Second Graders Decide When to Use Electronic Editing Tools

DAVID C. FLETCHER

Lehman College, The City University of New York
250 Bedford Park Boulevard West
Carman B29
Bronx, New York 10468 USA
fletcher@lehman.cuny.edu

This is a case study of one teacher’s classroom action research project in which she explores how and when her 2nd graders decided to use electronic editing tools to revise and edit their writing. Several discoveries were made along the way: students were able to make better editing choices when they typed their writing, but they did not necessarily use the information provided to them by the editing tools. Implications for the use of word processing tools in a collaborative and engaging literacy classroom and observations on the merits of the teachers’ application of action research are discussed.

USING ACTION RESEARCH TO DETERMINE IF EDUCATIONAL TECHNOLOGY CAN SUPPORT STUDENT LEARNING

Much criticism has been leveled against educators for not collecting and presenting sufficient evidence to clearly document students’ academic achievement resulting from their use of educational technologies. To address this gap, Mintz (1997) argued that teachers must be allocated time and resources to redesign, implement, and evaluate technology-supported curricula in which students are constructors of knowledge. He goes on to recommend that the results of these efforts must be communicated to the
public, including school administrators, parents, community organizations, and business. Such evidence certainly exists. As a result of teachers’ introduction of more advanced forms of technology, Hancock and Betts (1994) found that the teachers used, and also developed, more complex decision making processes as they decided how best to support their students’ development of higher order thinking skills with open-ended forms of computer-supported learning, including simulations and modeling, telecommunications projects, and Internet research. Collis, Knezek, Lai, Miyashita, Pelgrum, Plomp, and Sakamoto, (1996) also discovered that both teachers and students benefited in several ways as a result of their use of advanced applications. Teachers expected more from their students, presented more complex material, provided more individualized attention, allowed more independent work, accommodated more and different student learning styles, and moved from teacher-centered classroom to student-centered classrooms with more collaboration and small-group work. Students acquired more advanced abilities and competencies in problem solving, decision-making, collaborative composing and editing, and conducting distance research in social and natural phenomena. Hill and Hannafin (1997) and others (Jonassen, 2000) concluded that teachers who supported student-centered thinking and exploration created the necessary conditions for students to develop metacognitive strategies, gained more individual control of their learning, develop divergent thinking skills and multiple perspectives, and become independent thinkers.

One important route for teachers to take to address Mintz’ challenge is to conduct action research in their classrooms to gain a deeper and more informed understanding of their instructional practices and students’ learning. The advantages teachers have gained implementing action research have been well documented (Elliot, 1991; Frazee, 1995; Hopkins, 1993; Kemmis & McTaggart, 1988; Kincheloe, 1991; McLean, 1995; McNiff, 1991: Noffke & Stevenson, 1995; O’Hanlong, 1996; Sagor, 1992; Smith-Cochran & Lytle, 1993; Stringer, 1996). McNiff’s (1991) positioning of teachers as classroom researchers has particular importance in our gaining a better understanding about teachers and students benefit from the implementation of technology-supported curricula:

It (action research) encourages a teacher to be reflective of his own practice in order to enhance the quality of education for himself and his pupils. It is a form of self-reflective enquiry that is now being used in school-based curriculum development, professional development, school-improvement schemes, and so on, and, as such, it actively involves teachers as participants in their own educational process (p. 1).
In their detailed examination of professional development communities to support the teaching of science and mathematics, Loucks-Horsley, Hewson, Love, and Stiles (1998) also position action research as an important route to improve instruction. However, for teachers to successfully implement action research, a number of critical characteristics must be met: teachers must have access to an experienced researcher and be provided time to conduct their research; teachers must receive administrative support and approval and being given opportunities to share the results of their research. The following case study is an example of action research in which several of the previously mentioned characteristics were met.

