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ABSTRACT

This study investigated what happened when the "Ultimate Writing and Creativity Center" computer program was utilized by four second grade students in an after-school writing workshop. The setting for this study was a public elementary school in a suburb of Philadelphia. The sample consisted of four students in second grade. The selection of students for this study was based on writing interest and ability shown in first grade. Two students were girls and two students were boys. The study found that using the "Ultimate Writing and Creativity Center" program with the students gave them ideas and motivation to write. The study found certain components to be very beneficial for these particular students and a few components to be more difficult for them. The "Ultimate Writing and Creativity Center" was found to be a very valuable writing tool for the students in this study. Suggestions are included for teachers who may want to use this computer program with their students. (Contains 18 references.) (Author/AEF)

The Role of Technology in Teaching Young Writers

Christine Michelle DerMovsesian

Master's Thesis

Submitted in partial fulfillment of the requirements for the
Master's Degree in Applied Technology
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Abstract

This study investigated what happened when the *Ultimate Writing and Creativity Center* computer program was utilized by four second-grade students in an after-school writing workshop. The setting for this study was a public elementary school in a suburb of Philadelphia. The sample consisted of four students in second grade. The selection of students for this study was based on writing interest and ability shown in first grade. Two students were girls and two students were boys.

The researcher of this study found that using the *Ultimate Writing and Creativity Center* with four second-grade students gave them ideas and motivation to write. The researcher found certain components of the program to be very beneficial for these particular four students and a few components to be more difficult for them. Included in this study are suggestions for teachers who may want to use this computer program with their students. The researcher found the *Ultimate Writing and Creativity Center* to be a very valuable writing tool for these four second-grade students.

The Role of Technology in Teaching Young Writers
Christine Michelle DerMovsesian

Problem Statement

The purpose of this study is to find out how using the *Ultimate Writing and Creativity Center* will affect the writing of four second-grade students. The research question is:

How do second graders learn to use the computer program titled *Ultimate Writing and Creativity Center*?

Some considerations that are related to my research question are:

1. Does the program help the students generate ideas for their writing?
2. Do the students prefer typing to writing by hand?
3. Do the students write more when using the program than they do with paper and pencil?
4. Does this computer program help the students' spelling in their writing?
5. Do the students review their work and correct mistakes when using the program?
6. What are the areas the students have difficulty with when writing with this program?
7. Are the students motivated to write when using technology?

The primary grades are an important time for building a strong foundation in many educational areas. Reading, writing, spelling, phonics, and math are the core academic areas. While all the areas mentioned can be a challenge for first graders, the area of writing has been a struggle for many of my students over the past four years. This report presents the findings of a study that examined how four second-grade students used the *Ultimate Writing and Creativity Center* for their writing.

The *Standards for the English Language Arts* (1996), as developed by the International Reading Association (IRA) and the National Council of Teachers of English (NCTE), provide guidance for creative curriculum development that builds on the language skills that students bring to school. The Teacher's Guide of the *Ultimate Writing and Creativity Center*, by The Learning Company, identifies the following standards as those supported in its program.

Standard 4. Students adjust their use of spoken, written, and visual language (e.g., conventions, style, and vocabulary) to communicate effectively with a variety of audiences and for different purposes.

Standard 5. Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.

Standard 6. Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique, and discuss print and nonprint texts.

Standard 11. Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy communities.

Standard 12. Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information). (Franklin, 1997, p.7)

Another set of standards important to this study was developed by the International Society for Technology in Education (ISTE). ISTE has established National Educational Technology Standards (NETS) in an effort to connect technology with curriculum. The technology standards for all students are divided into six categories. "Standards within each category are to be introduced, reinforced, and mastered by

students" (ISTE, 1999). ISTE encourages teachers to use these standards "as guidelines when planning technology-based activities in which students achieve success in learning, communication, and life skills" (ISTE, 1999). Identified below are the categories and standards that pertain to this study.

1. Basic operations and concepts
   - Students demonstrate a sound understanding of the nature and operation of technology systems.
   - Students are proficient in the use of technology.
2. Social, ethical, and human issues
   - Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
3. Technology productivity tools
   - Students use technology tools to enhance learning, increase productivity, and promote creativity.
   - Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

In conjunction with these standards, ISTE has identified a general set of performance indicators for technology-literate students in grades K-2. These performance indicators and associated standards "provide a framework for preparing students to be lifelong learners who make informed decisions about the role of technology in their lives" (ISTE, 1999). All students should have opportunities to demonstrate the following competencies.

Prior to completion of Grade 2, students will use input devices (e.g., mouse, keyboard) and output devices (e.g., monitor, printer) to successfully operate computers, use a variety of media and technology resources for directed and independent learning

activities, communicate about technology using developmentally appropriate and accurate terminology, use developmentally appropriate multimedia resources (e.g., educational software) to support learning, work cooperatively and collaboratively with peers when using technology, practice responsible use of technology systems and software, create developmentally appropriate multimedia products with support from teachers or student partners, and use technology resources for illustration of thoughts, ideas, and stories.

Technology, by itself, may not be the key to motivating and inspiring young writers. "We suggest that facilitation of a child's cognitive development through interaction with software is more likely to succeed when the software is integrated into the curriculum with clear instructional goals" (Lehrer & Randle, 1987, p. 425). While teachers may have difficulty seeing what is limiting their students' writing, it may be helpful for teachers to know how technology can be used to benefit and motivate students to write.

Literature Review

From my experience, motivation seems to be a critical factor when dealing with children who are learning the basics of how to write. For some children, learning how to write may come with ease and be an enjoyable task. For other children, writing may be very difficult, especially if reading is hard for them. It may not take much to motivate those children who like to write. But, what about those children who, even at an early age, don't like to write? Children in my class who have difficulty thinking of ideas, seem to have trouble spelling words, or struggle to complete tasks individually, seem to resist writing and may exhibit a negative attitude toward it.

