discuss research that may inspire and substantiate proposals for implementing observation as a learning activity in writing lessons as it inspired the cases we presented in section 2. In the Yummy Yummy Case for instance, some writers turned into readers while other writers turned into researchers who observed and analyzed readers. Students learning depended completely on the engagement and involvement of peer students, in various roles. From the studies presented in section 3.1 and 3.2. it might become clear that creating “researchers” who study “readers” is inspired by research results.

The second case we presented above, the Childrens’ Books Case, showed that a real communicative event can motivate students, but that in addition the interaction between peers that helps these students must be designed carefully to build up text quality awareness and reader awareness. Major tasks here were to build a clear idea of the final task and its features (task representation) by observing variations of target situations and getting information from students who had some experience with this task, and to discuss the usability of the prepared text to read aloud for young children. In section 3.3. we will deal with some studies on this perspective on observational learning.

First, we will discuss studies that show that observation and evaluation of writing strategies can help students to improve their writing skill, even without writing themselves (3.1). Students function as ‘models to study’ for their peers and therefore as data upon they could construct their knowledge basis for procedural facilitation to support their cognitive performance (see Englert et al. (2006) second tenet of communities of learners principle in section 2.1). In addition, there are indications from research that observation as learning activity can have a strong transfer effect on reading (3.2). In section 3.3 we will present studies in which students observe readers.

#### 3.1 Observing writing strategies

In this section, we focus on studies in which students learn from observing other students who are dealing with learning-to-write and learning-to-read tasks. Input for observation are the writing or reading processes of peers.

Within the field of referential communication, Sonnenschein and Whitehurst (1984) demonstrated the effect of observing and evaluating communication on the acquisition of communication skills. During the 1960s, in the domain of social cognition, Albert Bandura developed a learning theory in which vicarious learning or observational learning is an important element. Two of his followers, Dale Schunk and Barry Zimmerman, elaborated his theory of observational learning and applied it to the broader cognitive domain, for example, to writing (Schunk, 2000, 2003). An illustrative

study is Zimmerman and Kitsantas (2002) which was based on Schunk and Zimmerman's social model of sequential skill acquisition (Schunk & Zimmerman, 1997; 2007; Zimmerman, 2000). This model claims that the optimal acquisition of new writing skills takes place through four sequential levels: (i) vicarious observation of actions, considerations and consequences (modelling), followed by (ii) emulation (enacting), (iii) self-directed practice and (iv) self-regulated learning (adapting performance to task conditions, internal and external).

The authors studied the separate effects of the modelling and the practising level on complex sentence combining (Zimmerman & Kitsantas, 2002). Students were asked to combine single kernel sentences into one coherent non-repetitive sentence. A five-step solution strategy was presented on a written handout (*ibid.* p. 662): (a) circle all of the words standing for new ideas in each sentence, (b) cross out the words that refer to the same thing, (c) combine all of the circled words into written phrases about the same thing, (d) number the phrases in order of importance, and (e) build the final sentence around the most important phrases and insert less important phrases where they belong using connecting words, such as 'but' 'and', 'although' and 'because'.

In the observation (modelling) phase three conditions were distinguished. In the no model condition, students were confronted with nine problems on an overhead projector, and were asked to solve them by themselves. In the mastery model condition, the participants observed an experimenter on the overhead projector solving the nine problems without errors. In the coping model condition, the participants observed an experimenter solving the same nine problems, making errors in the beginning but gradually reducing the number of errors. The results showed that observing a model resulted in far better performance than when students studied the problems themselves. The students who observed a coping model outperformed those who observed a mastery model. The input for learning, i.e., the criteria for good performance, was the sentence combining strategy.

Positive effects of the observation of peer models on students' writing were reported by Raedts, Rijlaarsdam, Van Waes, and Daems (2007). In this study, a demanding, complex task was used; writing up a synthesis text of research articles based on information provided on index cards. Participants were undergraduate students who were either allocated to the control group or to the experimental group. Control group students practiced the new writing task by doing short writing exercises. Students in the experimental group observed pairs of video-based peer models performing the final exercise of the control group under think aloud conditions. The video course consisted of six instructional videos which dealt with different aspects of the writing task, such as selecting information on the index cards, comparing research results, integrating a quote or paraphrase in the body of the text, and revising the first draft. After each observation task students were asked to identify the weaker and the stronger writer in the video. Then, they had to choose one model and elaborate on his/her task approach and the quality of the written text.

This study contributed to the theory by including two measures: accuracy of self-efficacy beliefs and task knowledge. The results demonstrated that observational learning had a positive effect on students' writing performances ( $ES = .44$ ). The experimental group linked the source material more often, and wrote better organized summaries compared to the students in the control group. Students in the experimental group also turned out to have more accurate self-efficacy beliefs – that is, their self-efficacy scores were closer to the actual writing performance scores – as a result of the intervention ( $ES = .40$ ). Students in the control condition were biased toward overestimation. Finally, Raedts et al. found that observational learning contributed to students' knowledge of effective pre-writing strategies. Students in the experimental condition could describe in more detail which actions should be undertaken to identify and rearrange the information on the index cards ( $ES = .59$ ) and how the content and structure of the text should be planned ( $ES = .64$ ). In secondary analyses, Raedts (2008) examined interaction effects between levels of aptitude and learning condition. For students with relatively low scores on a cognitive test, no effect of condition was observed, while for the students with mid and high aptitude, the effect sizes were .72 and .96 respectively. In other words, the more able students profited more from learning by observation than the less able students for whom no effect was observed.

Braaksma and her colleagues contributed to the theory by manipulating the observation task and by including the writing process as output or as intermediate variable (Braaksma, Rijlaarsdam, & Van den Bergh, 2002; Braaksma, Rijlaarsdam, Van den Bergh, & Van Hout-Wolters, 2004). Braaksma et al. (2002) manipulated the observation task in such a way that all students observed the same pairs of peer models performing writing tasks, but were instructed by means of answering evaluative and reflective questions to focus their observations on the weaker model of the pair (observation weak focus) or on the better model of the pair (observation good focus). With these specific instructions, the effects of similarity in competence between model and observer on the effectiveness of observational learning in writing could be studied. In an experimental study (pretest-posttest control group design), participants (eighth grade, mixed ability) were assigned to one of three conditions: an observation weak focus, an observation good focus, or a control condition. As described, students in the two observational-learning conditions observed pairs of peer models performing writing tasks. Participants focused both on the non-competent (weak) model and the competent (good) model. In the control condition, students performed the writing tasks themselves. To examine the effects of the familiarity with the task (new tasks versus familiar tasks), there were two instruction sessions in which students learned by observation or by performing tasks.