A SECOND-GRADE TEACHER’S ACTION RESEARCH:
REFLECTIVE PRACTICE IN ACTION

During the first year of a proposed three-year study, I collaborated with two elementary teachers and a middle school teacher to support their design and implementation of classroom action research projects. In the summary and analysis to follow, the case study of one of the elementary teachers, Ms. A, a second grade teacher with 12 years of classroom experience is presented. The class included a fairly even mix of 27 urban boys and girls in what can be truly be described as a multicultural classroom. For a four month period beginning in early February and continuing through May, Ms. A. studied eight of her second grade students to determine if, and to what extent, the students’ use of computer editing tools would help them revise and edit book reports they would eventually post on their class webpage. It is important to note that throughout the study, Ms. A.’s goal was always to support her students’ learning.

Ms. A. applied an exploratory problem-solving approach in her classroom in which she identified a problem and then would allow herself and her second graders the space and freedom to explore possible solutions. She adopted a similar approach for her research project, remarking that she did not need a pre-determined roadmap. At the beginning of the study, Ms. A. described herself as “still in the midst of the process myself,” wanting to experiment and take risks, and ready to give her students credit for their learning. She also wanted to permit students opportunities to take the lead when possible, and was ready to believe that, “The kids will probably figure out where we’re going before I do.” On reflection, Ms. A. noted that she had derived her hands-on experimental and experiential learning style from her
I think technology is very easy for me because I’ve seen my children work with it from a very young age and so I can see that it’s developmental. I don’t feel that they need to be perfect at everything, and I think that’s why I’m so very comfortable with letting them (second graders) experiment, see how they do. If they do it great, if they can’t do it, I’ll show them. And whatever turns out, it turns out…. Some folks want to take a very structured approach, and the kids follow very set procedures in order to use the programs. I view it the same way I would experience any new program. I don’t read the manual; I’ll go to a program and I’ll click around, see what happens, and I’ll learn it from there…. I think the people who are really hung up on how things work and getting it done correctly probably find it more difficult to use the technology because they’re so busy trying to conquer and overcome it, and they’re not willing to play with it for awhile.

**Integrated Literacy Program**

Ms. A conducted her research within the context of a literacy program she had carefully planned and in which she integrated reading, writing, talking, and thinking. She found numerous ways to support her students’ self-confidence and pride as readers and writers, and placed a priority on their maintaining ownership of their writing. Several of the interrelated components of her program included:

1. **Positioning students “as teachers.”** Ms. A stressed, “Children learn best when they are the teachers.” She supported their making independent decisions and choices, experimenting and learning from each other. Ms. A. frequently let her students’ judgments, evaluations, and decisions stand on their own.

2. **Providing real-life reading and writing experience.** Ms. A. encouraged her second graders to focus on the creation of meaning as their first priority; other writing concerns such as capitalization, punctuation, spelling, and grammar were to be viewed as secondary and as tools to be used in order to help readers better understand a writer’s intentions. She felt that using other responsive readers, including classmates, students as penpals from other school, and adults would help her students learn to clarify and revise their intended meanings, organize their writing, and edit. Several examples of real-life reading and writing experiences Ms. A. structured for her students included:
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- **Webpage publications.** Ms. A.’s students wrote interesting and engaging book reviews which she typed and published on the class website;
- **Author studies.** Students read and wrote about books and then talked with several of the authors in order to learn to read like writers. Ms. A asked visiting authors, such as Vera Williams and Kevin Hanks, to reveal their writing process by describing how they used illustrations and developed characters and dialogue between characters.
- **Students as critical readers.** Individually and in pairs, students assessed each other’s formal writing using a five-item rubric to provide a reader’s perspective to the writer (Table 1).

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
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<tbody>
<tr>
<td>Ms. A.’s Students’ Writing Assessment Rubric</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Rubric components:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Did the writer use a topic sentence</td>
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<tr>
<td>2) Was the writing neat</td>
</tr>
<tr>
<td>3) Did the piece make sense?</td>
</tr>
<tr>
<td>4) Did it answer the question (if there was one)?</td>
</tr>
<tr>
<td>5) Was it corrected for spelling and punctuation?</td>
</tr>
</tbody>
</table>

**STUDY DESIGN**

**Action Research Questions**

Ms. A’s primary research question was, “Will second grade students use of editing tools (for example, spelling and grammar), will help them make corrections necessary to improve their writing?” A second and related question was, “To what the extent are students aware of their errors and how to correct them?” Ms. A. designed her questions based on her experiences trying to teach her second graders to revise and edit their book reviews. She decided that it was time to experiment and so paired her students into four teams of two.