Individuals who have a pessimistic attitude about themselves have difficulty achieving success in motivation, learning, and thinking (Moore et al., 1998; Seligman, 1998; Weiner, 1994). Optimists have positive attitudes and are able to achieve success through being persistent and trying their best (Seligman, 1998). I want my first graders to have an optimistic attitude towards their own writing skills and abilities.

There are many practices that have been successful when teaching children how to write, such as having a user-friendly writing center (Meagher, 1986), focusing on the students' thinking (Moore, Moore, Cunningham, & Cunningham, 1998), stimulating the children's inner voice by keeping open and continuing dialogue between children, peers and adults (Golub, 1971), using word processing (Cochran-Smith, Paris, &Kahn, 1991; Jones & Pellegrini, 1996; Montague, 1990), and using computer programs (Catchings & MacGregor, 1998; Dahl &Farnan, 1998; Montague, 1990).

Children write by using personal experience as a source of inspiration (Alofs & Gray-McKennis, 1990; Dahl & Farnan, 1998), influences by the curriculum, literature, peers, teachers (Alofs & Gray-McKennis, 1990), and beliefs in the home and community (Dahl & Farnan, 1998), using captions to explain their drawings (Alofs & Gray-McKennis, 1990), and composing ideas for writing first through developing a picture (Dahl & Farnan, 1998; Dyson, 1989).

"It seems clear that technology can enhance students' writing proficiency" (Dahl & Farnan, 1998, p. 107). In general, the authors seem to suggest that technology can be a useful tool for motivating young writers. Technology may assist with creativity, lessen children's focus on handwriting and spelling, and encourage revising. The studies reviewed suggest that children who are beginning to learn how to become better writers may find word processing and computer programs to be beneficial tools in developing writing skills. With the technology available today, teachers have the opportunity to

teach in a unique and different way, while providing stimulating writing experiences for children (Montague, 1990).

Research Methodology

The setting for this study was a public elementary school in a suburb of Philadelphia. My study took place in the Library computer lab. The sample consisted of four students in second grade, who were in my first grade class during the 1999-2000 school year. The selection of students for this study was based on writing interest and ability shown in first grade. I chose two students who had demonstrated difficulties during journal writing. The difficulties I focused on were: difficulty generating ideas from a sentence starter; difficulty focusing on the morning journal writing; and lack of confidence in writing ability. I chose one student who had average abilities and interest in terms of writing. And, I chose one student who had high abilities in writing but may not have always used them. Two students were girls and two students were boys.

The program I used with the students was the *Ultimate Writing and Creativity Center,* a writing program created by The Learning Company. The cover of the program says "The Complete Word Processing and Creativity Program that Makes Writing Exciting and Helps Students Learn to Write." The publisher claims that "The *Ultimate Writing and Creativity Center*'s features make this program a highly motivating tool for your classroom" (Franklin, 1997, p. 7). There are four main components of the program: the Picture Place, the Word Processor, the Writing Idea Lands, and the Presentation Theater. The program seems to be user friendly for young students. There is a character named Penny who provides tutorials and answers questions about different aspects of the program.

My study began September 27, 2000 and continued through November 8, 2000. I met with the students each Wednesday, after school, for a one-hour session. There were a total of six sessions in all. I assumed the role of teacher-researcher in this study. The role of teacher was most important at the beginning of the study. I taught the participating students what I wanted them to learn about the program and how to use it for their writing. I allowed the students time to experiment with the program before beginning to use it as part of the study. I was present as a participant-observer at every session to answer questions and provide guidance. As the researcher, I observed the students and analyzed the data I collected.

I collected the following kinds of data: videotapes of the six sessions; jottings from the video of session 1; transcriptions of the videos from sessions 2, 3, and 4; review of the videos from sessions 5 and 6 for supportive data; audiotapes of individual interviews during sessions 2 and 6; transcriptions of the audiotapes from the eight individual interviews; asking students to explain their thoughts and actions while working with the program; informally interviewing students after each session; and printing work completed by each student at the end of every session.

Data were analyzed in order to answer my research questions. As the researcher of this study, I was investigating how second graders learn to use the computer program titled *Ultimate Writing and Creativity Center*. I was also interested to find out whether the program motivated the students to write, and also, if it does, how that happened and why. In addition to the interviews, I observed how the children interacted with the program and each other. Videotaping and audiotaping allowed me to view and review what occurred or hear things said in that day's session or during an interview. I collected samples of the students' work throughout the study to see if there were identifiable changes.

The study investigated what happened when the *Ultimate Writing and Creativity Center* was utilized by four second-grade students in an after-school writing workshop. In the following section, I will describe what happened when four second-grade students used the *Ultimate Writing and Creativity Center* in an after-school setting, and what that experience indicated about the possibilities for this program in the second-grade curriculum.

Findings of the Study

There were seven findings of this study. My first finding was that the students did not use the part of the program that I thought would be most helpful, the Writing Idea Lands. My second finding was that the students used the Picture Place component extensively through the study. My third finding was that the students asked certain kinds of questions, and that the kinds of questions changed over time. My fourth finding was that it took these four second-grade students a while to learn how to use the program. My fifth finding was that the students interacted with each other more as the sessions continued. My sixth finding was that the Presentation Theater provided a way for the students to hear their writing and identify their mistakes. My seventh, and final, finding was that the UWCC program was highly motivating for these four second-grade students. In this section, I explain how I reached my results and discuss each of the findings in greater detail.

I began my data analysis by coding the transcripts from sessions 2, 3, and 4. I coded each transcript by writing words or phrases beside each conversation or situation to categorize what was happening. An example of codes I gave to a situation in session 2 is as follows:

SQuestion—How to?	David—"What would I type to find people?"
Binder help	I showed him how to get to the column of people.

