

Rapport de recherche

PROGRAMME ACTIONS CONCERTÉES

Writing Together in Primary School: Teacher Interventions and Student Writing Strategies

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Centre facilitant la recherche et l'innovation dans les organisations (CEFRIO)

Grant-Managing Establishment

Université du Québec à Chicoutimi (UQAC)

Research Project Number

2011-ER-144364

Concerted Action Title

Programme de recherche sur l'écriture

Concerted Action Partner

Le ministère de l'Éducation, du Loisir et du Sport
et le Fonds de recherche du Québec - Société et culture (FRQSC)

Table of contents

Table of contents.....	2
Foreword.....	4
1. Research Context	5
1.1 Problem.....	6
1.2 Research and Intervention Questions	8
1.3 Pursued Objectives.....	8
2. Potential Solutions Related to Results, Ripple Effects and Consequences.....	9
2.1 Types of Audiences Concerned by These Results.....	9
2.2 Meaning of the Conclusions	9
2.3 Immediate or Foreseen Impacts of This Research	10
2.4 Limitations of This Action Research	11
2.5 Key Messages for Teachers	12
2.6 Main Solutions Proposed for Teachers.....	13
3. Methodology.....	14
3.1 Description and Justification of the Chosen Methodological Approach	14
3.2 Description and Justification of Data Collection Methods	14
3.3 Corpus	14
3.4 Analysis Techniques and Strategies.....	14
4. Results	16
4.1 Main Results	16
Types of Writing Accompaniment Practices with KF.....	16
Types of Writing Situations in KF.....	17
KF Writing Contributions	17
4.2 Conclusions and Possible Solutions.....	21
4.3 Main Contributions to Research in Terms of the Advancement of Knowledge	22

5. Future Research Opportunities 23

 5.1 New Research Possibilities and Questions That Ensued From Our Work 23

 5.2 Main Potential Solution 23

6. References 24

Foreword

We would like to sincerely thank our practice-setting collaborators and especially the teachers from the five school boards who took part in this action research, without whom this project would have been impossible.

This research contributed to the training of the following student researchers; we would like to thank them for the quality of their work as research assistants.

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Main ethics approval (number 602.131.05) for this project was granted on March 16, 2011, by the Université du Québec à Chicoutimi's Research Ethics Committee.

To quote this report:

Allaire, S., Thériault, P., Laferrière, T., Hamel, C., & Debeurme, G. (2015). Writing Together in Primary School: Teacher Interventions and Student Writing Strategies (Complete research report submitted to the Fonds de recherche du Québec sur la société et la culture [Quebec Research Fund on Society and Culture]). Available from:

http://affordance.uqac.ca/publications/writing_together_allaire_report.pdf

To consult the project Web page (French only)

<http://affordance.uqac.ca/index.php/ecrire-ensemble-au-primaire/>

1. Research Context

Since 2002, within the context of the *École éloignée en réseau*¹ (Remote Networked School) initiative that has now simply become the *École en réseau* (Networked School) initiative, students and teachers at rural schools from approximately 20 school boards in Quebec have been using information and communication technologies (ICTs) to enrich their learning environments through telecollaboration (Laferrière, Allaire, Breuleux, Hamel, Turcotte, G.-Perron, Beaudoin & Inchauspé, 2009). Knowledge Forum (KF), which has been translated in French by *Forum de coélaboration de connaissances (FCC)*, is an asynchronous communication tool that is used to enable students from different classes and schools to learn together regardless of the geographic distance that separates them.

To be more precise, KF is a private common digital space where students help one another to build knowledge by reading and writing notes. Using real questions that have stimulated their interest and are related to fields such as social sciences, science and technology, ethics and religious culture, students try to better understand the situations, events and phenomena of the world around them under their teacher's guidance. Through the process of written interaction, students will learn to integrate and express knowledge connected to this subject matter while increasing the class' common cultural capital. We then say that the students are involved in "knowledge building" (Allaire & Lusignan, 2011; Scardamalia & Bereiter, 2003).