Editing had proven a challenge without a quick or easy solution. Ms. A noted that she had “done punctuation lessons.“ “I keep saying punctuate, punctuate, punctuate. It’s not necessarily going in. I guess I’ve come to realize that I can’t drill a little hole in their head and pour in the information.” Consequently, she gave up trying to teach spelling, punctuation, and grammar as activities separate from her students’ actual writing.
Ms. A. began with what might be considered high hopes for students’ use of the editing tools: “Wouldn’t it be nice if a mechanical thing pointed it out to them?” It must be remembered that Ms. A had never asked her students to type their writing nor had she used editing tools with her students:

I keep telling them the same kinds of things over and over again. Maybe this is another way of having them get the same sort of information, but from another object. I can’t be there for every child and I can’t give them constant one-to-one attention. I’m hoping that this will sort of supplement it. Maybe I’m right, maybe I’m wrong.

She began her project anticipating that the four pairs of students would benefit from using editing tools in ways similar to her own children. The changes her students would make, she predicted, might help them further clarify their intended meaning, including correcting punctuation (periods and question marks) and capitalization (proper and common nouns), and modifying sentence fragments.

**Procedure**

Ms. A conducted her project on a laptop she purchased from an online auction website and installed the latest version of a word processing program with grammar and spelling editing tools. Even though she was using a different computer and operating system in her classroom, she made the decision to use the laptop since she also had the same operating system at home. Her use of the single laptop made this a one-computer classroom project, and similar to Dockterman (1998) and others (Franklin & Madian, 1986), found that, if access is planned and managed, students can make academic gains using one computer. Ms. A also took significant advantage of this arrangement and observed and listened to each pair of her young students as they revised and edited their writing on the single laptop.

Ms. A was concerned that her project would help her obtain “fair results,” and was very determined to discover the extent to which her students might be able to benefit from using the editing tools independent of her intervention. She noted that her students were already “trained to look at each other’s pieces (writing)” and were accustomed to working as partners. Ms. A. selectively paired the students with partners who she thought would be able to help each other, each pair following a set procedure (Table 2). Because Ms. A had assumed her students had not heard a sufficient range of proper English usage, she did not included issues of grammar (subject verb agreement, verb tense) on her students’ rubric (Table 1).
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**Table 2**
Second-Graders Composing, Revising, and Editing Process

<table>
<thead>
<tr>
<th>Process steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1. Compose the book review (with or without a partner)</td>
</tr>
<tr>
<td>Step 2. Type the review into a word processing program (one student reading while they other typed)</td>
</tr>
<tr>
<td>Step 3. Revise and edit the typed draft (“pretending that they are the spell check and grammar check”)</td>
</tr>
<tr>
<td>Step 4. Make predictions about what they would do with the editing highlights</td>
</tr>
<tr>
<td>Step 5. Run the grammar and spell check tools and decide to either use or disregard highlighted information</td>
</tr>
</tbody>
</table>

Ms. A. also wanted her students to use focused conversations with each other, as another route to help them better understand the choice they were making. In addition, she provided her second-graders with special little notebooks to record their predictions about their use of the editing. However, even though her students kept their notes, Ms. A did not want this to become over-bearing and the “weight of doing all of the record keeping” to “supercede what they’re going to get out of it.” Her students’ reflections also became a way for Ms. A. to develop an understanding from her students’ perspective, a critical source of data in action research (Sagor, 1992; Hopkins, 1993). Ms. A’s goal, as she stated, was “to know what they think, what kinds of mistakes they noticed.” So she could observe and listen in on their conversations, she usually arranged for her eight students to compose, revise, and edit their writing during their lunch periods and her preparation periods.

Ms. A also made it clear that she wanted her students to retain as much control over their writing as possible and was concerned they not be overwhelmed or intimidated by the editing tools. She wanted them to make conscious and deliberate decisions, and supported and allowed her students to:

- decide the content for their writing,
- select the layout for their book reviews,
- talk about possible changes before using the editing tools, and
- decide to use or reject the options offered to them by the editing tools.

