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Writing is often the last aspect of acquiring English that English Language Learners (ELLs) learn to do well, especially in an academic setting. The purpose of this study was to find out if writing on a mobile, personal computer, the AlphaSmart, versus paper and pencil would increase the quantity and quality of the writing of eight- fifth grade ELLs. The students wrote journal entries for six weeks, switching from paper and pencil to AlphaSmart week after week. The journals were collected after the six weeks and assessed for both their quantity and quality. There was also a pre-post survey, where students expressed their opinions on the two methods. The number of words written increased by almost all students and the quality of writing indicated mixed results. As a whole, the class improved in writing quality. The surveys were telling of the student's thoughts, as they tell what they like/disliked about each method.

USING ALPHASMARTS TO IMPROVE THE QUANTITY AND QUALITY OF  
WRITING OF FIFTH GRADE ENGLISH LANGUAGE LEARNERS

by

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To my loving and patient family, I love you!  
Brian,  
Benjamin and Abigail

Also, to the many supportive  
friends and family who  
encouraged me through this  
whole process.  
I couldn't have done this without you!

Mom- thanks for believing in me!

Megan- Gracia mante che áma

Let nothing perturb you, nothing frighten you.

All things pass. God does not change.

Patience achieves everything.

-Mother Teresa

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## CHAPTER ONE

### INTRODUCTION

#### Identification of the Problem

You have them hooked! This is what all teachers work to accomplish every day and it is a dream come true when it happens. Your students want to learn more about the topic you are studying. They are excited! They are looking up more information, pairing and sharing the information they found, doing art activities regarding the topic and more when the bombshell comes. They need to write about what they have learned. This is where the collective groan emits from their mouths. Those who did not groan just give a disgusted look, roll their eyes and appear dispirited.

This is a common occurrence in my classroom, which is full of fifth grade English Language Learners (ELLs). This situation, happening over and over again, has brought me to this research project with my students. Not only have I encountered this situation in my classroom, but many mainstream teachers come to me, an English as a Second Language (ESL) teacher, to ask why their ELLs do not produce writing very well in their classrooms. Their ELLs do the minimal necessary, in order to complete the assignments and the teachers wonder what else can be done to help the students move to the next level to develop strong academic writing skills. The students will take the Minnesota Comprehensive Assessment (MCA) test each year, which will require them to produce a sample of their writing abilities. The MCA will assess them on their being able to write clearly for an adult audience, express a central idea, maintain coherent focus, have an organizational structure, include detailed support or elaboration of ideas and maintain control of language conventions including spelling and grammar. Traditionally, in my

school, ELLs have not done well in this assessment piece. According to the Minnesota Department of Education, our school has not made Adequate Yearly Progress (AYP) according to the Federal No Child Left Behind Act of 2001. This means that we need to raise our student test scores or suffer the penalties for not doing so. Due to these observations and discussions with other teachers in the building, I decided that I need to find a way to make writing a more approachable, less anxiety-ridden task at which second language learners can experience some level of success, thus, be able to express their ideas more clearly and supplement those ideas with more detail.

### Significance of the Problem

My ELLs have often told me that the reason they do not want to write in their mainstream classroom is because they have to write in English and they find that problematic. Writing is a chore for them. Many non-native speakers of English find writing to be one of the most challenging aspects of acquiring English, especially in the academic setting of the school (Peregoy & Boyle, 2005). There are many reasons for this, based on my experiences and talking with some of my ELL students, including:

- They have spent years struggling to read the non-phonetic spelling of the English language and now the idea of having to spell it themselves seems to be a daunting task.
- They have received papers back from their teachers with discouraging red marks that have told them of all the errors they have made.
- They have felt badly when their peers have made fun of the incorrect spelling or grammar in their writing.

These pre-pubescent students have little self-confidence in their production of the English written word. Once students feel more confident in their writing, they will likely take more pleasure in the work they are doing with their composition, be able to take more risks in their writing and feel better about it. I often wonder how I can help my students enjoy writing and feel less apprehensive with their compositions.

### Technology in Schools

Schools have seen an explosion of technology that started taking place in the late 1980s, with schools around the country spending thousands, if not millions, of dollars to update their schools with appropriate technologies to aid their students in all areas (Cassidy, 1996). With technology in schools, educators are starting to realize the potential of word processing for language and literacy in the classrooms. It could be a key ingredient to raise the levels of all aspects of language acquisition for all individuals, both ELLs and mainstream students alike. It has been found that when computers are integrated with other classroom material, the students demonstrate a stronger interest in learning (Dauite, 1986; Etchison, 1989; Vacc 1987). Using a word processor might be a motivational and invaluable tool to help emergent writers write more and produce better quality.

With the variety of word-processing software that is now available, outlining, drafting and editing are greatly simplified and require much less time than with the traditional manner of using the pencil and paper. Students can now do major revisions using less labor and time-intensive recursive tasks, such as cutting and pasting or editing

their text in outline view. Spell-check and grammar check are options students also have at their disposal in order to help them take control of their text and its development.

Lastly, another motivating factor for students in using the computer-generated text is that it produces a professional quality that can be achieved in the final result. The information listed above on the positive effects that word processors have on student achievement has been found true for native English speakers (Padgett, 2000; Russell et al., 2003; Snyder, 1993), but has not been focused on ELLs. Could it be true, also, for ELLs?

One area that has been shown to be problematic when working with ELLs and word processors would be the discrepancy between the availability of technology for ELLs versus their native English speaking counterparts. It has been stated that ELLs receive less exposure and training to help them achieve the same technological goals as their English-speaking peers (Machado, 1997). If ELLs receive less time working with word processors, how will ELLs reap the benefits and achieve their goals of becoming more confident writers? As educators of the leaders of our future generation, we need to find a way to help them bridge this technological divide. Schools, generally, do not have classroom sets of desktop computers in the classroom and I know I do not in mine, so where could I find word processors for my ELLs that the school or my classroom could afford?

I recently wrote a grant and received 40 AlphaSmarts. The goal of this grant was to improve the writing skills of the ELLs that I work with in my school. Working with individual, mobile word processors, such as the AlphaSmart, would be a setting that would provide students with an opportunity to err, yet not be singled out and brought to the attention of peers, since the errors are brought to their attention in the moments they

are written on a desktop computer and can be edited with formatting tools available to them. Being able to write well can touch all levels of the students' academic career, as all academic venues deal with writing to some extent, from writing a nutritional plan for the week in health class to writing a result for science experiments and more. I am using this technology in my classroom to help my students improve their writing, and to give them the same opportunities that many of their classmates get elsewhere.