For both instruction sessions, results were consistent with the “similarity hypothesis”: weak learners learned more from focusing their observations on weak models, while better learners learned more from focusing on good models. Furthermore, results after instruction session 1 (when the task was new for the students) showed that weak students benefited more from observational learning (focusing on



weak models) than by performing writing tasks. It was assumed that they profited from observational learning because their cognitive effort was shifted from executing writing tasks to learning from writing processes of others. They could thus focus on the learning task, to acquire new understanding about writing without having to write themselves. Good students benefited not only from observational learning (focusing on good models) but also from performing writing tasks. They were probably able to divide their attention between writing task and learning task, and could thus generate enough input for their learning by evaluating their own performance. Instruction session 2 showed that weak participants benefited similarly from performing writing tasks and from observing weak models' writing. Possibly, familiarity with the task played a role here. They had already experienced successes with the tasks and they were able to build a knowledge base about good writing. As a result, they became better equipped to execute the writing task themselves. After instruction session 2, good students benefited only from observational learning with the focus on good models and not from focusing on weak models or from performing the writing task themselves. Apparently, they needed the challenge of reflecting on the better model and explaining why the better model performed well.

In another experimental study, Braaksma et al. (2004) included the writing process as intermediate variable and examined why observational learning affects learning outcomes of new writing tasks positively. The study focused on the effects of observational learning on the temporal organization (i.e., orchestration) of writing processes and on the subsequent influence on text quality. An experiment was set up in which 14 year old students were assigned to one of two observational-learning conditions or a control condition. In the observational-learning conditions participants learned by observing peer models' writing processes, in the control condition they learned by performing writing tasks. To measure the orchestration of writing processes, the participants performed post-test writing tasks under think-aloud conditions. The quality of the post-test writing products was also assessed.

Results showed that observational learning affected writing processes differently than the control condition. Writers who learned by observation performed more high-level processes such as planning. Furthermore, for some activities these writers showed a changing pattern of execution over time, whereas writers in the control condition performed these activities at a constant rate during the writing process. Finally, Braaksma et al. (2004) showed that the orchestration performed by the students who learned by observation was positively related to the quality of the writing product.

Van Steendam, Rijlaarsdam & Sercu (2006; 2007, 2008a, 2008b) studied the effect of strategy instruction with video observation on quality of revision and writing in English as a foreign language with undergraduate students of Business Communication. The instructed strategy was an expert revision strategy, which was implemented in a quasi-experimental study. The study was a pre-test post-test factorial design with five different conditions which varied in the degree of instruction. In four conditions students revised peers' texts in a dyad and in a final comparison group

students revised individually. This enabled Van Steendam et al. to study both the effect of instruction and the effect of collaboration in revision vs. individual revision. In a video condition, learners first observed a mastery dyad apply the revision strategy to the content and structure of a peer's text, after which they themselves had to emulate the strategy in a collaborative revision task. During the observation task, learners were asked to pay attention to the different steps expert revisers take when revising a text for coherence, and to take note of the different revision possibilities the two expert pair members suggested (and made) to remedy particular structural and content problems.

Salient results were interactions between learner characteristics and the learning condition. As far as revision quality is concerned, weak readers benefited from observational learning, whereas strong readers and writers were better off in a more traditional practising condition without instruction. Relatively weak readers and writers detected and revised more higher-order problems in the video condition and made qualitatively better revisions. For strong readers and writers, watching one video in which a mastery dyad modelled the revision strategy may not have been sufficient to convince them to change their revision strategy and reading behaviour (Van Steendam, Sercu, & Rijlaarsdam, 2008a, 2008b). However, when looking at transfer from revising a peer's text to writing one's own text several weeks later, after students had watched more than one video (also mastery models), the video condition turned out to be the most rewarding condition for the strong learners. They seemed to have internalised the strategy and applied it to their own writing (Van Steendam, Rijlaarsdam, Sercu, 2008a, 2008b). These results confirm findings of Braaksma et al. (2002) and Raedts (2008) and illustrate the added value of observation for collaborative revision.

### **3.2 Observation of writing strategies: Intermodal transfer**

Couzijn (1999) tested the effect of vicarious learning or observation in a four hour course on argumentative writing and reading. The Sonnenschein and Whitehurst studies (1984), mentioned in section 3.1, had shown that observation activities induced intermodal transfer. Couzijn's students (14- to 15-years old) observed and evaluated learners performing complex reading or writing tasks. The observed models were peers, with natural and varying levels of expertise, videotaped during their coping with learning-to-write or learning-to-read exercises. The learning sequence was deductive in that students read some theory about reading or writing strategies and answered one or two questions to check their understanding. Next they observed, compared, and evaluated the learning behaviour of two peers executing the strategy in different ways, and then moved on to the next exercise or to another strategy. Each of the four lessons on argumentative writing was devoted to a particular content, such as "argumentative texts as dialogical texts", "patterns of argumentation" (subordinated or co-ordinated arguments), and "rhetorical devices in argumentative texts" (reader oriented elements in the introduction and closing part).

In the traditional conditions, students read the same theory about reading or writing strategies, answered the same questions to check their understanding, and then applied

the theory in short writing tasks or reading tasks. In the experimental conditions, students did not execute these exercises themselves, but observed, on video, how two peers performed such a writing or reading task. They had to indicate which of the two peers performed better as well as provide a reason for their decision.

It turned out that observing learning processes in reading or writing resulted in larger learning gains than performing reading or writing exercises yourself. Observing writing had an effect size of .78 compared to the traditional writing condition. The effect size for observing reading was 1.00. The transfer effect of observing writers-at-work to reading skill was large (.92) and much higher than transfer from observing readers-at-work to writing skill. It also indicates that observing learners performing writing tasks may have a larger effect on reading skill than actually performing such reading tasks. As in the Sonnenschein and Whitehurst experiments, meta-knowledge about good communication can be induced from observing and commenting in one mode that is transferrable to the other mode not by training in that specific mode but by observation and evaluation activities.

### 3.3 Observing readers

One of the problems for writers is that writing is a communicative act. Writers do not only have to juggle all kinds of cognitive activities such as generating, revising, formulating, structuring, they also have to juggle at least three representations: the communicative intent, the actual text produced so far, and the reader's perspective. A writer must coordinate two representations of the text, the communicative intent (what do I want to say?) and the representation of the actual text produced (what have I written?). Both representations interact, that is, the intended text guides the composition of the actual text, and the actual text and its composing process may take the writer on unexpected tracks of thoughts, reasons, arguments, and renewed intentions. In addition, writers must consider for whom the writing is intended as well as the whole context of the writing. This social task requires that writers construe a third representation of the text, the reader's perspective (how will the reader interpret my writing?). This representation is often incomplete or lacking altogether. As Moffett (1968: 195) noted: one of the major problems for writers is their "egocentric position".