To introduce her students to word processing and the editing tools, Ms. A. applied her own learn-as-you-go approach, allowing her students time to discover how to use the software and tools. She noted that some students already knew the basics of word processing and the operating system and
would be able to teach each other. However, when necessary Ms. A. again stated that she would show students how to use a function when they needed her help, but not usually beforehand.

**Data Collection**

Ms. A collected five types of classroom data:

1. Students’ notebooks with their predictions and reflections about their use of the editing tools;
2. Three drafts of students’ writing (a typed version of the hand-written draft; the pair’s version they edited prior to running the editing tools; and the edited version following their using the editing tools);
3. Ms. A’s comparison of each draft to identify what students had or had not changed;
4. Ms. A’s observations of her students as they typed, revised, and edited their writing; and,
5. Student’s comments to Ms. A about their writing and the use of the editing tools.

In addition, I provided Ms. A with transcripts of the eleven tape-recorded reflection and analysis sessions in which we identified and explored theme, noted students’ responses, and kept track of Ms. A’s questions, concerns, and observations.

**Data Analysis**

The primary method of analysis employed was the process of “analytic induction” (Glaser & Strauss, 1967) and included the annotation of interview transcripts, teacher logs, fieldnotes, and analytic memos. Coding and organization of the data and accompanying annotations revealed categories, patterns, and anomalies within the study. The relationship between categories, patterns, and anomalies were examined (Bogdan & Biklen, 1982; Ely, Anzul, Freidman, Garner, & Steinmetz, 1991) to determine significant themes and relationships. This process also involved “winnowing” (Wolcott, 1990), in which data essential to the study was sorted from data extraneous to it. To insure reliability and validity of my ongoing analysis, Ms. A. examined and critiqued both the raw data (transcripts, teacher logs, and
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fieldnotes) and the analysis (analytic memos, coding, identification of patterns, categories, themes, and discrepant information). Her responses provided additional information that strengthened our analysis, pointed out errors or inconsistencies, and provided additional directions for interpretation.

FINDINGS AND DISCOVERIES

In action research, it is the teacher-as-reflective practitioner who must be the final judge of the value and worth of such studies. Over the period of the project, Ms. A. made several discoveries about both the design of her project and about her students’ use of the computer editing tools. We need to remember and understand that, prior to her action research project, Ms. A did not know if the editing tools would prove useful or a waste of time for her students. She had never before asked her students to type their writing nor had she asked them to expose it to either editing or spelling tools.

The Importance of the Student Pairing and Their Use of the Editing Tools. Ms. A’s primary criteria was to pair her students so they would be able to help each other learn more about their writing and to specifically talk about possible changes both before and then after using the editing tools. Ms. A. did not intervene in their revising or editing discussions, and allowed them to decide what they would or would not change. She also knew that a student’s personality, learning style, and motivation to complete a task would probably influence the success or failure or an activity. Because no two pairs of students ever worked in the same way, Ms. A. guessed that she would not be able to always predict the outcome. She observed and listened to their conversations and decided if their work was of value to either or both students.

The Importance of English Literacy and Students’ Ownership

Ms. A. discovered the importance of a student’s knowledge of English was particularly evident for one particular pair of students, an English-as-a-second language student, Margaret (Chinese was her native language) and Tommy, whose first language was English (Figure 1). During their conversations both before and after they used the editing tools, Tommy’s command of English allowed him to make choices Margaret was unable to make due to her lack of English language literacy. Ms. A observed that the two students initially discussed the meanings Margaret was attempting to develop and did not automatically accept the changes offered by the tools (Figure 1), a finding she noted to be consistent across the four pairs of students.
Margaret and Tommy

First Draft:
The horse in Harry’s Room by Sid Hoff Review By Margaret
Harry have a horse he over his bed. His mother look at his room to see what he is doing. And his father look at what he is doing. Father, mother come to his room. He go to sleep all in the same room. Harry saw horses running. Harry saw horses kicking. He get home in a car. I like the book is because I like a horse. The Book remind me like. In the zoo, and remind in racold zoo.