SQuestion stands for Student Question. Many of my codes are abbreviated so they could fit directly across from the situation.

After the coding process was complete, I read back over all the codes numerous times. I wanted to see if there were similar types of codes repeating throughout these three sessions. I then made a table that listed the codes pertinent to my study. I eliminated codes that were not pertinent to the study.

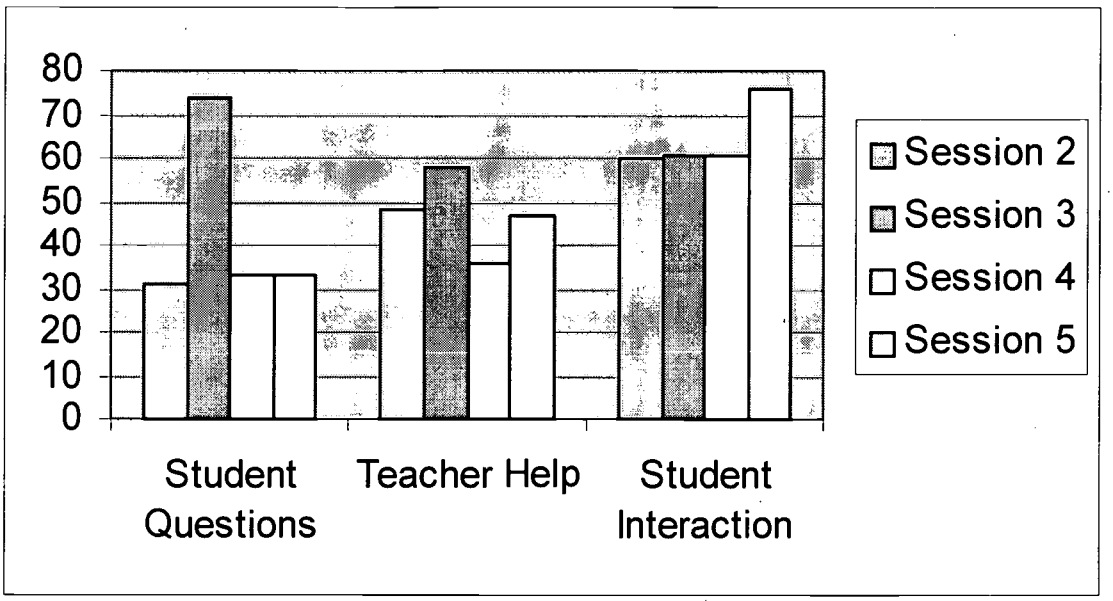
Once I listed the codes pertinent to my study, I counted how many times each code was found in sessions 2, 3, and 4. I entered the information into one large table. After studying these codes, I did some rearranging in the table to place codes together that were related in some way.

In an effort to understand the results I had gathered as a whole, I decided to condense the codes, into three more broadly defined codes. The three codes I decided on were: Student Questions; Teacher Help; and Student Interaction. For each code, I added up how many occurrences there were in the individual sessions.

Code	Session 2	Session 3	Session 4
Student Questions	31	74	33
Teacher Help	48	58	36
Student Interaction	60	61	61

This table provided a better picture of the progression and regression of Student Questions, Teacher Help, and Student Interaction. After combining the codes, I viewed the video from session 5 with these three codes in mind. I tallied how many times each of these codes occurred and added the numbers to the table.

Code	Session 2	Session 3	Session 4	Session 5
Student Questions	31	74	33	33
Teacher Help	48	58	36	47
Student Interaction	60	61	61	76



The same results can be viewed in the bar graph. This graph gives a visual image of the increases and decreases that took place during sessions 2-5 in relation to the Student Questions (asked of the Teacher), Teacher Help, and the Student Interaction in this study. It needs to be noted that during session 4, students had less time to work on their own, due to planned time spent sharing their work with the other students. I believe that if session 4 had been conducted in the same fashion as the others, a more gradual decrease in Student Questions and Teacher Help may have been observed across the sessions, along with a more gradual increase in Student Interaction.

First Finding—Writing Idea Lands

As the researcher and participant observer of this study, I observed a variety of behaviors when the children were working with the *Ultimate Writing and Creativity Center* program. I began the first of six sessions by introducing the four second-graders to the program. I demonstrated how to get into the program, how to go to different places within the program, and how to use many of the tools the program provides.

Right from the start of my demonstration, all four students seemed very excited to find out about the Writing Idea Lands. David asked a question about the Writing Idea Lands when I had just opened the program. When we got to that part of the tour, I explained that this area of the program could help them get ideas to write about. The students really liked watching the animation before the idea appeared. I reminded the students, "We're not just clicking on it to see what it does; we're looking for ideas to write about." I told the students I would help them read the ideas if they were not able to.

After my demonstration of the program, the four students began individually using the *Ultimate Writing and Creativity Center* program at their own computer. They all began looking through the Writing Idea Lands and copying ideas into a Notebook. The Notebook is part of the computer program. Sarah asked me to read the ideas on the screen to her. After reading about three of the ideas on a topic that she chose, she shook her head "no" to each one. I could tell she wasn't very interested in any of the ideas I had read to her so far. Then she asked me, "Can you think of your own story? Could you write about your own animal?" After I said, "Definitely. You may start any way you like," she began typing a story right away.

Immediately after helping Sarah, I went back to check on the other three students. David asked me, "What does that say (pointing to a title in an Idea Land)?" So, I helped him read it. After looking at the Writing Idea Lands for a few minutes, he wanted help

getting to the Picture Place. All four students did not return to the Writing Idea Lands after the first session.