Experiencing problems as a reader may motivate to write better. When Vernon, Alvarado, and Zermeño (2005), for instance, introduced punctuation for young students, the authors realized that learning to punctuate accurately assumes knowledge of the writing system and awareness of the units, which is lacking at that early moment. Then they decided to raise this awareness by having students read badly punctuated texts, which caused interpretation problems and much discussion between students. The need to punctuate correctly was inspired by having been in the role of the reader.

This principle was explored by Holliway and McCutchen (Holliway, 2000; Holliway & McCutchen, 2004). Would young writers from grade 5 and 7 benefit from learning to read as their readers? Writers participated in three 30- to 45-minute writing sessions. In the first session, all writers were asked to describe three Tangram figures. In

the second session each writer received a typed version of the descriptions they composed in the first session. Writers were randomly assigned to one of three perspective-taking conditions: 1) feedback-only, 2) feedback and rating, and 3) feedback and read-as-the-reader. In all three conditions writers received a one-sentence written feedback on their description, saying whether the text was successful in unambiguously describing the Tangram figure. In the condition feedback only, students were asked to revise their original descriptions. In the condition feedback and rating, writers also received three descriptions written by other students, rated the descriptions on informational adequacy, and wrote one sentence to the writer about what could be improved. They then revised their own descriptions. In the third condition, feedback and read-as-the-reader, writers were asked to read three descriptions written by other students and match descriptions with Tangram figures. Then writers revised their own original descriptions.

In the third writing session, writers were post-tested. They composed descriptions for Tangrams they had not previously seen. Each set contained three separate groups of four similar looking Tangrams. Each group contained one "Targetgram" and three distracters.

For both grades, the read-as-the-reader condition gained significantly in revising their Tangram descriptions (second session) and writing descriptions for a new set of Tangrams. This led to the conclusion that perspective-taking supports the development of referential writing ability.

The rating condition, which is more or less similar to regular peer feedback conditions, did not work well. Rating texts for adequacy did not lead to an improvement of writing skill, except for new tasks (session 3) in grade five. Possibly, students in the rating condition lacked a frame of reference to evaluate adequacy, while in the condition read-as-the-reader, students compared a written description with the object and the distracters, and then had to construct a frame of reference themselves: 'Which quality in the text enables me to match a particular figure?'

Holliday's study shows that minimal instruction can be sufficient to improve referential writing skill. If students experience the role of a reader as a post-writing activity, with texts similar to a text they have written before, a "theory of text" may emerge. Experiencing the reader role is the decisive element, as students experience how the text really "works" when a reader uses the information in it. In this study a realistic writer-reader experience was created, as Moffett (1968) argued for, in which the reader had to use the text and not just read (and rate) it from a distant, non-participant role. This probably gave way to students developing ideas about "what works" in this type of communication, and these ideas were successfully transferred to their own writing.

Experiencing the problems of a reader may help to understand how reading works, and how your text may help or hinder reading (Crasnick & Lumbelli, 2004). Lumbelli and Paoletti (2004) provided learners with audio-tapes, containing experts' spontaneous comprehension processes of target texts that contained all the flaws and

redundancies of oral language. The expert reader's uncertainty had been fully verbalised, so that uncertainty about the possible different interpretations of the same passage could be traced back to uncertainty about which processes would most adequately integrate the explicit information, as read and decoded (Lumbelli & Paoletti, 2005). A similar procedure was implemented by Gárate and Melero (2004) who taught 11-year-olds to use counter argumentation in argumentative writing by using the modelling technique carried out by an expert. In these studies, as in the strategy training studies by Graham and Harris (2003) students observed the reading behavior of adults.

A pedagogy where students observed peers instead of adults was tested by Couzijn (Couzijn, 1995; Rijlaarsdam, Couzijn, Janssen, Braaksma, & Kieft, 2006). He examined the effects of student-writers being confronted with real readers and, in particular, whether children develop knowledge about effective communication by experiencing how readers deal with texts. Couzijn focused on a particular text type with a strong and overt communicative effect: a manual for a simple physics experiment. Children first learned to perform this experiment, then they wrote a manual for their class-mates, and finally they experienced the effect of the written manual on classroom peers who used it. First, Couzijn taught the children individually how to perform the physics experiment. He showed students the experiment by means of some illustrations, step by step, and added the physical explanations. He coached the students to do the experiment unassisted, until they understood what it was about and were able to carry out the experiment flawlessly. Then, the students were asked to write a manual for classroom peers. The manual should be so clear that the reader could perform the experiment perfectly as well as understand its purpose.

In the second stage, the written manuals served as input for other students who were asked to perform the experiment using a student manual and while thinking aloud. Their performances were videotaped. Three weeks after the initial writing session, the writers were shown two of their readers on video. Some writers observed the readers of their own text, while others were confronted with readers of texts written by other writers. Some students had access to written comments by readers, others did not receive this extra support. Then, the student received his or her original text, with the request to rewrite or revise it.

In this experiment, all three reader-observation conditions scored significantly better than a control group who had revised their texts without reader observation. The revised manuals showed many improvements from the first version. For the conditions "observing one's own reader", "observing one's own reader plus written comments", and "observing someone else's reader", the effect sizes were 1.74, 2.56 and .47 respectively. For teaching practice, this would mean that after a class has written a certain communicative text, simply showing one or two readers on video would stimulate the revision phase strongly. In a similar study, with another physics experiment, now in primary education (grade 8), De Jong (2006) found effect sizes for

second revisions after explicit prompting and after observing readers of respectively 1.49 and 2.0, with an effect size of the experimental condition of .96.

In education, however, we want to accomplish more; we strive for generalization of experiences and transfer to other tasks. Therefore, Couzijn asked participants three weeks later to write a “letter of advice” to a new classroom mate, about how one should write a manual. In this way the students’ knowledge about the manual as communicative text type was assessed, as a prerequisite for transfer to similar manual-writing tasks. Students from the “observing one’s own reader plus written comments” condition produced many more pieces of advice than students from the other conditions ( $ES = 2.33$ ).

Couzijn and Rijlaarsdam (1996) concluded that simply adding a revision task does not work, that observing readers before revising your own text improves the revision significantly, and that observing your own readers after having written your first draft helps even more. Furthermore, processing external feedback (written comments) enhances students’ construction of transferable knowledge (see also Rijlaarsdam et al., 2004).