Changes made by students before using electronic tools:
The horse in Harry’s Room by Sid Hoff Review By Margaret
Harry has* a horse he over his bed.** His mother looks at his room to see what he is doing. And his father looks at what he is doing. Father, mother came to his room. He go to sleep all in the same room. Harry saw horses running. Harry saw horses kicking. He gets home in a car. I like the book is because I like a horse. The Book reminds me like. In the zoo, and remind Van Courtland zoo.

Changes made by students after using electronic tools:
The horse in Harry’s Room by Sid Hoff Review By Margaret
Harry has a horse he over his bed. His mother looks at his room to see what he is doing. And his father looks at what he is doing. Father, mother came to his room. He go to sleep all in the same room. Harry saw horses running. Harry saw horses kicking. He gets home in a car. I like the book is because I like a horse. The Book reminds me like. In the zoo, and remind me of when Van Courtland zoo.

* “double underline” indicates changes made by students
** spacing changes are not counted

Figure 1. Margaret and Tommy (Typed by Students)

However, Ms. A concluded that, even though Margaret (Table 1) did not really benefit by using the editing tools, she was satisfied that the conversations she had with her and the interactions with Tommy were worthwhile. She noted that Tommy was very thoughtful, and though not necessarily a top writer, took his time to patiently work with Margaret. It must also be noted that this was Margaret’s book review and that she controlled most of the discussion with Tommy as she attempted to work out her meanings.

Ms. A. concluded:

So, I think for him (Tommy) the editing tools gave him a real framework to make his editing choices. I think that he knew that it didn’t pick up everything; I think that it gave him what to talk about. They didn’t let the whole piece run it for them. They didn’t just say ‘Well, gee, I’m just going to run it through spell check.’ They really tried to
correct it, and they didn’t accept every choice that it offered…. It was very, very interesting because the editing tools helped a little bit, but when the problems are really, really severe, it doesn’t pick up everything.

It should also be noted that Margaret was the author of the review and maintained primary control of her discussion about her writing with Tommy, a dynamic that the student authors repeated in each of the four pairs.

In the second pair, Justin and Edgar (Figure 2), Ms. A. concluded that the partnership proved the least successful because Justin always thought his writing was perfect and did not listen to Edgar’s suggestions.

**Justin and Edgar**

**First Draft:**
The day I was rich by Bill Cosby review by Justin
The genre is a tv/chapter book. The characters in my book are Little Bill, Kiku, Andrew, Jose, Father Fuchisa, and Michel. What happened one day little Bill and his friends were playing stick can hockey. When little Bill was passing a can to Kiku his stick broke. He looked for a stick while the others kept on playing. When little Bill was looking for a stick, he found something shiny. Then little Bill said he was rich. Andrew said it was worth five million dollars. Fuscia said it’s worth ten million dollars. They ran to little Bill’s house. Then when they knocked on the door, big Bill (little Bill’s father) came to the door. Little Bill “I found a big diamond.” Big nBill smiled, then he frowned and said “this is not a diamond it’s a paperweight.” Then little bill put the paperweight back in the park and started to play stick can hockey.

**Changes made by students before using electronic tools:**
The day I was rich by Bill Cosby reviewed by Justin
The genre is a tv/chapter book. The characters in my book are Little Bill, Kiku, Andrew, Jose, Father Fuchisa, and Michel. What happened one day little Bill and his friends were playing stick can hockey. When little Bill was passing a can to Kiku his stick broke. He looked for a stick while the others kept on playing. When little Bill was looking for a stick, he found something shiny. Then little Bill said he was rich. Andrew said it was worth five million dollars. Fuscia said it’s worth ten million dollars. They ran to little Bill’s house. When they knocked on the door, big Bill (little Bill’s father) came to the door. Little Bill “I found a big diamond.” Big Bill smiled, then he frowned and said “this is not a diamond it’s a paperweight.” Then little bill put the paperweight back in the park and started to play stick can hockey. I like this book because I like how little Bill’s friends got tricked.