### Hypothesis

One way to help bridge this technological gap may be to access smaller, cost efficient word processors for the classroom use, such as the AlphaSmart. The AlphaSmart is a portable, low cost laptop with a memory that students can utilize within their own classroom. It uses a basic word processing program that students use to compose, edit, cut-copy-paste, spell check and print. One way the AlphaSmart is different than a desktop computer is that you don't have a colored line that appears below the error when it is made as you write, as it does with a desktop. The student will know the errors made only when they push the 'edit' button on the AlphaSmart, which will point out their errors or if they attach to a desktop computer, where the editing lines will appear. I have found that when students work on the desktop computers and a colored line appears, to signify an error, they immediately stop to try and figure out why that line appeared and often will lose track of the flow of what they are attempting to say. The AlphaSmart also has a small screen which will display four to six lines of text, with each line containing up to forty characters. It is designed to let the user transfer text to a Mac or personal computer for additional formatting and printing, if needed.

The use of a portable writing device can provide all students extended time writing with a word processor, as they explore with text and computer features that they may not be as familiar with or they have not had time to work with. I would like to show in this study that having ELLs writing on the AlphaSmart on a regular basis in their journal writing will increase the quantity and quality of their writing.

There have been a few reports written that show when mainstream students write on computers, they tend to produce more text and make more revisions. These will be gone over in more detail in Chapter two, but to give a quick overview, one study done with native English speaking fourth grade students in Maine showed an improvement in quantity of writing, among other positive aspects, such as quality and number of revisions (Padgett, 2000). Also, in Massachusetts, a longitudinal study showed that native English-speaking fourth grade students showed an increase in the quality of writing (Russell, et al., 2003). Snyder's action research paper (1993) was written on the topic of whether writing with pen and paper or with a computer would improve the amount of writing done with her fifth grade students. The study was done with twelve mainstream, native English speaking students. The result of this study showed that her students wrote longer texts with the word processor than with pencil and paper. Could this also be true with ELLs? My research paper is going to answer the question of whether writing on a personal computer, such as an AlphaSmart, will increase the quantity and quality of words versus using paper and pencil with ELLs.

Currently, there is little research on the matter of improvement in writing of English Language Learners when writing on a word processor. Chapter Two will explain the theories that support the process students go through when learning a second

language and the relationship between writing in a first and second language. Chapter two will also examine what research has currently been done in the use of computers in language acquisition, explain these findings and what gaps may still exist for this field of study. Chapter three will look at an overview of the students who participated in my study, what tools were used and the process when doing the research to answer the research question asked above. Finally, I will then outline the action research project in more detail, where I explain the data I collected and my goal for the students. Chapters four and five will explain the assessments used, share the results of the data collected and inform others that work with this population what value this holds.

## CHAPTER TWO

### LITERATURE REVIEW

#### Introduction

Different areas of writing seem to cause problems in both my classroom and other classrooms in my school with English Language Learners (ELLs). The purpose of this study is to determine if the AlphaSmart, a personal, mobile word processor, is able to assist the fifth grade ELLs in my classroom in improving the quantity and quality of their writing.

#### ELLs and Writing

Immigrant students often learn English through a natural state of acquisition of development; oral (listening and speaking) skills are acquired first, followed by reading and lastly writing. Research has shown that writing is often one of the last aspects of learning English that ELLs are able to learn well and execute at an academic level (Otlowski, 1998). One problem that ELLs encounter is they often do not have the strategies needed to apply their knowledge of the writing process in order to express their exact meaning through the rhetorical conventions of English. Word processing is not going to aid that non-native writer to achieve that linguistic knowledge base that is often missing, but it may offer a medium for teaching the writing process. These strategies can be used to put the knowledge they know about the target language into practice as they compose and explore text.

Krashen (1984) states that the process of acquiring writing competence for all learners is the same as the process of acquiring competence in a second language, in that

it follows many of the same developmental steps. It also depends on each individual prior experience in the area and support received. As Leki (1992) states, there is no person that is a 'native-speaker' of writing. She then continues by stating that teaching writing to ELLs is not that much different from teaching writing to mainstream students. However, there has been some research that refutes these statements by stating how much interference from the first language there is and how much the composing process differs between L1 (first language) and L2. There is very little known about writing in a second language in general (Krashen, 1984). We do know, however, that there is a significant cognitive load on second language writers and that we need to find the most accessible manner for them to be able to produce writing effectively.

One needs to keep in mind that writing is a skill that requires the development of cognitive structures and routines for high-level management of mental activities. This can cause many problems for ELLs that do not have the proficiency skill level of writing in English and feel apprehensive in doing the task of writing (Friedlander and Markel, as cited in Pennington, 1993). Cummins (1991) and Krashen (1981) both advocate for the concept of a context-embedded learning environment where comprehensive information is provided in a low anxiety setting. Working with individual, mobile word processors, such as the AlphaSmart, could be a setting that would provide students the opportunity to make errors, yet not be singled out by their peers. As stated by Conti (1987), when using a personal computer, displaying ideas on the screen, writing more about those ideas and revising the text becomes more like one integrated activity, rather than separate tasks. As students become more proficient with the tool, the more the capabilities of the word processor unfold and alter the writing process, ELLs can take what they have written

and use the word processor to help make their writing better and more comprehensible. Being able to write well can touch all levels of the students' academic career, as all academic subjects deal with writing to some extent, from explaining how you found your answer in mathematics class to writing the results for a science experiment and more. The computer has the capacity to influence the way in which users will learn by helping them to notice more clearly what errors they may have missed when using a pencil, by having colored lines immediately show up on the computer screen when an error occurred. It will also help to increase the length of their paragraphs in their drafts, as they see their ideas on the screen and add to them, along with their oral and written communications (Pennington, 1993).

In this chapter, I will present what has been written and studied about having ELL students use word processors to help them write more. Will having ELLs write using the AlphaSmart technology allow them to produce a larger quantity of text at a higher quality level?

### Writing Technology in the Schools

Schools are attempting to use technology, such as word processors, to aid students to improve their vocabulary, comprehension and writing. Many classrooms in the nation provide a desktop computer, but often, the classrooms are set up so that one computer is shared by numerous students. Recently, many elementary schools in the United States have worked to have more computers in their schools, so that more of the students can work on word processors, although few schools have one desktop for each student

(Russell et al., 2003). One reason for this may be the expense of the desktop computer with word processor software.