These results indicate that in some instances, young writers are capable of constructing knowledge about what a good text entails. Without much help or instruction, they can build a set of criteria for a good text from observing what readers are doing and thinking while trying to comprehend the text. They are able to do this and to apply the criteria in their revisions. For the constructed knowledge to become durable and transferable, some reflective activities appear to be necessary. Finally, observing reading processes may be an effective learning activity for other genres as well.

#### **4. Observation of writers and readers in writing education: The future**

In section 3 we focussed on observational learning in two broad categories of studies. First we presented studies in which students acquired strategies by watching and evaluating processes of other writers or readers, as a vicarious writing activity that replaces the exercise in writing or reading itself. Then we presented studies in which learners were stimulated to revise their own texts, after having “pre-tested” their first drafts, as a post-writing instructional activity. In both categories, we focussed on the role of peers instead of teachers, on observing instead of modelling, and on learning instead of instruction. These restrictions leave much research aside. Many of the intervention studies aimed at strategy instruction, the most effective category of interventions in the Graham and Perin (2007) meta-analysis, combine all kinds of learning and instructional activities, including observation and modelling. Studies by García-Sánchez and Fidalgo-Redondo (2006) and Torrance, Fidalgo, and García (2007), for instance, show positive effects of instructional interventions in which “observation of writers at work” played a central role. During the interventions,

instructors and/or peers modeled the writing process by thinking aloud. These studies show that students' writing processes changed and that text quality improved.

For future research, we would like to make four recommendations. First, we strongly recommend for future intervention studies to isolate the effects of key elements in the intervention. Although arrangements of various learning activities will work best in practice, from a research point of view, studying effects of separate learning activities is necessary, in order to improve insight in what contributes to learning-to-write. This insight might result from a strict research design, as in the studies by Zimmerman and Kitsantas (2002) or by Braaksma, Rijlaarsdam and Van den Bergh (2002). It might also result in multiple measurements during the intervention, or in the use of written-text-so-far as measurement. Multiple measurements as such strengthen the research design, for example, time-series design that will increase power without increasing the number of participants. Insight might also result from post-hoc analysis, by analyzing the intervention materials and the effect on the output variable, as demonstrated by Braaksma, Van den Bergh, Rijlaarsdam and Couzijn (2001).

A second recommendation is to study the relation between learner characteristics and learning activities. Most studies on strategy training in writing focus on main effects, irrespective of students' individual differences. Meta-analyses do not report interaction effects. At least two types of individual differences are of interest when applying observational learning in school practice. Galbraith (1996) reported a strong interaction effect on the discovery of ideas between self-monitoring and mode of writing. High self-monitors (writers who are strongly directed towards rhetorical goals) tended to discover new ideas by making notes, but not by writing full text. Low self-monitors (directed towards dispositional goals, i.e. spelling out spontaneously expressed thought) tended to discover new ideas by writing full text, but not by making notes. Based on this difference, Galbraith (1999) outlined a dual process model of writing suggesting that both dispositionally guided text production (as prioritised by low self-monitors) and rhetorical planning (as prioritised by high self-monitors) are necessary for effective writing. We hypothesize that low and high monitoring students may benefit differently from observational learning tasks. High self-monitors, by nature more focused on rhetorical aspects of writing, may benefit from feedback on the content of their text, thus from observations of learners coping with content problems. Low self-monitors, by nature more focused on the suitability or originality of text content, may benefit more from feedback about the rhetorical attractiveness of their texts. Their learning may be enhanced by observation of learners coping with rhetorical problems in their texts.

Kieft, Rijlaarsdam, and Van den Bergh (2008) found an interaction between writing preferences and writing instruction, in the field of literature education. Students with a strong writing preference (planning or revising) learnt more from a writing course that was adapted to their writing preference. Consequently, adaptation of observational learning tasks to students' writing preference may be a useful idea as well. Students

with a planning preference might benefit from observational learning tasks providing feedback on planning problems, while students with a revising preference may be better off receiving feedback on their first draft in full text, observations of real readers or observations of writing students coping with particular revision problems. Studying the interactions between learner characteristics and learning activities will help to frame the theory of effective writing instruction.

In addition, we would propose to study minimal instructional variations in observational learning activities in relation to learner characteristics (Braaksma et al., 2002). Some sequences of activities appear to be more effective for some students while other arrangements are more effective for other students. Familiarity with the task, observation with/without evaluation, with/without consolidation, type of comparison (focussing on the better or the weaker “model”) appear to be relevant (see Braaksma, et al. 2002, and Raedts et al., 2007).

A third recommendation is to include process measures as dependent variables in the research design (see Braaksma et al., 2004, using think aloud techniques; Torrance, Fidalgo, and García (2007), using a very efficient self report technique). Adding these measures into the research design is advantageous in two respects: (1) it helps to see which type of cognitive processes are affected by the intervention, and (2) it makes it possible to relate final text quality to processes, which contributes to insight in effective writing processes (Rijlaarsdam & Van den Bergh, 2006).

A last recommendation is to study the effect of observational learning in writing-to-learn interventions. Since the effects of writing-to-learn are rather small (Bangert-Drowns, Hurley, & Wilkinson, 2004), it might be designated to add instructional devices such as observational learning in writing-to-learn lessons and to test its effects.

For practice in writing education, we recommend creating learning environments in which all components of the student participation model (Figure 2) are implemented. Creating environments where students can do some research to explore how texts work in readers, how writers cope with difficulties. Nowadays information technology has made it easier to visualize writing processes (screen recording, keystroke logging) and reading processes (screen recordings). It is possible to collect these processes in classrooms, and to use them for subsequent instructional purposes. When creating lessons or studies involving observational learning activities, information technology can be of great help (see Appendix). For instance, information technology can help to separate the act of writing and the act of reflection. Lindgren (2004) used the technology of keystroke logging for this reason. Students (13 years old) wrote texts using a word processor, while a keystroke logging programme was running. Later, the process was played back, for the author and for a peer. The peer took on the role of the questioner, in fact, being the researcher doing a stimulated recall “why do you pause here?” or “what did you think when you revised this phrase?”. The results indicate that



the method was generally successful for low L1 ability writers, while high L1 ability writers benefited from the treatment in the argumentative assignments. The treatment further raised writers' awareness of content features involved in writing by increased frequency of text-based revisions.

Introducing "pretesting your text and observe readers' responses" in practice could be inspired by all kinds of methods used in the design of business and technical communication. In professional contexts, documents (brochures, web based- and paper form questionnaires, websites) are often pretested. Via various kinds of methods, information is collected about readers' processes, understanding and use of documents. These pre-testing methods can inspire writing educators. Even if students do not design the texts of websites themselves, it is very useful to act as "researcher", studying the quality of a website or written document by studying 'users' (usability testing). Students then simulate research activities that help to understand what works in written communication and what motivates students to improve their texts and to build up genre awareness. There is a rich research literature on usability testing that may inspire writing education. An inspiring book on text design and pre-testing is Schriver (1997). De Jong and Schellens (1997) present a review of the literature on reader-focused text evaluation procedures, discussing methodological strengths and constraints of each method.