My first finding of the study was that the students did not use the part of the program that I thought would be most helpful. I found it interesting that the portion of the program that the students were most excited about using at first, ended up not being used past the first session. During individual interviews in the last session, I asked the students if they used the Writing Idea Lands to help them get ideas for their writing. Sarah shook her head no when I asked her if she used the Writing Idea Lands to help her come up with ideas to write about. She couldn't explain why she didn't use them. She just said, "I don't know." When I asked Melissa if she tried using the Writing Idea Lands, she said, "I like the anteater because he sings 'Figaro, Figaro'." The conversation continued as follows:

> Me: But did you use them (the Writing Idea Lands) to get ideas?
> Melissa: Yeah.
> Me: Then did you write about those ideas?
> Melissa: No.
> Me: How come you think you didn't use them?
> Melissa: Because I didn't really want to write about animals.

David told me he did use the ideas in the Writing Idea Lands "but not that much." Here was Tim's response when I asked him similar questions.

> Me: Did you use the Writing Idea Lands?
> Tim: No.
> Me: How come you didn't use them?
> Tim: I used them in the beginning just to get ideas.
> Me: Did they help you get ideas?
> Tim: Nah, not really.

In talking with the four students in my study and going over my observations, the results were all similar in reference to the use of the Writing Idea Lands. The students all tried the Writing Idea Lands at the beginning of the study, but they chose to use other parts of the program for generating ideas. Possibly, the reason the students chose to use

other parts of the program may have been because they were easier to use than the Writing Idea Lands.

Second Finding—Picture Place

In each final interview, I asked : Do you think that this program helped you get ideas for your writing? Each student answered yes, and some students were able to explain what part of the program they used to gather their ideas for writing. For example, when interviewing Tim in the last session, the interview from above continued this way.

> Me: So what *did* help you get ideas?
> Tim: By using the Binders to 'Find' stuff.

The Binders are a part of the Picture Place section of the program. The Binders contain different types of animation, art, music, photographs, and sound that can be placed into a picture. The 'Find' feature allows a student to search for a specific item within the Binders. Melissa had a similar response to Tim's that dealt with using the Binders for ideas.

> Me: How *do* you think it (the program) helped you (get ideas)?
> Melissa: Umm…the Binders because they have pictures and when you click on 'Find', you can type what you want to find.

Sarah told me that she also used a part of the Picture Place to help her generate ideas for her writing.

> Me: You said "Yes" that the program did help you get some ideas for writing. So what part of it helped you get ideas?
> Sarah: By looking…by picking a background, and then looking at the background to see what you could write about that.

My second finding was that the students used the Picture Place component extensively through the study. Beginning with the second session, I observed that three of the four students were creating a picture in Picture Place first, and then they developed their writing from the picture they had created. The other student, at first, started by writing and then created a picture to go with her story.

The pattern of creating the picture first followed by writing about it continued through to session six. In the final individual interviews, I questioned the students about what I had observed. This is how several of the students responded.

> Me: Sometimes I noticed that you put together a picture first and then wrote about it. How come you did that?
> Melissa: Because it's more easier. You can think about what you're going to write about and then you draw a picture of it first. Then if you forget what you're going to write about, you always have a picture to look at.

> Me: Sometimes I noticed that you put together a picture first and then wrote about it. How come you did that?
> Tim: Because when you put your picture together, then you can look at the picture and then think about what you're going to write about. When you write first, then you might get all mixed up and write about a whole different subject.

Third Finding—Student Questions

Although the students had some time to explore the program in the first session, they needed more time to explore and learn how the program worked. The questions the students asked in the second session were mainly "How to" questions about getting around the program. I noticed the four students explored the program quietly and to themselves for the most part during the second session. Most of the questions they had were directed toward me.

In the third session, there continued to be many "How to" questions about the UWCC program. However, the students began to ask more "Can I" questions about what they could do, since they were becoming more comfortable with the program. For example, Sarah asked, "Can I do one (a song) for Halloween?" The students also began to ask "Spelling (Binders)" questions during this session. The students started to use the Binders to look for different types of animation, art, music, photographs, or sound that could be placed into their picture. They soon found out that when using the "Find" feature of the Binders, they had to spell the word correctly in order to find a picture of it

in the Binders. Therefore, many of the questions asked in the third session dealt with the exact spelling of a word when searching in the Binders.

My third finding was that the students asked certain kinds of questions, and that the kinds of questions changed over time. By the fourth session, all types of questions began to decrease. Throughout each session, there continued to be some questions about how to run the program but not as many as time went on. All four students were now able to produce a picture and a story without many questions asked. The students were now asking more collaborative questions of each other, along with sharing their work with one another.

Fourth Finding—Teacher Help

As the teacher, I needed to provide timely help to get them started. I used most of the first session to introduce the UWCC program, so the students would begin to become familiar with how it worked. At the beginning of each session, I made sure the students were logged on correctly and found what they wanted to begin work on.

My fourth finding was that it took the four second-grade students a while to learn how to use the program. Much of the help I gave in the second session was in reference to the Picture Place component of the program. This type of help (written in italics on the table) decreased as the students became familiar with how it could be used. There were other kinds of help I gave to the students when they asked. Below is an example of Teacher help I coded as "Word Processor help".

SQuestion—How to? Word Processor help	Sarah—wanted to know how to get to the beginning of a new line; I also told her the writing will just move down when it gets to the end of the line.

As with the Student Questions to the teacher, the Teacher Help was needed throughout the sessions. Similar to the Student Questions, the Teacher Help began to decline as the students interacted more with each other.

Fifth Finding—Student Interactions

My fifth finding was that the students interacted with each other more as the sessions continued. The Student Interactions were also different in the various sessions. The student interactions were more about how to run the program in sessions 2 –3 and more about writing in session 4-5. Here are some examples of interactions the students had with each other.