An affordable alternative to the desktop could be a portable word processor, such as the AlphaSmart. The company that produces this technology, Intelligent Peripheral Devices, Inc., bills the AlphaSmarts as a “low-cost” way for teachers, who never have enough computers in their classrooms, to get more keyboard time for their students (Buchanan, 1998). One is able to purchase 20 AlphaSmarts for the price of about three desktop computers. Purchasing portable word processors is a more viable option for school districts to invest into so that their students may get more opportunities to work on a word processor as they work on improving their writing skills.

I was recently a recipient of 40 AlphaSmarts from a grant that I wrote. The goal of this grant was to improve the writing skills of the ELLs that I work with in my school. This research project attempts to show that with the receipt of this grant, whether the money was well spent, and has a positive impact on the ELL’s writing in my school.

### Computers and Student Learning

The computer has the capacity to influence the way in which users will learn by helping them to notice more clearly what errors they may have missed when they were using a pencil, increase the length of paragraphs of their drafts by using different formatting tools, along with assisting in their oral and written communications. Working with computers can provide an alternative approach to sustain students’ interest, motivate students, and develop students’ knowledge and skills. Several studies have shown that writing with a computer can increase the amount of writing students execute and the

extent to which students edit the writing (Dauite, 1986; Etchison, 1989; Vacc 1987).

This, in turn, can lead to higher quality writing (Hannafin & Dalton, 1987; Kerchner & Kistinger, 1984; Williamson & Pence, 1989).

Experimental studies have been done in which there was a one to one ratio of student to computers that suggest the use of laptops increased students' sense of excitement about learning as well as their interest in writing (Cromwell, 1999). Rockman (1989) echoed this finding by reporting that the use of laptops led to high school students having an increase in student motivation and a movement toward student-centered classrooms. Baldwin (1999) reported that after beginning the study of using laptops as a part of the curriculum, junior high student's daily attendance increased, tardiness decreased and students reported spending more time on homework and less time watching television.

Overall, the research that has been published to date shows that providing one laptop for each student increases student motivation and can have a positive impact on student learning. In addition, the age-old controversial issue of equity is also made more available to all, as each student is provided with the same resource of a personal laptop to do their writing (Munoz, 2002; Cassidy, 1996; Machado, 1997). In the past, only those students who finished their work quickly, or wrote their drafts to the liking of the teacher were able to use the classroom's one desktop computer.

Numerous studies regarding the use of laptops have been completed with college and high school students, rather than elementary students. However, the studies that have been done on the topic of word processors and writing in the elementary level so far have shown a mix of results, mostly based on the experience that the students have with typing

on word processors making a difference in how they do in their writing. For example, Forbust and Feltovich (2001) investigated how word processing experiences influenced third grade students' performance during writing. Students who had less experience using word processors scored higher on the writing assessment with the word processor than their writing done with pen and paper. Only small differences were found between pen and paper versus word processed essays for students with more word processing experiences. The content of the essays with the later group revealed that word processed essays appeared neater and with larger number of words than the handwritten essays.

Another study with very different results was conducted with seventy-two third graders to see whether essays by hand or with a word processing program would make a difference on both the quality and length of their essay (Shaw, 1999). This study lasted over a period of three years. The results indicated that the length and quality of the essays done by hand were at a superior level than those done by a word processor. They partly attributed these results to the fact that the students were not as familiar in the use of these machines as they were with what they already knew: pencil and paper.

Another study done by Guignon (1998) reported that with her sixth grade students in Connecticut, the amount and quality of the students' literary analysis improved greatly when they were provided with an individual laptop. Padgett (2000) assessed students in the quantity difference between pencil and paper and computer over the course of 20 school days. She had students write journal entries: half with an eMate (personal, hand-held computer, similar to the AlphaSmart) and half with paper and pencil. After 5 days the groups would switch either to the pencil and paper method or computer method. In the end, there was no significant difference, although she hypothesized that a student with

a written expression deficit would benefit from using a computer. This is what many ELLs have problems doing in their writing. They often have problems expressing themselves adequately. Hence, according to her conclusion, ELLs will benefit from access to a computer in the classroom.

None of the studies previously listed were specifically talking about AlphaSmarts, although one study used the emate, which is similar to the AlphaSmart. Most used research with desktop word processors. There has not been much research done up to this point in the specific use of AlphaSmarts. One longitudinal study answered the question as to whether an AlphaSmart would change the way that students produce work and interact with peers and teachers if one such word processor were given to each of twenty four fourth grade students in Boston. The results of the study showed that the 1:1 student to AlphaSmart ratio led to changes in the way the students approached writing, as it nearly universally improved the quality of the work (Russell et al., 2003). The use of AlphaSmarts ratio in that study also gave students a greater sense of ownership, responsibility and empowerment. This instructional situation included allowing students, without technology resources at home, to take the AlphaSmarts to their residence when needed.

The researchers in this study (Russell et al., 2003) reported that the teachers saw that the increased technology led to high quality student work and writing of longer drafts of their papers for all subject areas and that the students would more easily remember about creating new paragraphs and using quotation and punctuation marks. Another teacher commented that the students were writing longer and “taking more risks (in their writing) because they could edit easier” (p. 68). Teachers saw improvements in the

quality of work for nearly all of the students, with the single exception of one student with dyslexia who found composing her text on paper easier than on an AlphaSmart.

### Conclusion

As technology becomes more important in the daily life of many students in the United States and around the world, there has also emerged more and more research on using computers to help improve students' work in the schools, the students' reading, writing, comprehension and more. Reported work done with word processors for different students of elementary levels has some mixed results, but the majority have been shown to have had positive outcomes on the students' work than not.

The Russell, et al. study (2003) produced some valuable results regarding the use of one AlphaSmart for each student to improve writing that will speak volumes to the school districts, administrators and teachers looking to improve the writing of their students. They used twenty four students of diverse achievement levels, who were 90% Caucasian but none who were limited English proficient. However, this study did not include second language learners as part of their subjects. It did produce some interesting findings and it would be interesting to see if these findings would be similar to all populations, including the non-native English speaking student.