To sum up, observation and inquiry are important learning activities in the writing classroom, which stimulate learners' reflection both as writers and as readers. Most importantly, the methods presented here can assist teachers in promoting learners self-assessment skills and life-long learning.

### **Acknowledgements**

This paper is an expanded and revised version of the keynote presented at the international Writing conference Writing Research Across Borders, at the University of California, Santa Barbara (February 22-24, 2008). There is some overlap with Rijlaarsdam, Braaksma, Couzijn, Janssen, Kieft, Broekkamp, & Van den Bergh (2005).

Research reported from Braaksma and Couzijn was funded by grants of the Graduate School of Teaching and Learning Amsterdam; research from Raedts and Van Steendam was funded by resp. Hasselt University Belgium and Antwerp University Belgium; research from Toorenaar is funded by the Netherlands Organisation for Scientific Research.

The authors would like to thank the two reviewers, who critically read a first version, and the editor in chief Luuk van Waes who provided us with useful suggestions. We also thank Eva Lindgren, member of the linguistic editorial team of Journal of Writing Research, who not only edited the text, but also inserted useful comments as a 'pre-test' reader. If there is any error in this text, then it was inserted by the responsible author, when revising the final, already edited text.

## References

- Awramiuk, E. (2002). Mother tongue teaching in Poland; The dynamics of change. *L1 – Educational Studies in Language and Literature*, 2, 165-176. doi: 10.1023/A:1021113206586
- Bangert-Drowns, R.L., Hurley, M.M., & Wilkinson, B. (2004). The effects of school-based writing to learn interventions on academic achievement: A meta-analysis. *Review of Educational Research*, 74(1), 29-58. doi: 10.3102/00346543074001029
- Benson, N.L. (1979). *The effects of peer feedback during the writing process on writing performance, revision behaviour, and attitude toward writing*. Dissertation University of Colorado. Boulder.
- Braaksma, M.A.H. (2002). *Observational learning in argumentative writing*. Unpublished dissertation. University of Amsterdam.
- Braaksma, M. A. H., Rijlaarsdam, G., & Van den Bergh, H., (2002). Observational Learning and the Effects of Model-Observer Similarity. *Journal of Educational Psychology*, 94(2), 405-415. doi: 10.1037/0022-0663.94.2.405
- Braaksma, M.A.H., Rijlaarsdam, G., Van den Bergh, H., & Van Hout-Wolters, B.H.A.M. (2004). Observational learning and its effects on the orchestration of writing processes. *Cognition and Instruction*, 22(1), 1-36. doi: 10.1207/s1532690Xci2201\_1
- Braaksma, M. A. H., Van den Bergh, H., Rijlaarsdam, G., & Couzijn, M. (2001). Effective learning activities in observation tasks when learning to write and read argumentative texts. *European Journal of Psychology of Education*, 16(1), 33-48. doi: 10.1007/BF03172993
- Brown, A.L., & Campioni, J.C. (1994). Guided discovery in a community of learners. In: K. McGilly (Ed.), *Integrating cognitive theory and classroom practice: Classroom lessons* (229-270). Cambridge, MA: MIT Press/Bradford Books.
- Bruffee, K.A. (1980). *A short course in writing. Practical rhetoric for composition courses, writing workshops, and tutor training programs*. Boston: Little, Brown and Company.
- Bruffee, K.A. (1981). The structure of knowledge and the future of liberal education. *Liberal education*, 181-185.
- Bruner, J.S. (1960). *The Process of Education*. Harvard University Press.
- Burt, R.M. (1980). *Effects of an individualized, humanistic program of confluent literature and composition instruction on the writing performance of low ability suburban eleventh grade Eight /high school students*. Dissertation Temple University. UMI 80-25- 181.
- Carter, R. D. (1982, November). *By itself one-shot peer group revision has no power*. Revised version paper delivered at national Council of Teachers of English. Washington. ED 226 350.
- Clifford, J. (1981). Composing in stages: The effects of a collaborative pedagogy. *Research in the teaching of English*, 15, 37-53.
- Cobb, P., & Yackel E. (1996). Constructivist, emergent, and sociocultural perspectives in the context of developmental research. *Educational psychologist*, 31, 175-190. doi: 10.1207/s15326985ep3103&4\_3/doi: 10.1080/00461520.1996.9653265
- Copland, J. B. (1980). *A twelve week study on the effects of peer evaluation for improving narrative writing performance at the eight grade level*. Dissertation Auburn University.
- Couzijn, M. (1995). *Observation of writing and reading activities: Effects on learning and transfer*. Dissertation University of Amsterdam. Dordrecht: Dorfix.
- Couzijn, M. (1999). Learning to write by observation of writing and reading processes: Effects on learning and transfer. *Learning and Instruction*, 9, 109-142. doi: 10.1016/S0959-4752(98)00040-1
- Couzijn, M., & Rijlaarsdam, G. (1996). Learning to write by reader observation and written feedback. In G. Rijlaarsdam, H. van den Bergh & M. Couzijn (Eds.), *Effective teaching and learning of writing. Current trends in research*. (pp. 224-252). Amsterdam: Amsterdam University Press.
- Couzijn, M. & Rijlaarsdam, G. (2004). Learning to read and write argumentative text by observation. In G. Rijlaarsdam, (Series Ed.), & G. Rijlaarsdam, H. Van den Bergh, & M.