Session 2

Tim asked Melissa—"Are you done your background?"
Melissa nodded yes.
Tim—"Just click on that." Tim showed her the icon to click on so she could write beneath her picture.
Tim—"Just like I'm doing…Melissa…just like I'm doing."

Session 3

Tim read part of his story to David.
David—"Where is that (question mark)?"
Tim—"You do this. And look (points to his screen) and it does that. It's 'Shift' and then this."
David—"Oh, let me try that." (He leans back over to his own computer to try it.) You do 'Shift' and then…? (waiting for Tim to respond if that is correct so far)"
Tim—"Hold on to 'Shift' and then hit that." (Tim helps David by pointing to what he needs to push.)
David—"Cool!"
Tim to Me—"I taught David how to do something. I taught David how to do the question mark."

Session 4

David—"Mrs. D how do you find some…I need a boat to put in my picture if they have any."
Me—"A boat?"
David nodded his head yes.
Me—"O.K. I'll tell you how to spell it."
Before I could even say, "I'll tell you how to spell it," Tim said, "b..o..a..t."
Me to Tim—"Yes."
Tim leaned over to David so he could spell it slowly for him again while he typed it.
Tim—"b…o…a…t" With each letter, Tim waited for David to find that letter before he told him the next one.

The students in the study were seated directly next to one another. Therefore, having the visibility of each student's work may have made it easier for them to help each other.

Sixth Finding—Presentation Theater

At the beginning and end of the fourth session, I acted in my role as teacher. I had noticed that much of the students' work was lacking spaces, periods, and capitals. I decided to have a mini-lesson using samples of the students' work to teach them how to edit their own work and make their writing better. We used the Presentation Theater component of the UWCC program to listen to the stories each student had written so far. We also used a speaker that would allow the stories to be heard by everyone.

I began the lesson by introducing the Presentation Theater and demonstrating how to get there in the UWCC program. After telling the students what the Presentation Theater could do, I asked them for suggestions as to how they could use this part to help with their writing.

> Me—"Now the Presentation Theater can help in a few ways. When you click on 'Tools' and use the 'Read Me' part, it can read your story back to you. Who can tell me how that can maybe help you, by hearing it in your ears?"
> David—"You can help by letting your friends hear it and see if there is anything wrong and tell if it makes sense."

> Me—"Does anybody know anything else? How about when you hear it and you are looking at it, how could that help you?
> Tim—"To see if you have any mistakes, like when they read it, like…no periods."

David's first story didn't contain any periods. Therefore, we learned if you don't put periods in your story, the Presentation Theater reads through the whole story without stopping. The students all noticed the story sounded different because there were no periods. So, my first mini-lesson involved demonstrating how to move the cursor to the end of a sentence and add a period.

Next, we listened to a story, which was actually a song, written by Sarah. After hearing the song read on the Presentation Theater, Sarah said, "It sounds like someone speaking Chinese." The reason she had this reaction after hearing her own story was because there were no spaces between any of her words. The Presentation Theater read her song as one long word. Therefore, my next mini-lesson involved showing the students how to place the cursor directly between two words and push the space bar to make a space.

Melissa was next to share one of her stories. David, looking at Melissa's screen, said, "This looks like a good one." We listened to Melissa's story using the Presentation Theater and together realized she was missing capital letters at the beginning of her sentences. The computer did not read her story differently without the use of capital letters. We discussed what could be added to Melissa's story to make her writing better. My next mini-lesson showed the students how to place the cursor before the letter, delete the letter, and make a capital letter by holding 'Shift' and the letter.

Last, we listened to one of Tim's stories. He had already learned on his own, in the previous session, how to identify a misspelled word in his story by using the Presentation Theater. After we listened to his story, I asked Tim to explain what happened the last time he listened to his story on the Presentation Theater.

> Me—"Tim, that was great. Now, Tim, I would like you to tell the boys and girls what you did last time when you heard it. Remember when you heard it say 'A humming was flying'? How did that help you?"
> Tim—"By reading it."
> Me (I explained for Melissa, Sarah, and David)—"Last time, he heard 'A humming was flying.' It made him think he had to fix something. Tell them about it."
> Tim—"Then I went back…and, and, and I thinked, 'What was missing?' And then I found out bird and then I went back and fixed it."

I then demonstrated for the students how to fix a misspelled word in their writing. Previously, in the other sessions, I had showed the students how to use the 'Spell Check'

feature to find the correct spelling of a word. This feature did not really help most of these second-grade students to identify the correct spelling of a word. Because they are still learning to spell, it was difficult for them to choose which of the suggested spellings was correct for the word they were looking for. Also, the computer did not always recognize the word they were trying to spell.

My sixth finding was that the Presentation Theater provided a way for the students to hear their writing and identify their mistakes. It also provided opportunities for me, as the teacher, to teach mini-lessons on how to edit their work and correct their mistakes. Right after my mini-lessons, all four students put capitals at the beginning of their sentences. Also, I saw more spaces between their words and more periods at the ends of their sentences.

Seventh Finding--Motivation

My seventh finding was that the UWCC program was highly motivating for these four second-grade students. First, the students showed up to an after-school study on writing, and some let me know they were excited about it. David said to me, at the end of the day, after a hug, "The day after tomorrow I get to go with you after school!" On another day, Melissa said to me, "Two more days 'till I get to go with you!" Second, the students stayed on task and worked very hard. All four students put lots of effort into everything they created, both pictures and stories. Third, all four students asked questions of the group. It was neat to watch them become less dependent on me and more collaborative with their peers. And, one month after my study was over, Tim was very excited to tell me his mom had purchased the UWCC program for his home use.

Here are some other examples of motivation from things the students said.

Melissa—"Mrs. D, You know that story I printed out (one from last session)…I read it to my class."
David—"So did I. I read my first one."