The question my study will attempt to answer is the information that is missing from other studies and will address whether using an AlphaSmart would be a possible help for the emergent ELL who struggles with writing in English. If AlphaSmarts are given to ELLs, will the quantity and quality of their writing improve? The data collected will come from my research project, that is, data collected from my instruction and

collecting data from my experience. Chapter three will talk more about the procedures for this study. This includes information about the participants and each of their abilities, explanation of the measurement tools used and the process of how the data collection will be done.

This study will add to the current research and also reach a larger population than the current studied groups. We will see what advantages in writing, if any, are found with the ELLs and personal word processors. If positive results are found, school districts, administrators, and teachers will have a direction they can take to better and more effectively reach the needs of ELLs in their writing.

## CHAPTER THREE

### METHODS

#### Introduction and Research Question

Writing can be a difficult endeavor for English Language Learners (ELLs); therefore, it is often the last aspect of acquiring English that ELLs learn to do well. What strategies can aid these students in their writing activities at school? The purpose of this study is to show whether using the word processor AlphaSmart with fifth grade ELLs will help them to improve the quantity and quality of their writing.

Second language writers, like their first language counterparts, progress developmentally, as they gain control over the writing process and the complex skills that go with it, such as clarity of thought and expression, knowledge of different genres to suit different purposes and the ability to use conventional grammar, spelling and mechanics (Peregoy & Boyle. 2005). It is not easy to characterize individual development of these traits, but there are some formats that may help more than others, which will be explored further in this chapter. Writing in a second language is a significant venture, as the second language writer has to focus on putting their ideas into the second language (in this case, English) but then leave some thinking space in their brain for higher level thinking skills, such as organization, planning, and grammar, among other things (Borg, 2000).

Some recent views on the writing process state that writing in a first or second language are fairly similar. An example of this would be where second language writers make use of their budding knowledge of English as they create texts for different audiences and different purposes, just as first language writers do (Peregoy & Boyle,

2005). Looking at all the barriers for the second language learner, it is clear that second language writers need plenty of time to work on their composition and any revisions that come from that writing.

Machado (2000) has shown that ELLs receive less time than mainstream students working on lessons that involve technology. The use of technology integrated with the classroom content has been shown to produce a stronger interest in working by the mainstream students (Pennington, 1993) and yet, ELLs do not have this opportunity to be motivated as often as their mainstream counterparts, if at all, due to the classroom expectations of finishing writing on paper to be able to use the computer. In addition, it takes longer for ELLs to write their drafts, ELLs are often pulled out for special classes during the time mainstream students go to computer classes, and many do not have computers at home. This research study will explore whether receiving more time working with the AlphaSmart will produce more written work as they start to experiment with the text, which can often be difficult to expand on and generate, given English is not their first language.

The method used to determine the answers to the question raised above is based on an action research model. Action research is an approach to research which aims at both taking action and creating knowledge or theories about that action. It works through a cycle of a) planning b) taking action c) evaluation of the action, which leads to further planning and so on. This is an appropriate form of research for this study, to help legitimize the research done by the practitioners in the field of (in this case) the educational organization (Coghlan & Brannich, 2001) by filling in a gap of information that is appropriate for that area and community. It allows me to be involved in research

where I feel it is relevant to my situation and focuses on issues and concerns I see or deal with in my school. The data collected from this study will be used to assess whether the goals were met and the problem solved or to see what the next step will be.

### Setting and Participants

The study took place in a first ring suburb of a large city in the Midwest. The general population of the school is from low to mid socioeconomic background. This school receives Government Title I funds and houses over 850 students in third grade through fifth grades. The ELLs are roughly 45% of the total school population, with 80% of those students on free or reduced lunch program.

The eight students who have agreed to partake in this study are fifth graders (between ten and eleven years old) who speak more than one language. They have either come or have family members that came from different countries outside the United States of America (see Table 3.1). To protect their privacy, the students were all given pseudonyms.

Table 3.1: Student Information

| <b>Student Information</b> |                    |                                   |                               |
|----------------------------|--------------------|-----------------------------------|-------------------------------|
| <b>Student</b>             | <b>Male/Female</b> | <b>Country of Origin &amp; L1</b> | <b>Length of Time in U.S.</b> |

|          |        |                |          |
|----------|--------|----------------|----------|
| Ahmed    | Male   | Uganda/Urdu    | 3 years  |
| Barkev   | Male   | Bosnia/Bosnian | 8 years  |
| Carlos   | Male   | Mexico/Spanish | 5 years  |
| Delfina  | Female | Mexico/Spanish | 10 years |
| Emilio   | Male   | Mexico/Spanish | 8 years  |
| Fanny    | Female | Mexico/Spanish | 9 years  |
| Gabriela | Female | Mexico/Spanish | 8 years  |
| Hector   | Male   | Mexico/Spanish | 10 years |

The students will be writing in their journals for this study. They are accustomed to writing in their journals when they enter the ESL classroom, as they currently do so three times a week. Their time in the ESL classroom is a writing workshop time, similar to what they would be receiving in their mainstream classroom, but with more specific English support and in a smaller group. Prior to the six weeks of the journal writing, the students were exposed to a keyboarding program called Mavis Beacon. This program was introduced and practiced when they were in third grade and continued to be practiced in both fourth and fifth grades, so they all have a good grasp on their keyboarding skills, and feel comfortable with using this technology, as they are able to practice this technology once a week in their computer class.

One thing that each of these students has in common is that, not only was their first language not English, but they are all considered fluent by the oral Idea Proficiency Test (IPT) and competent in the reading IPT assessment (Amori, Dalton & Tighe., 2004) but have weak writing skills. The IPT shows their writing to be in the non-English writer or limited English writer scale, which places them anywhere from 0-7 out of 19 points. The IPT exam assesses the literacy skills of the ELLs and measures the English competencies necessary for ELLs to function successfully in the mainstream classroom.