- Couzijn (Vol. Eds.), *Studies in writing. Vol. 14. Effective learning and teaching of writing, Part 1, Studies in learning to write* (2nd ed., pp. 241-258). Dordrecht: Kluwer Academic Publishers.
- Crasnich, S. & Lumbelli, L. (2004). Improving argumentative writing by fostering argumentative speech. In G. Rijlaarsdam, (Series Ed.), & G. Rijlaarsdam, H. Van den Bergh, & M. Couzijn (Vol. Eds.), *Studies in writing. Vol. 14. Effective learning and teaching of writing, Part 1, Studies in learning to write* (2nd ed., pp. 181-196). Dordrecht: Kluwer Academic Publishers.
- De Jong, M., & Schellens, P. J. (1997). Reader-focused text evaluation: An overview of goals and methods. *Journal of Business and Technical Communication, 11*, 402-432. doi: 10.1177/1050651997011004003
- De Jong, J. (2006). *Leren-door-Observeren. Een experiment in het basisonderwijs* [Learning through observing. An experiment in primary education]. Master thesis Utrecht University, the Netherlands.
- Degenhart, M. (2006). Camtasia and Catmovie. In L. Van Waes, M. Leijten & C. M. Neuwirth (Vol. Eds.) & G. Rijlaarsdam (Series Ed.), *Studies in Writing. Vol. 17. Writing and digital media* (pp. 180-186). Oxford: Elsevier.
- Delaney, M. C. (1980). A comparison of a student-centered, free writing program with a teacher-centered rhetorical approach to teaching college composition. Dissertation Temple University.
- Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. New York: The Macmillan Company.
- Dewey, J. (1930). *Human nature and conduct*. New York: The Modern Bibliotheca.
- Dixon, J. (1967). Growth through English. *Educational Psychologist, 32*, 195-208.
- Elbow, P. (1974). *Writing without teachers*. New York: Oxford University Press.
- Englert, S., Mariage, T. V., & Dunsmore, K. (2006). Tenets of sociocultural theory in writing instruction research. In Ch. A MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of Writing Research* (pp. 208-221). New York: the Guilford Press.
- Farrell, K.J. (1977). *A comparison of three instructional approaches for teaching written composition to high school juniors: teacher lecture, peer evaluation, and group tutoring*. Dissertation. Boston University.
- Ford, B.W. (1973). *The effects of peer editing/grading on the grammar-usage and theme-composition ability of college freshmen*. Dissertation University of Oklahoma.
- Fox, R.F. (1978). *Treatment of writing apprehension and its effects on composition*. Dissertation University of Missouri-Columbia. UMI 79-15233.
- Gárate, M., & Melero, A. (2004). Teaching how to write argumentative texts at primary school. In G. Rijlaarsdam (Series Ed.) & Rijlaarsdam, G., Van den Bergh, H. & Couzijn, M. (Vol. Eds.), *Studies in writing. Vol. 14, Effective learning and teaching of writing, 2<sup>nd</sup> Edition, Part 2, Studies in how to teach writing*, pp. 323-337
- Galbraith, D. (1996). Self-monitoring, discovery through writing and individual differences in drafting strategy. In G. Rijlaarsdam, H. Van den Bergh, & M. Couzijn (Eds.), *Studies in writing: Vol. 1. Theories, models and methodology in writing research* (pp. 121-144). Amsterdam: Amsterdam University Press.
- Galbraith, D. (1999). Writing as a knowledge-constituting process. In M. Torrance, & D. Galbraith (Eds.), *Studies in writing. Vol. 4. Knowing what to write: Conceptual processes in text production* (pp. 139-160). Amsterdam: Amsterdam University Press.
- García-Sánchez, J.-N., Fidalgo-Redondo, Raquel (2006). Effects of two types of self-regulatory instruction programs on students with learning disabilities in writing products, processes, and self-efficacy. *Learning disability quarterly, 29(3)*, 181-211. doi: 10.2307/30035506
- Geist, U. (2004). Stylistic imitation as a tool in writing pedagogy. In G. Rijlaarsdam, (Series Ed.), & G. Rijlaarsdam, H. Van den Bergh, & M. Couzijn (Vol. Eds.), *Studies in writing. Vol. 14. Effective learning and teaching of writing, Part 1, Studies in learning to write* (2nd ed., pp. 169-180). Dordrecht: Kluwer Academic Publishers.
- Graham, S. & Harris, K.R. (2003). Students with learning disabilities and the process of writing: A meta-analysis of SRS studies. In L. Swanson, K.R. Harris, & S. Graham (Eds.), *Handbook of Research on Learning Disabilities* (pp. 383-402). New York: Guilford.

- Graham, S., & Perin, D. (2007). A meta-analysis of writing instruction for adolescent students. *Journal of Educational Psychology*, 99(3), 445-476. doi: 10.1037/0022-0663.99.3.445
- Halliday, M.A.K. (1973). Language structure and language function. In J. Lyons (ed.), *New horizons in linguistics*. Pp. 140-165. Harmondsworth, England: Penguin books Ltd.
- Hillocks, G. (1986). *Research in written composition: New directions for teaching*. Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills and National Conference on Research in English.
- Holliway, D.R. (2000). It looks like a goose: Composing for the informational needs of readers. *Annual Meeting of the American Educational Research Association*, 1-29.
- Holliway, D.R. (2004). Through the eyes of my reader: A strategy for improving audience perspective in children's descriptive writing. *Journal of Research in Childhood Education*, 18, 334. doi: 10.1080/02568540409595045
- Holliway, D. R. & McCutchen, D. (2004). Audience Perspective in Young Writers Composing and Revising. Reading as the reader. In G. Rijlaarsdam (Series Ed.) and L. Allal, L. Chanquoy, & P. Largy (Vol. Eds.), *Studies in writing. Vol. 13. Revision: Cognitive and instructional processes* (pp. 87 -101). Dordrecht: Kluwer Academic Publishers.
- Hymes, D.H. (1971). *On communicative competence*. Philadelphia: University of Pennsylvania.
- Iser, W. (1978). *The act of reading*. London: Routledge and Kegan Paul.
- Karegianes, M.L., Pascarella, E.T., & Pflaum, S.W. (1980). The effects of peer editing on the writing proficiency of low-achieving tenth grade students. *Journal of Educational research*, 73, 203-207.
- Kieft, M., Rijlaarsdam, G., & Van den Bergh, H. (2008). An aptitude-treatment interaction approach to writing-to-learn. *Learning & Instruction*. 18, 379-390. Doi: 10.1016/j.learninstruc.2007.07.004
- Lindgren, E. (2004). The uptake of peer-based intervention in the writing classroom. In G. Rijlaarsdam, (Series Ed.), & G. Rijlaarsdam, H. Van den Bergh, & M. Couzijn (Vol. Eds.), *Studies in writing. Vol. 14. Effective learning and teaching of writing, Part 1, Studies in learning to write* (2nd ed., pp. 259-274). Dordrecht: Kluwer Academic Publishers.
- Locke, T. (2001). English teaching in New Zealand: In the frame and outside the square. *L1 -- Educational Studies in Language and Literature* 1(2), 135-148. doi: 10.1023/A:1012768217528
- Lumbelli, L. & Paoletti, G. (2004). Monitoring local coherence through bridging integration: From text comprehension to writing revision and planning. In G. Rijlaarsdam, (Series Ed.), & G. Rijlaarsdam, H. Van den Bergh, & M. Couzijn (Vol. Eds.), *Studies in writing. Vol. 14. Effective learning and teaching of writing, Part 1, Studies in learning to write* (2nd ed., pp. 197-208). Dordrecht: Kluwer Academic Publishers.
- Lyons, W. D. (1976). *The effects of teacher-peer response and teacher-only response upon attitudes towards writing, and upon writing performance*. Dissertation University of Missouri-Columbia
- Maize, R.C. (1954). Two methods of teaching English composition to retarded college freshmen. *Journal of educational psychology*, 45, 22-28. doi: 10.1037/h0059985
- Moffett, J. (1968). *Teaching the universe of discourse*. Boston: Houghton Mifflin Company.
- Myers, C. F. (1979). *Teacher and peer evaluative feedback in the development of two composition skills: punctuation and paragraph unity*. Dissertation St. John's University, New York.
- Oostdam, R., & Rijlaarsdam, G. (1995). *Towards strategic language learning*. Amsterdam: Amsterdam University Press. doi: 10.5117/9789053561560
- Pamfil, A. (2007). The paradigms of Romanian language and literature curricula in the second half of the 19th century and the 20th century. *L1 – Educational Studies in Language and Literature*, 7(3), 211-221.
- Papoulia Tzelepi, P. (2001). Continuity and change in language arts textbooks in Greek primary schools. *L1 -- Educational Studies in Language and Literature*, 1(3), 195-207. doi: 10.1023/A:1013827626579
- Pfeifer, J. K. (1981). *The effects of peer evaluation and personality on writing anxiety and writing performance in college freshmen*. Dissertation Texas Tech University.