**Changes made by students after using electronic tools:**
The day I was rich by Bill Cosby reviewed by Justin
The genre is a tv/chapter book. The characters in my book are Little Bill, Kiku, Andrew, Jose, Father Fuchisa, and Michel. What happened one day little Bill and his friends were playing stick can hockey. When little Bill was passing a can to Kiku his stick broke. He looked for a stick while the others kept on playing. When little Bill was looking for a stick, he found something shiny. Then little Bill said he was rich. Andrew said it was worth five million dollars. Fuscia said it’s worth ten million dollars. (continued on next page)
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**Figure 2. Justin and Edgar (Typed by Students)**

However, even for Justin, Ms. A. noticed a surprise:

> It was only after he saw his writing typed that he realized some changes were needed. He said, ‘I didn’t write this.’ I said, ‘Yes, this is what you typed yesterday.’ And he went back and he corrected it himself. But it was interesting because this is a boy who never corrects. And that was why I wanted to do this.

Again, the author of the writing, Justin, took charge of the session. Even though it had not been easy for Ms. A to motivate him to revise his writing, Justin was willing to do so once he saw his review in print. His partner’s comments seemed to have made no difference in the changes he made.

The third pair, Tommy and John (Figure 3) worked very differently than the previous teams. Ms. A. chose these two boys in an attempt to “level the ground,” that is, to pair two writers who were more closely matched. Tommy had previously been partnered with Margaret, whose first language was Chinese, but now Ms. A. wanted to see how Tommy would revise and edit with John, a more proficient writer. Even though Tommy began leading the session, John, the author of the review, quickly took charge. John even returned to his writing for a second session because he was not satisfied with the first revisions. John made most of the changes, including spelling corrections and spacing changes, for he wanted his writing to make more sense. Ms. A.’s observations on their use of the editing tools highlighted the value of students’ talking about the writer’s typed text:

> So this is what happened. They rejected those offerings (editing tools). But did it (grammar tool) pick up the extra comma? No. But it did offer some spelling options and it did offer them a platform for discussion.

Ms. A made another discovery with this pair of students, both of whom were more advanced writers than the other pairs. John had attempted to write a concluding sentence but had given up and left it off the first draft. However, when they returned to his writing on the second day, John reread the entire piece and this time with Tommy’s help formed a final sentence (I
like this book because I like how little Bill's friends got tricked). Ms. A. noted that her other students also had a far easier time writing a summary of the plot than building a deliberate connection to their own experience, a process that required her other students to use syntax and punctuation they had not yet mastered.

**Tommy and John**

**First Draft:**
I want to Be Somebody New by Theo LeSieg Review by John
This book is about Spot wanting to be someone new so he turned into an elephant but he was too heavy to go on the seesaw, walk on the fence, squeeze between the circus tents, go into the house, and sit in his chair. So he turned into a giraffe but he was too tall. So he turned into a mouse but he was too small to climb on his chair to open his house door and the cats chased him. So he was himself. I like this book because I like being doing things like a spirit, and a palis.

**Changes made by students before using electronic tools:**
I want to Be Somebody New by Theo LeSieg Review by John
This book is about Spot wanting to be someone new so he turned into an elephant but he was too heavy to go on the seesaw, walk on the fence, squeeze between the circus tents, go into the house, and sit in his chair. So he turned into a giraffe but he was too tall. So he turned into a mouse but he was too small to climb on his chair to open his house door and the cats chased him. So he was himself. I like this book because I like being doing things like a spirit, and a palis.

**Changes made by students after using electronic tools:**
I want to Be Somebody New by Theo LeSieg Review by John
This book is about Spot wanting to be someone new so he turned into an elephant but he was too heavy to go on the seesaw, walk on the fence, squeeze between the circus tents, go into the house, and sit in his chair. So he turned into a giraffe but he was too tall. So he turned into a mouse but he was too small to climb on his chair to open his house door and the cats chased him. So he was himself. I like this book because I like being doing things like a spirit, and a palis.