Me—"First I want to ask you, what do you think about using the program?"
Sarah—"It was good."
Melissa—"It's funner doing it on the computer because of the buttons."
Tim—"Fun."
David—"It was really fun because I typed lots of stories and I didn't always have fun when I typed stories. It feels like I'm a writer for a book."

As the researcher of this study, I found that using the *Ultimate Writing and Creativity Center* with four second-grade students gave them ideas and motivation to write. Although they did not use the Writing Idea Lands to help them generate ideas, these four students showed me that the Picture Place could be used for this purpose. The students put a lot of time and thought into creating their pictures that would later develop into stories. They asked fewer questions as the sessions continued. In other words, the students needed lots of help to start, and then different kinds of help to continue. The students learned to use the Presentation Theater as a tool for not only listening to their stories but also for identifying mistakes in their stories. They began to interact more with each other as they became more comfortable with the program. I believe that if I had continued this study for another three months, these four students probably could have worked almost independently.

Implications of the Study

The award-winning computer software titled *Ultimate Writing and Creativity Center* is said to be for children between ages 6-10 and grade levels 2-5. The four second-grade students, all about eight years old, who took part in my study, met the suggested age and grade level requirements. Using my experience as a primary grade teacher and as the researcher of this study, I found certain components of the program to be very beneficial for these particular four students and a few components to be more

difficult for them. I have included some suggestions for teachers who may want to use this computer program with their students.

I would recommend that teachers using the UWCC program with young students allow time for the students to learn and explore the program. Through exploring, the students can learn different features of the program.

> Sarah—"Mrs. D, what's the 'Writing Tips'?"
> Me—"Why don't you click on it and see?"
> She clicked on it. Sarah and I looked at it together. She went to the part that says 'Content'. I explained to her that it tells you what is in the program. I also showed her how it explains in detail what the different steps of the Writing Process are if you were unsure.
> Me—"Was there a question you had or were you just wondering what it did?"
> Sarah—"I was just wondering what it did."

The four students in my study really began to understand how the program worked by the fourth session, which was equivalent to about four hours of working with the program.

The four students in my study asked me questions throughout the study. As mentioned in the previous chapter, the questions they asked at the beginning of the study were different from the questions they asked at the end. I feel that if the students in my study had more time to work with the program on a more consistent basis that they would not have asked as many similar repeating questions.

If I were teaching a whole class, or even small groups, about the basics of getting around the UWCC program, I would plan to use a computer lab with possibly a large screen or monitor. I think it would also be beneficial for the students to have the program on a computer in front of them. Then, as I would model something on the larger screen, the students would be able to immediately try it on their own computer. It would also be helpful if there were technology support staff available to help with initial sessions. But young students can be very helpful to one another, and the extra support might not be necessary.

There are two important skills to teach students right from the start of using the UWCC program. First, they need to learn how to 'Log on' and find their name on the list in order to begin working. Second, they need to learn the correct way to 'Save' their work. The students in my study had some problems with remembering to 'Save', and two of them lost their work. As soon as students change their screen to work on something else, their previous work needs to be saved or it could be lost.

One of the first components of the program that the students in my study were introduced to was the Writing Idea Lands. As I mentioned in Chapter 4, the students were very eager to go to and learn about the Writing Idea Lands. I anticipated that how the students used this component would be a main focus of my study. These four students all had difficulties coming up with ideas to write about when they were in my first grade class. Therefore, I thought this program would be helpful for them, specifically when using the Writing Idea Lands. However, this was not what happened. When the students were first exploring the Writing Idea Lands, many of the ideas were difficult for them to read. I noticed the students click right by the ideas that were written in paragraph form. I think they may have looked a little overwhelming to them. I read some of the ideas to two students and the other two students did not want me to read any ideas to them.

Due to the age range this program is geared to, younger students may have reading difficulties in the Writing Idea Lands. I think it would be helpful for younger writers if there were a 'Read' feature that was designed for all parts of the UWCC program, specifically the Writing Idea Lands. There are many wonderful ideas offered. The ideas seem to be aimed more toward older students or better readers because some of the vocabulary is difficult. Therefore, it might be beneficial to use this part of the program with stronger readers.

If I were teaching a first or second grade class to use the Writing Idea Lands, I would begin by pairing the students together. I would pair the students by placing a stronger reader with a weaker reader. Also, I would stress the importance of both students being involved in deciding on an idea to write about. If I were using this program with third, fourth, of fifth graders, I might still pair the students at the beginning to provide a more collaborative environment, although, most of these students should be able to use the UWCC program independently if desired.

The Picture Place component of the UWCC program was where the students in my study chose to create most of the ideas for their writing. They spent a lot of time creating pictures; sometimes I felt it was too much time. If I were using this program with primary students, I would set a limit on the amount of time allowed to be spent working on a picture. I understand the students need time to be creative, but I also learned that students can spend a lot of time changing or adding to a picture instead of writing.

In the Literature Review, I mentioned Dyson's (1989) study on writers in a kindergarten class. When working with pencil and paper, she found the students put most of their time and effort into their pictures; the writing below the pictures seemed to be a simple afterthought to their drawing. Dyson asked two of the kindergartners to express their feelings about writing about the picture:

> BRIAN: Why do we always have to write words?
> (Translation: Why can't we just write the pictures?)
> TEACHER: Well, I like to see what you're going to write.
> SARA: Why can't you just ask us? (p. 12)

A student in my study asked a similar question, even when using a computer program.

> Sarah—"Umm…Well, could I just draw a picture and not write about it?"
> Me—"Well, I'd like you to write about it."
> Sarah—"O.K. I'll draw a picture first. But how do I get to those things? The backgrounds?"

Me—"Click on this." I pointed to the screen.