- Pierson, H. (1967). *Peer and teacher correction: A comparison of the effects of two methods of teaching composition in grade nine English classes*. Dissertation New York University.
- Poyas, Y., & Shalom, T. (2002). Textbooks for the teaching of Hebrew language and literature in Israël; A mirror of socio-political and educational changes. *L1 – Educational Studies in Language and Literature*, 2, 75-94. doi: 10.1023/A:1020800214780
- Raedts, M. (2008). Bandura's sociaal-cognitieve leertheorie als verklaringmodel voor verschillen in schrijffprestaties bij eerstejaarsstudenten. [Bandura's social cognitive learning theory as explanatory model for variation in writing performance in freshmen]. Unpublished PhD dissertation, University of Antwerp.
- Raedts, M., Rijlaarsdam, G., Van Waes, L., & Daems, F. (2007). Observational learning through video-based models: Impact on students' accuracy of self-efficacy beliefs, task knowledge and writing performances. In G. Rijlaarsdam (Series Ed.), & P. Boscolo & S. Hidi (Vol. Eds.), *Studies in Writing. Vol. 19. Writing and Motivation* (pp. 219-238). Oxford: Elsevier.
- Rosenblatt, L. (1938/1999). *Literature as exploration* (5th ed.). New York: The Modern Language Association of America.
- Rijlaarsdam, G., & Braaksma, M. (2004). Students as researchers: defining text quality criteria. *Abstracts Writing 2004. 9<sup>th</sup> International Conference of the EARLI Special Interest Group of Writing*. Geneva. 129.
- Rijlaarsdam, G. & Van den Bergh, H. (2004). Effective learning and teaching of writing: Student involvement in the teaching of writing. In G. Rijlaarsdam, (Series Ed.), & G. Rijlaarsdam, H. Van den Bergh, & M. Couzijn (Vol. Eds.), *Studies in writing. Vol. 14. Effective learning and teaching of writing, Part 1, Studies in learning to write* (2nd ed., pp. 1-16). Dordrecht: Kluwer Academic Publishers.
- Rijlaarsdam, G. (1987, March). *Effects of peer evaluation on writing performance, writing processes, and psychological variables*. Paper presented at the Annual Meeting of the Conference on College Composition and Communication. Atlanta. ED284288.
- Rijlaarsdam, G., & Couzijn, M. (2000). Writing and learning-to-write. A double challenge. In R. Simons, J. Van der Linden & T. Duffy (Eds.), *New Learning* (pp. 157-190). Dordrecht: Kluwer.
- Rijlaarsdam, G., & Van den Bergh, H. (2006). Writing process theory: A functional dynamic approach. In C.A. Macarthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 41-53). New York/London: The Guilford Press.
- Rijlaarsdam, G., Couzijn, M., & Van den Bergh, H. (2004). The study of revision as a writing process and a learning-to-write process. In Rijlaarsdam, G. (Series ed.) & L. Allal, L. Chanquoy, & P. Largy (Eds.), *Studies in Writing. Vol. 13. Revision: Cognitive and Instructional Processes*. (pp. 189-207). Kluwer Academic Publishers.
- Rijlaarsdam, G., Couzijn, M., Janssen, T., Braaksma, M., & Kieft, M. (2006). Writing Experiment Manuals in Science Education: The impact of writing, genre, and audience. *International Journal of Science Education*, 28(2-3), 203-233. doi: 10.1080/09500690500336932
- Rijlaarsdam, G. Braaksma, M., Couzijn, M., Janssen, T., Kieft, M., Broekamp, H. & van den Bergh, H. (2005). Psychology and The teaching of writing in 8000 and some words. In *Pedagogy – Learning for Teaching. BJEP Monograph series II(3)*, 127-153.
- Sager, C. (1972). *Improving the quality of written composition through pupil use of rating scale*. Dissertation Boston University.
- Sager, C. (1973). *Improving the quality of written composition through pupil use of rating scale*. Paper presented at the annual meeting of the national council of teachers in English. ED 089 3041.
- Sawyer, W. (2007). English as Mother tongue in Australia. *L1 – Educational Studies in Language and Literature*, 7(1), 17-90.
- Sawyer, W., & Van den Ven, P.-H. (2007). Starting points. Paradigms in Mother tongue Education. *L1 – Educational Studies in Language and Literature*, 7 (1), 5-20.
- Sawyer, W., & Watson, K. (2001). Mother-tongue teaching in Australia: The case of New South Wales. *L1 -- Educational Studies in Language and Literature*, 1(1), 87-104. doi: 10.1023/A:1011536027121