¹ <http://www.eer.qc.ca>

As class networking practices were developed by teachers and documented by researchers of the Remote Networked School, the question of the specific contribution of KF to the development of writing skills gained interest, as well as practical and scientific relevance. This is what led to us to conduct this action research.

1.1 Problem

Writing skills are essential to functioning in society; they are increasingly referred to as “knowledge” because together with reading skills, they are the building blocks of life-long learning. “Students must know how to read to learn about the world and must know how to write to change it,” said Brian Cambourne, head of the Language, Learning and Literacy Unit at the University of Wollongong in Australia. This means that writing not only serves communication purposes, it is also a thought-structuring tool. With this in mind, Chuy, Scardamalia and Bereiter (2012) have identified two types of writing: literary writing, which seeks to create an experience for the reader (Rosenblatt, 1978) (to inform, entertain, convince, etc.) and ideational writing, whose main function is to contribute to the writer’s integration of knowledge.

Although its relevance is undeniable, it is just as obvious that writing is a complex act since it requires the involvement of many elements: relevant ideas, coherent structure, the right choice of words, sentence fluency, a style that is appropriate to the context and compliance with linguistic rules (Jamison Rog, 2009; Spandel, 2003). Research conducted on cognitive processes used in writing (Hayes, 1996; Hayes & Flower, 1980) has revealed

that advanced writers use a variety of planning, "translating", revision and correction strategies. Their inner meta-discourse also contributes to self-monitoring of the writing task. Bereiter & Scardamalia (1987) have conceptualized that such discourse iteratively fuels two spaces which together determine the representation of a given writing task. The "content" space basically consists of ideas (what to say), whereas the "rhetorical" space is the way that an idea is expressed (how to say it).

Since they have not yet developed the strategies of advanced writers, beginners may find themselves in cognitive overload because of the number of elements that they must negotiate. Here are a few examples of problems that may ensue: having difficulty coming up with ideas, failing to establish textual coherence, writing a single draft copy (knowledge-telling writing) or making superficial modifications, losing sight of the original intent behind the writing, etc. Low levels of meta-cognition in students with difficulties (Taft & Mason, 2010) are likely to accentuate these situations.

The increased use of computers and ICTs in the education community opens the door to new possibilities that support the acquisition of writing skills. MacArthur (2006) has compiled five main contributions in this regard: word processing, which increases the number of modifications made to a text; procedural facilitators, which help to identify the writing intent; voice recognition, which helps to improve writing fluidity; hypermedia design, which helps to establish a link between ideas; and computer-mediated communication, which helps to take the recipient into account.

1.2 Research and Intervention Questions

Research conducted over the course of this action research built on previous work that sought to identify the contribution of technological tools to the development of writing skills. In terms of interventions, we wanted to determine if it was possible to design and introduce writing situations—in collaboration with teachers—that were inspired by a knowledge-building approach that made use of KF. In terms of research, we wanted to determine if these types of writing situations were favourable to the integration of the elements of writing (Spandel, 2003), as well as the development of writing strategies and discursive behaviour that are similar to those of advanced writers.

1.3 Pursued Objectives

This action research was structured based on the following research objectives:

- a) Describe classroom practices that include KF in which teachers explicitly seek to develop student writing skills;
- b) Observe the implementation of writing processes through strategies used by students when KF is included;
- c) Analyze texts that are produced with the help of KF;

A fourth objective, pertaining to development, was added to the other three. It consisted of adapting an analysis tool for the growth of vocabulary in KF in such a way that it could be employed by teachers that use other technological tools (blogs, for example).

2. Potential Solutions Related to Results, Ripple Effects and Consequences

2.1 Types of Audiences Concerned by These Results

We have sought to improve the writing skills of primary school students through this action research. The results that ensue are most likely to direct teaching practices. Furthermore, the results could also be useful to pedagogical consultants (for English and other subjects), as well as ICT moderators. Finally, consideration for KF's affordances² could be of particular interest to designers of educational resources, especially those responsible for designing software that "teaches" writing skills.