After asking, Sarah continued to be a hard worker and put a lot of effort into her writing. She just wanted to clarify my expectations. Obviously, it is probably more fun to create a picture on the computer than to write about the picture. If students were using the UWCC program to create a picture and write about it, I would recommend that the teacher monitor the students as they work and let them know the expectations.

Although creating pictures can take a lot of time, I found that, in my study, the students' use of creating pictures could be understood as a rehearsal for their writing. In the final individual interviews, a couple of students explained to me why they created a picture first and then wrote about it.

> Melissa: You can think about what you're going to write about, and then you draw a picture of it first. Then if you forget what you're going to write about, you always have a picture to look at.

> Tim: Because when you put your picture together, then you can look at the picture and then think about what you're going to write about. When you write first, then you might get all mixed up and write about a whole different subject.

This echoes the findings of a study discussed by Dahl and Farnan (1998). They discussed that after working with first and second graders, a researcher found that young writers often begin composing their ideas when the illustrating is taking place. He observed that children discovered the meaning in many of their own stories first through the development of the picture, before any writing had begun.

The Binders, which is a feature located within the Picture Place, did pose some difficulty for the students in my study. When they were searching for a particular type of animation, art, music, photograph, or sound item to place in their picture, the students used the 'Find' feature to type in the name of it. They quickly discovered that the search word needed to be spelled correctly in order to 'Find' it. Soon, I was asked many

questions about spelling words for the Binders. The Binders feature is a very creative part of the UWCC program but may cause some difficulty for young students learning to spell when using the 'Find' command.

Since the second-grade students in my study all had a computer at home and used one quite often in school, their skills with using the Word Processing component of the UWCC program were good. I did learn that 'Spell Check', in the Word Processor component, is not always helpful for young students who are learning to spell. 'Spell Check' will not recognize a word unless it is fairly close to its correct spelling. Young students who are learning to spell may have difficulty recognizing which is the correct spelling of a word from a list of suggestions the computer offers.

One of my findings actually happened accidentally. The Presentation Theater provided a way for the students to hear their writing and identify their mistakes, along with providing opportunities for me to teach mini-lessons about editing their work. I would recommend that teachers using this program with younger students may want to use the Presentation Theater for teaching lessons on identifying and editing their mistakes. I waited to do this with the students in my study until after they had been working with the program for about three sessions. I wanted the students to be able to listen to the computer read each other's stories. And, while we were listening, we began to hear mistakes in the stories. This gave me an opportunity to demonstrate how these mistakes could be fixed. The students enjoyed listening to the computer reading each other's stories and learning how to fix mistakes on the computer. The students began using capitals, spaces, and punctuation after I taught them how to do so.

Teachers may want to use this software with students who are reluctant writers. When these four students were in my first grade class, I sensed they were already becoming pessimistic about writing. Seligman (1998) says a pessimistic attitude can be

changed to an optimistic attitude. I wanted to see if perhaps this UWCC program would help these students acquire an optimistic attitude toward writing. I found that this program did make a difference in motivating these four students to write. They showed up to each session, stayed on task and worked hard, and asked questions to learn more about the program. David explained his feelings of using the UWCC program to write.

> "It was really fun because I typed lots of stories and I didn't always have fun when I typed stories. It feels like I'm a writer for a book."

My research question was specifically: How do second graders learn to use the computer program titled *Ultimate Writing and Creativity Center*?

1. **Does the program help the students generate ideas for their writing?**

   Yes, this program did help the students generate ideas for their writing. Instead of using the component of the program designed to generate ideas, the Writing Idea Lands, the students in my study used the Picture Place component to help them with ideas for their writing.

2. **Do the students prefer typing to writing by hand?**

   I asked each student this question in the final individual interviews. Here were their responses.

   Me: Do you prefer writing your words in pencil or typing them?
   Sarah: I like to do both.
   Melissa: Computer because it's more easy. All you have to do is look for the letter that you want and type it in.
   David: Typing, because it's easier to type. You don't have to write the letters. You can just get the letter and type it.
   Tim: Type, because it's easier.
   Me: What makes it easier to type on the computer?
   Tim: Because you can just look at the word…because you can just look at the things (keys) like…Like on the thing 'was' or 'saw'. (Tim is referring to the fact that these three letters are right near each other. Therefore, it is easy to type the word 'was', or backwards, the word 'saw'.)

Three out of four students did prefer typing their writing rather than writing with pencil and paper. These three students felt it was easier to find the letter on the keyboard and type it rather than write the letter by hand.

3. Do the students write more when using the program than they do with paper and pencil?

I also asked each student this question in the final individual interviews. Here were their responses.

Me: Do you think you can write more on a computer or more with paper and pencil?
Sarah: More on the computer.
Me: Why do you think you can write more on the computer?
Sarah: Because if you fill it up on one page on the computer, you can go to another page.

Me: Do you think you can write more on a computer or more with paper and pencil?
Melissa: Computer.
Me: Why do you think you can write more on the computer?
Melissa: Because it goes more quick and because you can spell check your words.

Me: Do you think you can write more on a computer or more with paper and pencil?
David: More with computer because when I use pencil and paper my hand starts to hurt after awhile.

Me: Do you think you can write more on a computer or more with paper and pencil?
Tim: Pencil and paper.
Me: Why do you think you can write more with pencil and paper?
Tim: Because with pencil and paper you can write fast. But with the computer, you have to look at the keys to find the letter. But if you're an expert, then you can just type it right away. (Tim went on to explain to me that his mom is an expert typing on the computer. She doesn't have to look at her hands when she types. She has all the keys memorized.)

Three out of four students thought they could write more using the computer than with paper and pencil, although all three students had different reasons for why they could write more on the computer. David responded by saying, "...when I use pencil and paper my hand starts to hurt after awhile." The physical act of writing may be a struggle for some students and may interfere with the amount and quality of what is

written on their paper. So, for David, using this program to write made it physically easier and allowed him to write more using the computer program.