It is designed to measure both the developmental levels of English language acquisition and the achievement of some of the content standards for English literacy/language arts. The IPT test is given to all students that are new to the district in grades K-8. As stated earlier, English usually follows the pattern of acquiring the oral skills first, to be followed by the reading and lastly, the writing. These students were given the IPT exam before this study began and the following table shows where these students fall on the IPT scale of reading and writing proficiencies (See table 3.2 and 3.3 below)

Table 3.2: Interpretation of the Reading Component of the IPT

| Proficiency Level of Reading Skills |                           |                                    |
|-------------------------------------|---------------------------|------------------------------------|
| Student                             | Proficiency Reading Score | Interpretation of Numerical Levels |
| Ahmed                               | 44                        | Competent English Reader           |
| Barkev                              | 27                        | Limited English Reader             |
| Carlos                              | 35                        | Limited English Reader             |
| Delfina                             | 38                        | Limited English Reader             |
| Emilio                              | 17                        | Non-English Reader                 |
| Fanny                               | 37                        | Limited English Reader             |
| Gabriela                            | 33                        | Limited English Reader             |
| Hector                              | 30                        | Limited English Reader             |

Table 3.3: Interpretation of the Writing Component of the IPT

| Proficiency Level of Writing Skills |                           |                                    |
|-------------------------------------|---------------------------|------------------------------------|
| Student                             | Proficiency Writing Score | Interpretation of Numerical Levels |
| Ahmed                               | 9                         | Limited English Writer             |
| Barkev                              | 5                         | Non-English Writer                 |

|          |    |                        |
|----------|----|------------------------|
| Carlos   | 12 | Limited English Writer |
| Delfina  | 8  | Limited English Writer |
| Emilio   | 3  | Non-English Writer     |
| Fanny    | 4  | Non-English Writer     |
| Gabriela | 10 | Limited English Writer |
| Hector   | 4  | Non-English Writer     |

The tables above show that all the students are behind grade level on their writing skills. All eight of these students receive pull out time for their English as a Second Language (ESL) class for 40 minutes a day and volunteered to be included in this study. The students are in the same mainstream classroom and the same ESL class.

### Procedures

The study was conducted over six weeks: three weeks of writing with paper and pencil and three weeks of writing with an AlphaSmart. Students wrote for five days with paper and pencil and then switched to AlphaSmart for the next five, and it continued in this fashion for the complete 30 days. This gives them a chance to experiment and feel comfortable with both methods. The topics for the writing came from a teacher resource book that I had used previously for the journal writing we do in class or by topics of interest at our school at the time, for example the track and field day the students had participated in, etc. (Steiner & Phillips, 1991). The list of topics is in appendix A.

At the start of the class, I made sure the students have either paper and pencil in front of them or an AlphaSmart. I then placed the journal topic on the board and have students give their response to the journal sentence starter. For example, I would write, 'It makes me happy when...'. Students brainstormed ideas on how they would complete

the statement and I wrote what they said verbatim. I hoped that one student's response would trigger another student's idea and they would springboard off each other. They then had the correct spelling on the board to help them when they began to write and they had multiple ideas to work with, as they often agreed with each others' responses, which would help them to elaborate in their writing. When all ideas were exhausted, I started timing their journal writing.

### Overview of Measurement Tools

The pre-post assessments given were collected in the following manner:

1. The students were given a questionnaire before and after the study to measure their attitude towards writing and their attitude regarding the use of a computer vs. paper and pencil as a tool with which to write.
2. A sample of the students' journal writing was collected in the first week of using the paper and pencil and the AlphaSmart and also, in the last week of writing with paper and pencil and the AlphaSmart.
  - All the samples were assessed with the state ELL assessment called the Test of Emerging Academic English (TEAE) as found in Appendix B (MDE, 2007) which is geared to be used with students who may have difficulty learning English in a general education classroom without additional language support. It is based on second language acquisition theories. The TEAE writing rubric will determine if the quality of the writing improved from the first week of the study to the last week of the study.

- The number of words were counted for all samples to determine if there was any increase in the quantity of writing from the first week of the study to the last week of the study.

### Data Collection

Each day of the study, the journals for that day were collected. The words were counted and the daily totals were added together to get a total number of words using an AlphaSmarts and a total number for paper and pencil for each student. At the end of the 30 days of journal writing, the students had 30 journal entries with a total of words written for each student: 15 written with paper and pencil and 15 written with an AlphaSmart. The totals of the word processed entries and the paper and pencil entries were compared to see if there appeared to be a difference. This was done by giving each student an average score. The following chapter will show the findings and discuss the results from this research project.

To assess the quality of their writing, I followed the criteria that have been set up by the Minnesota Department of Education (MDE) for the expected development of writing skills an ELL student should have. Any non-native English speaking student in school is expected to take the Test for Emerging Academic English (TEAE) test each spring, where they will be assessed by this same rubric. In order to show any change in the quality of writing, the journals were collected for the first and last five days of the study with both the writing with paper and pencil and with the AlphaSmart. The papers were then scored by a fellow ESL teacher from my school who does not know the

students but has worked with and is familiar with the rubric set out by state. The TEAE test writing descriptors look at:

- Focus

There is a main idea that is stated clearly with some supporting details

- Organization

Writing ideas are in sequence, has some sentence structure with no sentence fragments

- Description/Elaboration

Uses a variety of word choices with possible idiom use

- Mechanics

Errors in mechanics do not interfere with comprehension of what they wrote

- Language Production

Second language errors do not interfere with meaning, shows that there is an understanding of English language and culture (MDE, 2007, p.1)

This score is based on a one to five scale, where one is considered the most emergent and five is the most advanced in English writing abilities. This is a great resource available for educators to assess how their non-native English speakers are doing in their writing, as they have different needs and issues than the native English speakers do. The data from this rubric will show if the students have advanced in their writing quality on the computer versus paper and pencil.

Chapter four will share the data collected, communicate the results and the interpretation of that data. In chapter five I will share my observations about the study and any implications the results may have for the field of ESL, along with possible ideas for further research.

## CHAPTER FOUR

### RESULTS

#### Introduction and Review of Research Questions

Chapter three explained information about the students who are a part of this research study as well as the setting and the methods used. The goal of this study is to determine whether the use of AlphaSmarts, a mobile, hand-held word processor, would help to improve the quality and quantity of writing in a class of fifth grade English Language Learners (ELLs). Writing is often the last aspect of acquiring English that students are able to manipulate effectively in an academic setting, such as the school. It was proposed that with the use of the AlphaSmart, the students may gain the self-confidence they need to take risks in their writing. They will then be able to use the strategies they have worked with and that are available to them on the computer to improve how much they write and the value of their writing. This chapter will share the data that was collected from three research tools. Subsequently, the data will be analyzed and interpreted to determine if the goal of this study was met.