- Schraver, K. A. (1997). *Dynamics in document design: Creating text for readers*. New York: John Wiley.
- Schunk, D. H. (2000). *Learning theories* (3rd ed.). Upper Saddle River, NJ: Prentice-Hall.
- Schunk, D.H. (2003). Self-efficacy for reading and writing: Influence of modeling, goal setting, and self-evaluation. *Reading & Writing Quarterly*, 19, 159-172. doi: 10.1080/10573560308219
- Schunk, D. H., & Zimmerman, B. J. (1997). Social origins of self-regulatory competence. *Educational Psychologist*, 32, 195-208. doi: 10.1207/s15326985ep3204\_1
- Schunk, D.H., & Zimmerman, B.J. (2007). Influencing children's self-efficacy and self-regulation of reading and writing through modeling. *Reading & Writing Quarterly*, 23, 7-25. doi: 10.1080/10573560600837578
- Sears, M.O. (1971). *Effects of a student centered procedure on the self-concepts and writing practice of college freshmen*. Dissertation Florida State University.
- Shum, M. S. K. (2005). Effects of four methods of evaluation of Chinese composition in Hong Kong secondary schools. Peer checklist at a closer look. In G. Rijlaarsdam (Series ed.) & M.S.K. Shum & D-L. Zhang (Vol. Eds.), *Studies in Writing. Vol. 16., Teaching writing in Chinese speaking areas*. (pp. 199-214). New York: Springer.
- Sonnenschein, S., & Whitehurst, G. J. (1984). Developing referential communication: A hierarchy of skills. *Child Development*, 55, 1936-1945. doi: 10.2307/1129940
- Starc, S. (2004). Mother-Tongue education in Slovenia. Mother-Tongue education in specific regions. *L1-Educational Studies in Language and Literature*, 4(1), 103-115. doi: 10.1023/B:ESLL.0000033857.50595.57
- Sullivan, K.P.H., & Lindgren, E. (2006). *Computer keystroke logging and writing: Methods and applications*. Oxford: Elsevier.
- Ten Brinke, S. (1976). *The complete mother tongue curriculum. A tentative survey of all the relevant ways of teaching the mother tongue in secondary education*. Groningen/London: Wolters-Noordhoff/Longman.
- Toorenaar, A., & Rijlaarsdam, G. (2005a). Innovating Mother-Tongue Education in pre-vocational education: Fostering a community of learners. In C.P. Constantinou, D. Demetriou, A. Evagorou, M. Evagorou, A. Kofteros, M. Michael, Chr. Nicolaou, D. Papademetriou, & N. Papadouris (Eds.). *Abstracts 11<sup>th</sup> European Conference for research on learning and instruction: Multiple perspectives on effective learning environments*. Nicosia: Kailas Printers and Lithographers. 17-18.
- Toorenaar, A., & Rijlaarsdam, G. (2005b). The classroom as community of learners for students for mother tongue education in pre-vocational education. *Abstracts. Learning and teaching mother tongues: The role of literature for children and young adults at home and at school. 5<sup>th</sup> IAIME conference*. Albi, France. 66.
- Torrance, M., Fidalgo, R., & García, J.N. (2007). The teachability and effectiveness of cognitive self-regulation in sixth-grade writers. *Learning and Instruction*, 17(3), 265-285. doi: 10.1016/j.learninstruc.2007.02.00
- Van Steendam, E., Rijlaarsdam, G., & Sercu, L. (2007). Improving text coherence: effects of collaborative revisions conditions on writing quality in EFL. In B. Csapó, & C. Csíkos (Eds.), *Developing potentials for learning. Programme 12<sup>th</sup> Biennial Conference for Research on Learning and instruction*. Budapest, Hungary. 146.
- Van Steendam, E., Rijlaarsdam, G., & Sercu, L. (2006, September). *Improving text coherence through peer revision. Do ESL-students revise more and better when being trained with peer revision?* Paper presented at 10<sup>th</sup> International conference of the EARLI special interest group on Writing. University of Antwerp, Belgium.
- Van Steendam, E., Rijlaarsdam, G., & Sercu, L. (2008a). Learning to write through learning-to-revise. The effect of teaching evaluative criteria on text quality in EFL. Manuscript submitted for publication.
- Van Steendam, E., Sercu, L., & Rijlaarsdam, G. (2008b). The effect of strategy instruction on the quality of peer feedback in ESL/EFL. Manuscript submitted for publication.

- Van Waes, L., & Leijten, M. (2006). Logging writing processes with Inputlog. In L. Van Waes, M. Leijten & C. M. Neuwirth (Vol. Eds.), & G. Rijlaarsdam (Series Ed.), *Studies in Writing. Vol. 17. Writing and digital media* (pp. 158-165). Oxford: Elsevier.
- Vernon, S., Alvarado, M., & Zermeño, P. (2005). Rewriting to introduce punctuation in the second grade: a didactic approach. In G. Rijlaarsdam, (Series Ed.), & G. Rijlaarsdam, H. Van den Bergh, & M. Couzijn (Vol. Eds.), *Studies in writing. Vol. 14. Effective learning and teaching of writing, Part 1, Studies in learning to write* (2nd ed., pp. 47-58). Dordrecht: Kluwer Academic Publishers.
- Ward, L. R. (1959). *A comparison of two methods of teaching writing in a course in communication skills*. Dissertation Purdue University.
- Wells, G. (2000). Dialogic inquiry in education. In C. Lee & P. Smagorinsky (Eds.), *Vygotskian perspectives on literacy research. Constructing meaning through collaborative inquiry* (pp. 51-85). Cambridge: Cambridge University Press.
- Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13-39). San Diego: Academic Press. doi: 10.1016/B978-012109890-2/50031-7
- Zimmerman, B. J., & Kitsantas, A. (2002). Acquiring writing revision and self-regulatory skill through observation and emulation. *Journal of Education Psychology, 94*(4), 660-668. doi: 10.1037/0022-0663.94.4.660

### **Appendix. Use of information technology in observational learning**

Key stroke logging and computer screen recording – both with or without accompanying thinking aloud on audio, are means that can be used in classroom (and research) settings. In the studies presented in this paper, the following (free) software was used:

Camtasia (screen recording, [free trials](#) possible). Very easy to implement; records are actions on screen, when working in word processor, PowerPoint, web surfing etc.; also records audio input (thinking aloud, discussion in pairs) concurrently. Easy to replay, as input for discussion and reflection, or as instructional content (two different approaches for the same task: who is doing better?). Used by Van Steendam et al. (2006, 2007, 2008a, 2008b) and Raedts et al. (2007; Raedts, 2008), combined with thinking aloud and key stroke logging (see Degenhart, 2006).

Key-stroke logging (Inputlog, free software for researcher, downloadable from [www.inputlog.net](http://www.inputlog.net)). Records key-strokes, pauses, revisions, mouse movements etc.; provides a play back function, and various analytic output. See Van Waes and Leijten (2006). For advanced users a handbook is available, with papers on technical aspects and on research backgrounds and applications (Sullivan & Lindgren, 2006)

Digital video camera and thinking aloud, used in the Couzijn (1999) and Braaksma et al. (2002) studies.

### **Note**

This paper is a joint contribution of the members of the Language & Literature Education research group of GSTL and *extra muros* PhD's. Responsible and corresponding author is Gert Rijlaarsdam. The contributors are arranged in alphabetical order.