2.2 Meaning of the Conclusions

The conclusions of this action research bear the following meanings.

For teachers:

- When supported by teaching practices that are based on writing processes and strategies, the use of KF contributes to the development of the elements of writing.
- Writing processes and strategies benefit from being developed in an actual writing situation; KF can do this.
- Use of KF enables both the learning of writing and writing to learn.
- It is possible to lead primary school students to adopt discursive behaviour that is close to that of more advanced writers, such as taking part in iterative writing.

² The concept of affordance (Allaire, 2006; Gaver, 1991; Norman, 1983) refers to the possibilities for action that are offered by digital technologies depending on the way that they were designed.

For pedagogical consultants and ICT moderators:

- The analysis required to choose a writing tool should consider the way that its affordances support writing process and strategies;
- Use of advanced-level KF affordances by a teacher requires time and the introduction of many writing situations to students.

For designers of educational resources:

- Designing a tool that teaches writing skills should be based on recognized principles and knowledge. While teaching practices are crucial to the way that a technological tool is used, a tool whose design is not firmly based on established knowledge will have little to offer in terms of operationalizing the instructional thoughts of a competent teacher.

2.3 Immediate or Foreseen Impacts of This Research

Our research has many immediate impacts, as we will describe. In social terms, the results of this action research remind us that the act of writing is not simply a matter of producing an error-free text. Writing is a social act, a means of communicating ideas and building knowledge and thoughts. In terms of ministerial policies and guidelines, our results lend empirical and practical support to areas of focus that were put forward in the Rapport du Comité d'experts sur l'apprentissage de l'écriture (MELS, 2008) (Report from the Expert Panel Concerning the Learning of Writing). In terms of the impact on teaching, writing situations are now available that inspire children to take part in iterative writing with the help of KF³. New workshops

³ <http://affordance.uqac.ca/index.php/ecrire-ensemble-au-primaire/>

provide material for networked school bimonthly professional development meetings and knowledge exchange sessions. Technologically speaking, our action research results indicate that KF is a relevant tool that can help students develop writing strategies. Lastly, an open-access analysis tool is available⁴ for stakeholders who wish to document the growth of vocabulary in the classes that make use of a blog.

2.4 Limitations of This Action Research

Although we cannot claim to have worked with a representative sample, an element of the robustness of this research is the diversity of origin of the participating classes. Although most of the classes were multi-aged and worked with classes located elsewhere, some were from rural communities while others were from urban and suburban communities. Furthermore, the teachers' experience level using KF was variable. During the first year of the project, 7 classes participated, totalling 99 students from 3 school boards in 3 different administrative regions. In the second year, 8 classes took part in the research, consisting of 139 students from 5 school boards in 4 regions. The third year allowed us to validate specific elements that were developed and implemented during the first 2 years, with 3 classes that totalled 80 students from 3 school boards in 2 regions. Another element of the robustness was the clear understanding that we sought to establish of the link between teachers' interventions, the use of KF affordances and what came about as a result in students.

⁴ http://affordance.uqac.ca/ressources/extension_lexique_wordpress_mars2014.zip

Despite our rigour, the following limitations must be identified. First of all, our observation of teachers' interventions related to writing strategies was partial. Secondly, the intangibility or perhaps imperceptibility of certain strategies may have limited their observation. Thirdly, even though we considered teachers' educational intent when analyzing data, the inherent flow of action research sometimes complicated our task. Initial intentions were modified at times due to unexpected classroom constraints and students' interest level. Lastly, all of the teachers who participated in the study were in favour of innovation according to their profile. One can wonder just how transferable the results would be to teachers whose profile was not as positive.