#### Pre-Post Writing Survey

##### Description

The pre-post writing survey was made up of two questions. The first question asked if they considered themselves to be a writer, followed by an open ended question, which required the students to explain why they chose 'yes' or 'no' for their answer to the question. The second question asked the students if they preferred writing with paper and pencil or an AlphaSmart and why they chose one over the other (see Table 4.1) The

purpose of this study was to determine if with the use of the AlphaSmart, the students would increase their output of text and, hence, improve the quality of that text.

Table 4.1

*Pre-Post Survey Results for Question 1: Do you consider yourself to be a writer? Why or why not?*

| Student  | Pre-Survey Responses                       | Post-Survey Responses                             |
|----------|--|---|
| Ahmed    | No- I don't like writing                   | No- I don't writing on paper                      |
| Barkev   | No- Bad, not fun                           | Yes- sometimes fun                                |
| Carlos   | No- because some words are hard            | Yes- because I like to right a lot                |
| Delfina  | No- I think I'm a good writer and bad      | Yes- I know how to write                          |
| Emilio   | No- because is not fun and is hard         | Yes- becace I'm progresing this yers and its easy |
| Fanny    | Yes- because I like to rit                 | Yes- because I like to tipe                       |
| Gabriela | Yes- Because I like writing about minerals | Yes- because I like to write                      |
| Hector   | No- It not fun                             | No- becose I do not like to write                 |

### Results, Analysis, and Interpretation

The results of this survey show that, overall, there was an increase in positive attitudes towards writing. Four out of the eight participants said they thought of themselves as writers by the end of the study, when they stated in the pre-survey they did not consider themselves writers. This increase in positive attitude toward writing from the beginning of the study to the end is substantial and their responses in the post-survey after working with the AlphaSmart included words such as writing was 'fun' or 'easy'. In the pre-survey, students put themselves down by saying things such as words are hard and they considered themselves to be bad at writing. Thus, using AlphaSmarts may have

been a factor in improving their self confidence in writing.

Two students did not change their attitudes; they did not think of themselves to be writers before the study nor at the end of the study and stated it was not fun. One of these two students who stated he still does not like to write receives Special Education classes as a result of a learning disability and scored as a non-English writer per the IPT English Assessment Test. The learning disability that he has may be why he does not feel comfortable enough with his abilities as an English writer and was not ready to transfer his thoughts to writing in English. They both stated in the open ended questions that they don't think of themselves as writers as it is not fun and do not like writing.

### Pre-Post Survey on Attitude Toward Writing

#### Method of Writing

The analysis of the data gathered from the pre-post writing attitude survey shows that students had more positive feelings about writing with an AlphaSmart versus using the paper and pencil (See Table 4.2).

Table 4.2

*Pre-Post Survey Results for Question 2: Question 2: Would you rather write with the AlphaSmart or paper and pencil? Why?*

| Student  | Pre-Survey Responses                         | Post-Survey Responses                                 |
|----------|--|---|
| Ahmed    | A.S. because I don't like writing on a paper | A.S. because I don't like writing on paper            |
| Barkev   | A.S. Because it esyer to tipe                | A.S. becasse I can go faster                          |
| Carlos   | A.S. because its fun                         | P & P because I right faster with it                  |
| Delfina  | A.S. better on it than paper & pencil        | A.S. easy and better                                  |
| Emilio   | A.S. because sometimes can be fun            | P & P is esey to write andy ou can take it everywhere |
| Fanny    | A.S. & P&P because I like to write and tipe  | A.S. because I like the sownd of it                   |
| Gabriela | A.S. because you pres buttons                | A.S. because it is quicker than wasting time writing  |
| Hector   | A.S. it is fun                               | A. S. better because it has spell check               |

The responses to this question show the students appear to be highly motivated by the use of a computer to write, as they all wrote they prefer the AlphaSmart in the pre-survey. Upon answering the open ended questions in the pre-survey, it was stated three times that working on the AlphaSmart is fun. They also mentioned that the AlphaSmart as being “quicker”, “better” or “easier” numerous times, showing some positive emotions toward it. Having a feeling that something is more “fun”, makes work, which is what many of the students believe writing to be, appear easier and may bring down the anxiety level often found when something is thought to be too hard. It was evident from my casual observation that students felt much more comfortable using the computer for word processing throughout the whole study, as they intently worked without side talking to classmates and used the complete time given to write, whereas, when writing with paper and pencil many would end before the time expired, as they ran out of things to write

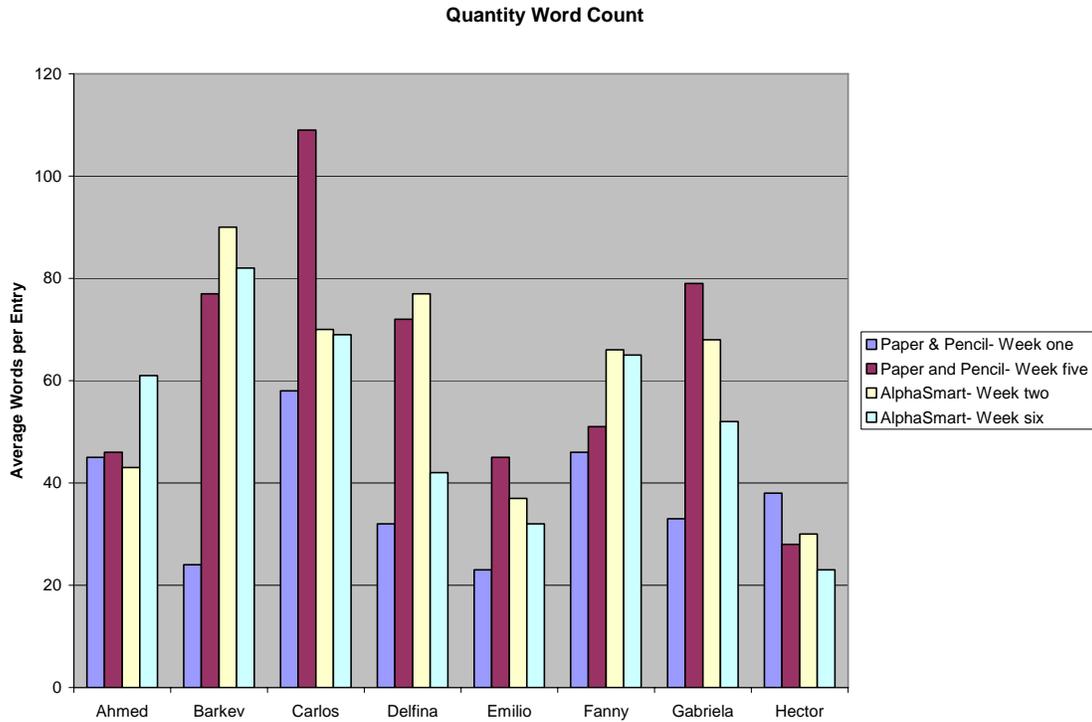
about. Students were very motivated to write their journal entries by the use of the AlphaSmarts, as seen by an increase in the accuracy, efficiency and ability to employ different commands such as the spell check.