Figure 3. Tommy and John (Typed by Students)

**What Changes Did the Student Pairs Make?**

Students made more changes before using the editing tools than after running the spelling and editing tools (Table 3). In part Ms. A. attributed this outcome to her students having been able to read a typed version of their writing. The editing tools provided little useful information beyond what the students were able to use or assimilate about sentence fragments, punctuation, or capitalization. She noted that the real value for her students
was talking about features of their writing with a partner. If done individually, Ms. A. felt the tools would have had been of even less value because there would have been no discussion, “because with a partner conversation is more powerful. You cannot have a conversation if sitting alone.” Her observations on her students’ use of the tools were of particular importance:

Today I was sitting and I was monitoring the conversation. So as they were doing this, I got things like, ‘need a comma or period,’ or ‘I forgot how to spell charmed’ or ‘need capital or small letter,’ or ‘leave a space.’ So, working with another person naturally creates more attention to the way it’s supposed to look. So I thought that this in and of itself was worthwhile.

**Table 3**
Student’s Revision and Editing Changes

<table>
<thead>
<tr>
<th>Students</th>
<th>Spelling</th>
<th>Spacing added between words</th>
<th>Punctuation (periods and commas)</th>
<th>Subject-verb agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>After</td>
<td>Before</td>
<td>After</td>
</tr>
<tr>
<td>Tommy</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Justin and Edgar</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tommy and John</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

**Before**—number of changes students made as a result of their discussion and before using tools

**After**—number of changes students made after using tools

Ms. A’s second grade students paid attention to features in their writing only partially consistent with other second graders. Luts (1991) found that second graders attended to spelling errors first, and then capitalization, punctuation, and grammar. Ferreiro and Pontecorvo (1999) also discovered that young writers also tried to make sense of writing conventions, including punctuation marks, in order to clarify their intended meanings. Ms. A.’s students also attended to spelling errors the most number of times, ignored capitalization, and always made changes so their writing would make more sense. However in contrast to her prediction, Ms. A.’s more advanced students, Just and Edgar, also addressed subject and verb agreement, a grammar feature she assumed all of her students were not prepared to understand.
What Students Say They Will Do versus What They Actually Do

Ms. A. made two unanticipated discoveries regarding what her students reported they would do compared to what they actually focused on as they edited their writing. Prior to their using the editing tools, Ms. A had asked them to predict how they would use the information the editing tools gave them; students consistently said they would use the options, even though they did not (Table 3). Ms. A. also discovered that there were real and important differences between what students identified as their writing “problems” and the feature they actually addressed. In the final week of the study, Ms. A. had surveyed her eight students to find out what problems they felt they needed to address. Even though all eight students had focused first and foremost on making more sense of the writing, five of the eight students identified three different issues as being problems (Table 4). Ms. A. concluded that the five students had identified an issue that was difficult for them when she asked them or was a problem Ms. A. had previously pointed out as an area needing improvement. However, as their responses demonstrated, the five students attended to these various problems only when the problems interfered with the students’ intended meanings. If their writing made sense, the students simply ignored the problems.

Table 4
Writing Problems Identified and Ranked by Students

<table>
<thead>
<tr>
<th>Problem</th>
<th>Number of Students Identifying Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sense</td>
<td>3</td>
</tr>
<tr>
<td>Topic sentence</td>
<td>2</td>
</tr>
<tr>
<td>Capitalization</td>
<td>2</td>
</tr>
<tr>
<td>Neatness</td>
<td>1</td>
</tr>
</tbody>
</table>

Time, or Too Little of It

For Ms. A., time gradually grew to become an unanticipated problem. Loucks-Horsley et al. (1998) have noted that time is one the most important commodities teachers need to conduct action research but the one commodity they consistently lack. Like most teachers, Ms. A’s day was already bursting at the seams, with students busy working on individual and small group projects and activities. In addition, Ms. A. had to prepare students for a recently mandated writing test. So in order to conduct her study, Ms. A.
worked it into her preparation and lunch periods, for she decided these were also the best times to observe and listen to her students as they typed, revised, and edited their writing. And lunchtime proved to be one of the better times for her students to type.