2.5 Key Messages for Teachers

Our message is targeted primarily to teachers since they are first and foremost affected by the results of this action research. First of all, KF must be essentially viewed as a place for the collective creation of ideas. The texts that are written there are usually quite a stretch from final drafts and should be qualified as intermediary texts (Chabanne & Bucheton, 2008) that will be used as means to other ends (such as individual writing, for example). Secondly, the variety of topics about which students wrote in KF illustrates the cross-disciplinary aspect of writing. It is not necessary to "be in English class" to work on writing strategies and processes. Any field of learning can offer a real context and topics about which to write. Thirdly, it would be beneficial to use KF in a broader writing situation that alternates between time spent writing in KF (including the teacher), face-to-face classroom

discussions during which the group reflects on what was written in KF (meta-discourse accompanied by the systematic teaching of notions) and the “translating” of non-KF texts in order to integrate what was seen in KF. When it is used in this manner, KF offers educational support that truly encourages students to spend time planning and improving their writing. Fourthly, the scaffolding from peers that occurs in KF helps students to come up with ideas, overcome writer's block and give meaning to the idea of writing in a school setting. Finally, the structuring of texts in KF by reading other texts that are not in the forum encourages new knowledge acquisition throughout the writing process.

2.6 Main Solutions Proposed for Teachers

The avenues being explored here must be understood as prerequisites to the introduction of productive writing situations in KF.

- Being aware of writing strategies and bringing them out in context through interventions with students;
- Integrating knowledge-building principles (Allaire & Lusignan, 2011; Scardamalia & Bereiter, 2003);
- Being familiar with the main KF affordances (new note, build-on note, annotation, creating a view, promising ideas);
- Drawing inspiration from the typical approach (Annex 1 in the French version of the report) to plan a writing situation with the help of KF.

3. Methodology

3.1 Description and Justification of the Chosen Methodological Approach

We chose an action research approach because of the practice-development aspect that was intrinsic to the project. The research team collaborated with practitioners to ensure the pragmatic viability of the knowledge that was developed and to take the field setting into account. Follow-up meetings allowed us to discuss results and consider the next steps involved in implementing writing situations.

3.2 Description and Justification of Data Collection Methods

As is the case with any tool, KF's contribution could be better understood in conjunction with teaching practices. Attention was thus paid to these practices, and elements that relate to student learning (writing process and product) were documented.

3.3 Corpus

The main sources of data were: identification of teachers' educational intent (interview); interventions linked to writing strategies (in-class observation); students' connection to writing in KF (questionnaire and interview) (Annex 2); writing strategies (questionnaire and observation of KF) (Annex 3); texts written within and outside of KF (draft and final version).

3.4 Analysis Techniques and Strategies

We used qualitative and quantitative analyses (descriptive and illative) to enrich our examination of the data and to triangulate them. Specifically, we used writing strategies from the Quebec Education Program (MEQ, 2001)

(Annex 4) and the elements of writing (Spandel, 2003; MELS, 2014) (Annex 5) as a qualitative analysis evaluation grid.

4. Results

Considering the importance of the manner in which a teacher uses ICTs to document the improvement of students' learning outcomes (Tamim, Bernard, Borokhovski, Abrami & Schmid, 2011), we paid particular attention to teaching practices. KF (and by extension its affordances) must therefore be understood more in terms of contribution than of impact.

4.1 Main Results

Types of Writing Accompaniment Practices with KF

We discovered three types of writing accompaniment practices in KF. During the "hands-off" practice, the teacher introduced the writing situation by asking students a question in KF and then letting them answer without any particular intervention. Questions were varied and not necessarily linked to one specific field of learning. The objective was not to draft a text but rather to use writing to answer a specific question. "Scripted" practice put emphasis on the directiveness of the instructions that were given by the teacher throughout the writing situation. This practice gave very little latitude to students who were required, in some way, to follow the steps of a recommended procedure. The third type of practice that we discovered is "scaffolding". It is characterized by the introduction of writing situations that lead students to pursue an overall goal that consists of a few intermediate steps. The Knowledge Forum was used to assist in the completion of one or two specific steps in the process, rather than the writing situation as a whole. Its use alternated with periods of reading, meta-cognitive discussions led by the teacher in a large group (face-to-face) using texts written in KF, or in some cases, texts that were written on paper. Throughout the situation,

personalized accompaniment was provided by the teacher, including the use of KF. This accompaniment sought to establish a link between writing strategies. Considering the important role that personalized accompaniment and feedback play in student learning (Hattie, 2009), we concentrated on results that were linked to scaffolding practices.