However, not all students agreed that the AlphaSmart was the best choice to question 2 of whether the AlphaSmart of paper and pencil is preferable to write with, as seen on Table 4.2. One student wrote he would rather use paper and pencil, as he found that method to be quicker. Typing does not come automatically for him, as writing with pencil and paper does. Another student, Emilio, receives special education services for reading and writing, as he has a learning disability and struggles to produce any writing. Having a time limit for him to write may create a stress ridden environment.

The statements from the open ended questions showed that most of the ELLs found the use of a computer superior when compared to writing with paper and pencil.

#### Number of Words Used in Journal Responses

The journals from the first week of both methods of writing journals were collected and counted. The journals from the last week of each method were also collected and counted. The total words were counted and averaged for the week. Then, a percentage was given to show any increase from paper and pencil writing in the first week to writing on the AlphaSmart on the last week.



*Figure 4.1* Student Word Count Results

The summary of the results shows that the students, as a group, wrote more words by the end of the study with the AlphaSmart than in the beginning with paper and pencil. This is exciting information, as this was true for all students, less one, who receives Special Education services for reading and writing and was also gone from school for three weeks in the middle of the study. However, the number of words written from week five with the AlphaSmart is lower than the first week working with the AlphaSmarts. This is true for all students, less one student..

At the beginning of the study, writing with the AlphaSmart increased over writing with paper and pencil by 14%. By the end of the study, the quantity of writing with the AlphaSmart increased by 13% percent over the pre-study assessment. All but three students made increases by the end. One of those three students that did not make

increases wrote in his pre-post survey that writing with paper and pencil was easier, as he did not feel confident in his word processing skills. Regardless whether they wrote with paper and pencil or on the AlphaSmart, the quantity of writing increased.

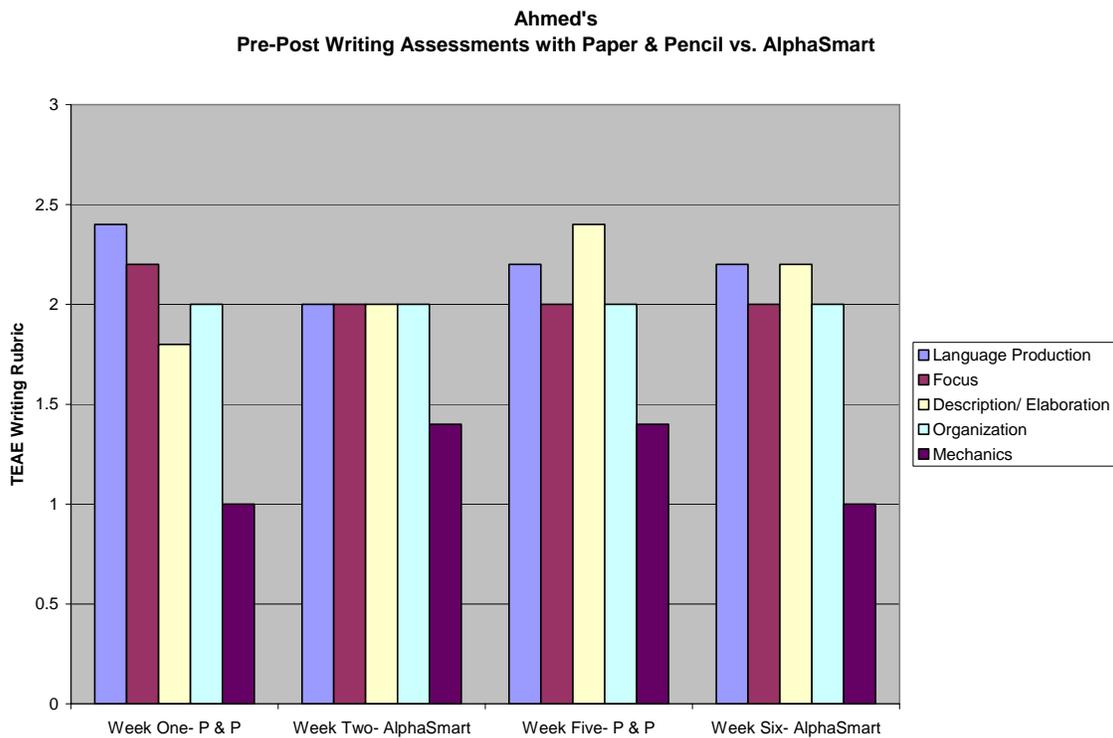
### Writing Assessment

The entries were scored using a rubric that was developed by the state for use with the Minnesota Test of Emerging Academic English (TEAE) by the Minnesota Department of Education. With the use of this rubric, it was possible to show the students' growth and is more accurate than other state test rubrics because of the TEAE is more focused attention to the second language acquisition issues (see Appendix B for a copy of the rubric). The rubric focused on five different areas of writing abilities: Language Production, Focus, Description/Elaboration, Organization and Mechanics. All of the students' writing samples were assessed by a fellow colleague (ESL teacher) at my school, who has experience with the TEAE rubric, as she helped to set up the rubric when it was created in the state department.