Students’ slow typing speed also proved a far more time consuming task than Ms. A. had anticipated. At the beginning of the project, Ms. A had not considered typing an important issue: “I didn’t even consider this issue, I’ll be honest…. I’m fascinated that typing is viewed as a difficulty.” Ms. A had wanted her students to manage the entire process, from writing to typing through revision and editing. She had initially decided not to use a typing tutor, but like she had learned, to let her second graders learn to type on their own. Britten (1988), however, found that elementary students who learned to type systemically not only improved their typing skills but took less time to type longer texts, as compared to students who used the hunt and peck method. Joram, Woodruff, and Lindsay (1990) also concluded that young students who learned to type were better able to make revisions of their text, including surface-level (capitalization and punctuation), and meaning-level revisions.

By the beginning of the second month, Ms. A. realized how much time her young students needed to type, revise, and edit their writing (one student read and another typed), and she became increasingly frustrated. They needed far more time to type than the two-twenty sessions she had allocated, and also needed time to revise and edit their typed writing, make their predictions, discuss their typed writing, and make revisions. And she had initially wanted the student teams to type, revise, and edit two pieces of writing. However, by the end of the second month, Ms. A. was beginning to wonder if her self-taught style was going to work for her students:

They’ll do it like trial and error….That’s the way I learned to type. And it’s working okay. I think that they’re very happy about what they’re doing. And a lot of them are very content with the work that they’re producing. Unfortunately, my research study is not about whether children can type on a computer. My research study is about the editing process. And the input process is taking a really, really long time.

By the beginning of the third month, Ms. A decided that, if she was going to find out if the editing tools were going to be useful, she needed to reduce the amount of time her students needed to work through this entire process. In order to solve the typing problem and still determined to see how
and if the editing tools would be useful, Ms. A. purchased speech recogni-
tion software and read the students’ writing so the program would “write”
their text. However, the software proved a waste of time because she found
that training the software was not working and purchasing the more expen-
sive version was not possible. By the beginning of fourth month, Ms. A. de-
cided to type the remainder of her students’ writing so they would have
time to focus on a typed version. Ms. A made this decision because she
simply could not find enough time.

Next Steps—Modifying Instruction

By the end of the fourth month Ms. A felt she had sufficient evidence
to show that, as compared to her children, her students had not been able
learn more about spelling, capitalization, or punctuation with the electronic
tools:

I thought that this program was going to do something a lot simpler
for me. I thought it would put in some periods. I thought it would
make sure that they would capitalize….When they ran the spell check
and the grammar tools, the tools didn’t pick up very much…the gram-
mar editor doesn’t say what the person wants to say. But I was hoping
that that would sort of help them iron it out. And it helped them iron it
out to a very limited extent.

Ms. A. then decided that her students would learn to develop their writ-
ing and their reading if they could experience many more planned opportu-
nities to talk, write, and read with more advanced students. She began plan-
ning for a class of fifth graders to read and talk with her younger students.
In effect, Ms. A came to realize the electronic editing tools were not a sub-
stitute for authentic language development and could not fill in what she
had earlier described as a “gap” in her students writing abilities.

IMPLICATIONS FOR CLASSROOM INSTRUCTION

There are four major implications to be drawn from Ms. A.’s action re-
search study, each important for teachers and administrators to consider
when deciding how to support young students’ language development and
teachers’ use of action research:
1. Young second grade students do not use and cannot be expected to learn to use electronic writing and editing tools in ways similar to older and more experienced writers;

2. Electronic writing and editing tools cannot be thought of or used as substitutes for meaningful and purposeful language development;

3. Young students’ willingness to learn more about reading and writing can be supported and nurtured when their ownership of their writing is respected and honored within a collaborative milieu;

The value of action research:

4. Teachers can develop new knowledge about their students as they deliberately study their instructional practices and value their students’ experiences as an important source of information and evidence.

A Final Word

Ms. A. is an excellent teacher because she makes conscious and deliberate attempts to understand her young students from their perspective and experience, works to understand content and pedagogy, applies this knowledge in her teaching, and because she cultivates professional dispositions and attitudes that support her students’ learning and her own professional development. She offers a model of a confident, wise, and effective teacher willing to take risks and learns along with her young students.

References


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**Note**

1. Pseudonyms are used throughout this article. I wish to thank Ms. A. for her commitment to seeing this project through to the end and to her steadfast commitment to the education of her second graders.