Types of Writing Situations in KF

Scaffolding accompaniment practices led to three main types of writing situations that were completed in KF. In “collective investigation” situations, Knowledge Forum helped to collectively produce ideas and knowledge that were then used to draft a text outside of KF. Collectively speaking, working with KF led students to understand situations, events and phenomena in the world around them; basically, this improved the networked class' common cultural capital. Individually speaking, KF has become a sort of suggestion box from which students can draw inspiration during subsequent tasks, including students with learning disabilities, who often have difficulty coming up with ideas because they are already overloaded by the “translating” task. “Use of youth literature” situations arose in an approach that was similar to that of a collective investigation, the main difference being that students collectively enjoyed and interpreted literary works using KF. “Individual drafting” situations led students to place a text in KF in order to get peer feedback for revision, rewriting or correction purposes.

KF Writing Contributions

A general statement that can be made regardless of the type of writing situation is the fact that students took part in iterative writing, which means

that it inspired them to go beyond the writing of a single draft or one that only included superficial changes. They experienced, at least in part, the constructive aspect that comes into play and strongly guides the achievement of polished, refined writing.

With specific regard to "collective investigation" and "use of youth literature" types of situations, their iterative aspect took shape throughout a writing situation as a whole and not while drafting each note in KF. These notes had an intermediary status; they contributed to adding content that was gradually transformed by the build-on and annotation affordances in the forum, and by the recycling of ideas through other tasks external to KF that were connected to the writing situation. Transfer of the iterative aspect was noticed in contexts other than KF; for instance, while drafting texts on paper (one narrative, the other informative) students from different classes continued to make changes between the first and final drafts.

Although we were unable to determine the required length of a writing situation in order for it to produce improved writing results, it seems that situations which took place over a few weeks encouraged students to modify their writing. These situations allowed for different aspects of reading and writing, such as: writing a personal opinion linked to the group's writing intent; reading classmates' opinions; providing feedback to improve or correct a previously existing idea; modifying a previous note to take feedback into consideration; selecting ideas in preparation for drafting an individual text on paper, etc. Classes did, however, need to be reminded of

the overall initial writing intent from time to time so that they would not go off track.

Reading has proven to be crucial and has a dual role. On one hand, reading notes in KF limited the repetition of ideas since the majority of students correctly understood the collective aspect of this tool. On the other hand, reading reference texts connected to the writing theme helped students to delve deeper into ideas, making it possible to explain an event by going beyond the mere statement of spontaneous representations and thus, paving the way to the task of text polishing.

The use of KF particularly supported the planning process and strategies. The writing theme in the forum was formalized most of the time by the teacher in asking an initial question. This happened after preliminary oral conversations had taken place to define the first level of writing intent, meaning the collective level. Thus, using KF, the majority of students wrote to and for the group to get ideas, give them to others and avoid repetition. Reading classmates' notes was a trigger for adding ideas or proposing modifications. Although beneficial, collaboration among classes was not necessary to establish this link to writing. The second level of writing intent in KF was the individual level; it was connected to the collective one. The individual level was set in motion through the drafting of notes that students wrote to contribute to knowledge building and the group's shared ideas, some of which were used later during the individual drafting of a text on paper. In KF, the build-on affordance was important in helping students to make a relevant choice of specific writing intent that was adapted to the

context of a writing situation. In other words, it provided guidelines that allowed them to keep in mind ways that they could contribute toward achieving the collective intent.