4. **Does this computer program help the students' spelling in their writing?**

No, this program did not help these four, beginning-year, second-grade students with spelling in their writing. I showed the students how to use the 'Spell Check' feature to find the correct spelling of a word. This feature did not help most of these second-grade students to identify the correct spelling of a word. Because they were still learning how to spell, it was difficult for them to choose which of the suggested spellings was correct for the word they were looking for. Also, the computer did not always recognize the word they were trying to spell. Possibly, at the end of second grade, these students would have found the 'Spell Check' feature to be more useful.

5. **Do the students review their work and correct mistakes when using the program?**

Yes, after teaching mini-lessons on how to make capitals, spaces, and periods, the students did review their work and correct their mistakes. The Presentation Theater component of the UWCC program provided a way for the students to hear their writing and identify their mistakes. It also provided opportunities for me, as the teacher, to teach mini-lessons on how to edit their work and make their writing better. Right after my mini-lessons, all four students put capitals at the beginning of their sentences, more spaces between their words, and more periods at the ends of their sentences. Learning how to edit writing is an important skill that is typically easier when using a word processor, as compared to pencil and paper. These four students were able to implement editing techniques to improve the quality of their writing.

6. **What are the areas the students have difficulty with when writing with this program?**

The four second-grade students had some difficulty learning to use the UWCC program. They asked many questions about using the program until they felt comfortable with it.

These students had reading difficulty in the Writing Idea Lands. Some of the ideas used vocabulary that was beyond second grade.

The Binders, a feature located within the Picture Place, posed some difficulty for the students in my study. The Binders feature caused some difficulty for these students who were learning to spell. When using the 'Find' command in the Binders, the students had difficulty spelling search words.

'Spell Check' also was difficult for these students to use. Again, these young students who were learning to spell had difficulty recognizing which was the correct spelling of a word from a list of suggestions the computer offers.

Individually, I asked the students if they had any difficulties using the program. Here was what they said:

Sarah: The only thing I had trouble with was getting that thing (cursor) to go down to the other line.
David: There was nothing that was hard for me or difficult.
Tim: No, just in the beginning…finding everything.
Melissa: At first finding things that you couldn't find.
Me: Do you think you got better at that?
Melissa: Yes.
Me: Why?
Melissa: Because I've been in the program for awhile. So it's probably really easy now.

7. Are the students motivated to write when using technology?

Yes, these four students were motivated to write when using technology. I asked each of the four students to be a part of my study because they were all reluctant writers at times in my first grade classroom. Throughout the sessions, I recognized signs of motivation, such as the students excitedly showed up to an after-school study

on writing, the students stayed on task and worked very hard, and all four students asked questions of the group. The UWCC program includes many bright and colorful interactive screens that appealed to these four second-grade students. This program made writing more enjoyable for them.

Me: Was there anything that you really enjoyed about the program?
David: Yeah, drawing the pictures, writing about it,...that was pretty fun.

Me: Was there anything that you really enjoyed about the program?
Tim: The WHOLE program!

This activity addressed the *Standards for the English Language Arts* (1996), as developed by IRA and NCTE and identified in their manual. It was clear that the students in my study used print and nonprint texts to communicate (Standard 4,5,12), learned to edit based on feedback from mini-lessons (Standard 6), and collaboratively worked together (Standard 6,11).

The International Society for Technology in Education (ISTE) has identified a general set of performance indicators for technology-literate students in grades K-2, the National Educational Technology Standards (NETS). In this study, students had the opportunity to address the following performance indicators (ISTE, 1999). The students used input devices (e.g., mouse, keyboard) and output devices (e.g., monitor, printer) to successfully operate computers. They used a variety of media and technology resources for directed and independent learning activities. The students communicated about technology using developmentally appropriate and accurate terminology. They used developmentally appropriate multimedia resources (e.g., educational software) to support learning. The students worked cooperatively and collaboratively with peers when using technology in this after-school setting. They practiced responsible use of technology systems and software. The students created developmentally appropriate multimedia

products with support from teachers or student partners. The students used technology resources for illustration of thoughts, ideas, and stories.

The four second-grade students in my study enjoyed using the UWCC program for their writing. In each final individual interview, I asked the students if they thought they would use it with their class if they were teachers. Here was what Tim told me in our conversation about this topic.

> Me: If you were a teacher, would you use this *Ultimate Writing and Creativity Center* with your class?
> Tim: Yes.
> Me: Why would you use it with your class?
> Tim: To help them with writing.
> Me: Do you think it helped you with writing?
> Tim: Yes.
> Me: How do you think it helped you with writing?
> Tim: I don't know.
> Me: What kind of kids do you think this program would be good for?
> Tim: All different kinds.

All four students had similar responses in that they would use it with their class to help their students write better, and because it is educational.

This research study was done as an exploratory program. Neither the students nor I had used this program prior to the beginning of the study. After several sessions of introductory work, where the students became familiar with the program, they learned to make good use of it for their writing.

I found the *Ultimate Writing and Creativity Center* to be a very valuable tool for these four second-grade students. Catchings and MacGregor (1998) wrote this about a study they did with first and fourth grade children.

> Children exhibit delight and enthusiasm when using these programs, but teachers wonder whether they hinder or enhance creativity and literacy. In fact, the ability of computer technology to support a broad array of visual forms—illustrations, graphs, animations, and video—makes it a valuable tool for developing visual literacy. (Catchings & MacGregor, 1998, p. 20)

I found that this particular computer program can enhance visual thinking skills along with promoting a basis for writing. After completing this research study, I agree with Dunfey (1989) that it is exciting, and important, for teachers to have a computer to use when teaching language arts.

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(Details about the data analysis are available from the author at cdermo@home.com)

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