Two other KF affordances contributed to the deployment of writing strategies. Even though it was only used in a few classes, the “promising ideas” (PROMI) affordance helped students to make a choice from a range of ideas that had been available since the beginning of the writing situation. This affordance was used in conjunction with another — the creation of new views — which helped to address specific sub-themes linked to the initial overall theme. After having determined which ideas were important, these views contributed not only to prompting additional writing, but also to anticipating the potential organization of a text on paper. It must be stated that many classes that did not use the PROMI affordance while they did use the one for creating views; ideas could be chosen during oral conversation in a large group.

“Translating” a text — understood to mean textual coherence and sentence linkage — was not often practised in a systematic way in KF during “collective investigation” and “use of youth literature” writing situations. A text “translation” that could be qualified as collective seemed to take shape because coherent content was observed in the linkage of notes in a majority of situations. “Translating” a text was mostly practised during “individual drafting” situations. More specifically, many groups of sentence connectors were proposed to students, through the build-on affordance, to support the

correct linkage of clauses and sentences in their notes. Transfer of learning was noticed later, during the drafting of a text on paper.

As for text revision in KF, it occurred primarily, but not exclusively, during “individual drafting” writing situations. The annotation affordance, which is similar to a personalized Post-It that is given to a person, was put to use. Several students used the notes to obtain peer feedback, then read the notes and, in many cases, took what had been written into consideration.

Some situations, especially those of the “collective investigation” type, systematically integrated vocabulary enrichment in KF; this was achieved mainly by the creation of a collective glossary linked to the writing theme. Some words from the glossary were later used in an individual text written on paper and a strong congruency of use was observed within a context.

4.2 Conclusions and Possible Solutions

Regardless of the type of writing situation, results tend to indicate that students reused what was done in KF outside of the forum (content, sentence connectors, glossary, etc.). A writing situation completely structured from the beginning, with consideration of knowledge-building principles (Allaire & Lusignan, 2011) and accompaniment based on writing strategies, are recommended. Moreover, even though adjustments were made between instances of the “use of youth literature” writing situations, it has proven more difficult to implement a content-improvement dynamic in a “collective investigation” situation. The personal nature of literature assessment, as well as the many possible ways of analyzing what literature has to offer, are factors in these cases. Identification of the explicit criteria that trigger an

assessment must be pursued. Furthermore, other KF affordances (rise-above, quotation and reference notes, "problem" field, "key-word" field, individual view, spatial organization of a view, publishing) could have been used advantageously to support writing strategies. This illustrates the potential of the tool but also the time that is required to master it.

4.3 Main Contributions to Research in Terms of the Advancement of Knowledge

We have identified three main contributions. First, our research shows that KF may contribute to social and cognitive aspects that come into play in learning to write. Second, we designed and introduced writing situations jointly with participating teachers that led students to rework their texts while maintaining their enjoyment of writing. These situations took into account the importance of accompaniment and interaction with peers from a developmental perspective, with the goal being to increase student autonomy. Some situations favoured collective investigation, which is not usually associated with learning to write. Finally, we identified a typical writing approach that was independent of all school subjects and enabled students to work on the entire writing process in an integrated way.

5. Future Research Opportunities

5.1 New Research Possibilities and Questions That Ensued From Our Work

Below are a few areas to explore eventually that seem ripe with promise in light of this research.

- The scaffolding provided by teachers was mainly transmitted orally. What would happen if the scaffolding they provided in KF was increased? What if it was more individualized? It would be beneficial to better understand the contribution of these potential forms of support that complement the scaffolding that is already built into KF.
- Despite their relevance, many of the writing situations developed during this action research were quite complex to implement from an educational standpoint because of the flexibility and adaptability that were needed. This begs the question of the transferability of the results to teachers who are more comfortable with linear and well-defined didactic approaches.

5.2 Main Potential Solution

In order to specifically study the second research possibility that was just identified, it would be beneficial to take an interest in the activities of the teacher who works on introducing complex writing situations in KF.

Engeström's activity theory model (1986) could offer an adequate framework for understanding the tensions that arise during implementation. This could point the direction for professional development activities concerning the teaching of writing.

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