### Results and Data Analysis

The results from this study show that although some students did not improve in some areas, overall growth was realized for the class as a whole. On average, all students improved in all areas being assessed: Language Production, Focus, Description/Elaboration, Organization and Mechanics. Individually, each student had equal results or grew in the area of description/elaboration, which one could attribute to the less stressful environment of working with the AlphaSmart, where they did not feel inhibited to writing 'perfectly' but knew they could make errors which could be easily

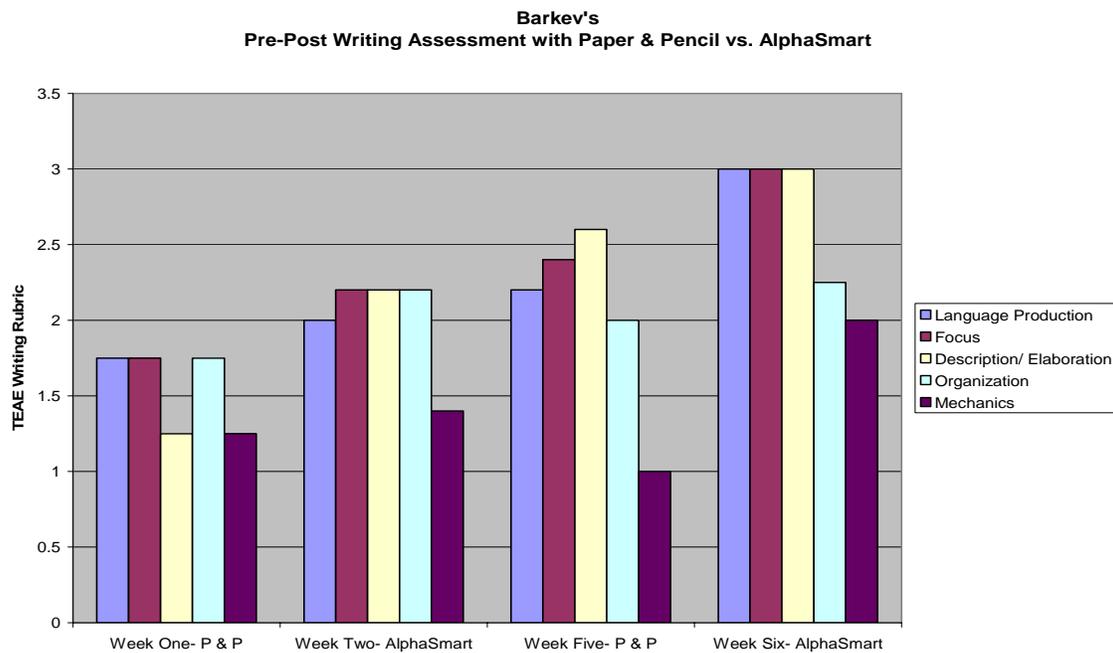
fixed at a later time. One also needs to take into account the normal growth a student has in a year, as well, as they all receive instruction in their classrooms and you would normally expect them to make some progress just from being in school. Individual students varied greatly in their progress, although, as one may expect, others did not (see charts below). Some students made little or no gains, which may have been attributed to many different factors; learning disabilities, lack of word processing skills, lack of motivation, journal topics not of interest to them or instructional time period not being long enough to show progress. However, some students made great gains, which could be attributed to their internal motivation, interest in the journal topics, openness to learn or the use of the AlphaSmart in the study.



*Figure 4.1* Results of Ahmed's Writing

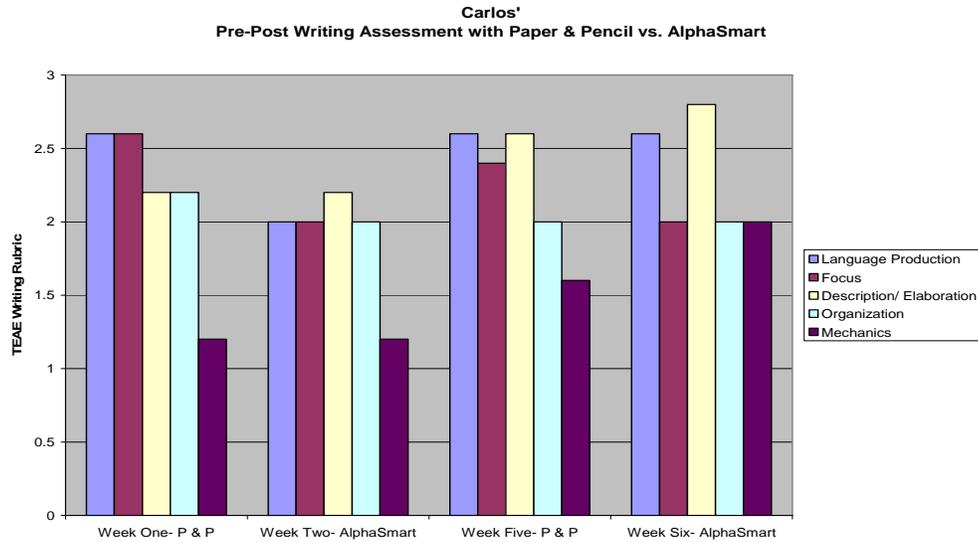
Ahmed has been in this country for the least amount of time, compared to the

other students (three years) and has the least amount of exposure to the use of computers. He did not show many gains in many areas and, in fact, decreased in the areas of description/elaboration, focus and language production. He is a highly motivated and meticulous worker. More time would have benefitted him as he wants everything he does to be perfect, which takes time.



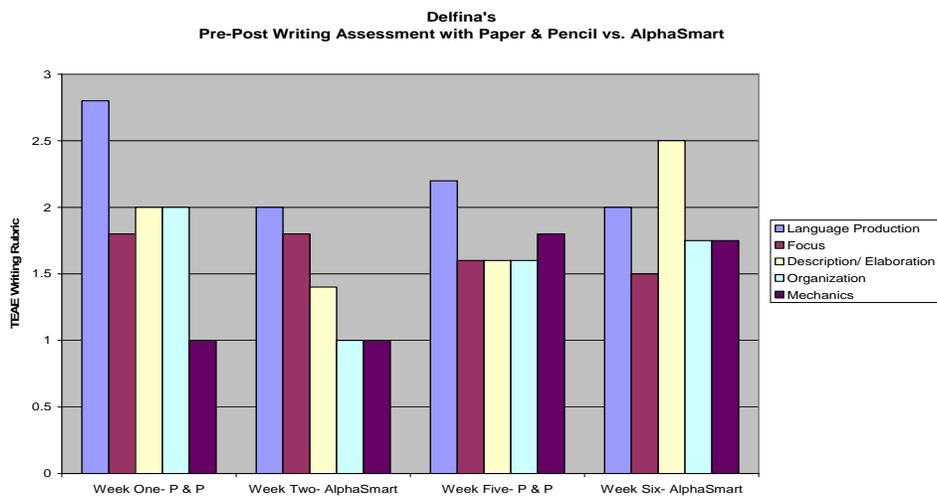
*Figure 4.3* Results of Barkev's writing

Barkev flew back to his country (Bosnia) for two weeks in the middle of this study. Regardless of this fact, he made great gains in all areas.



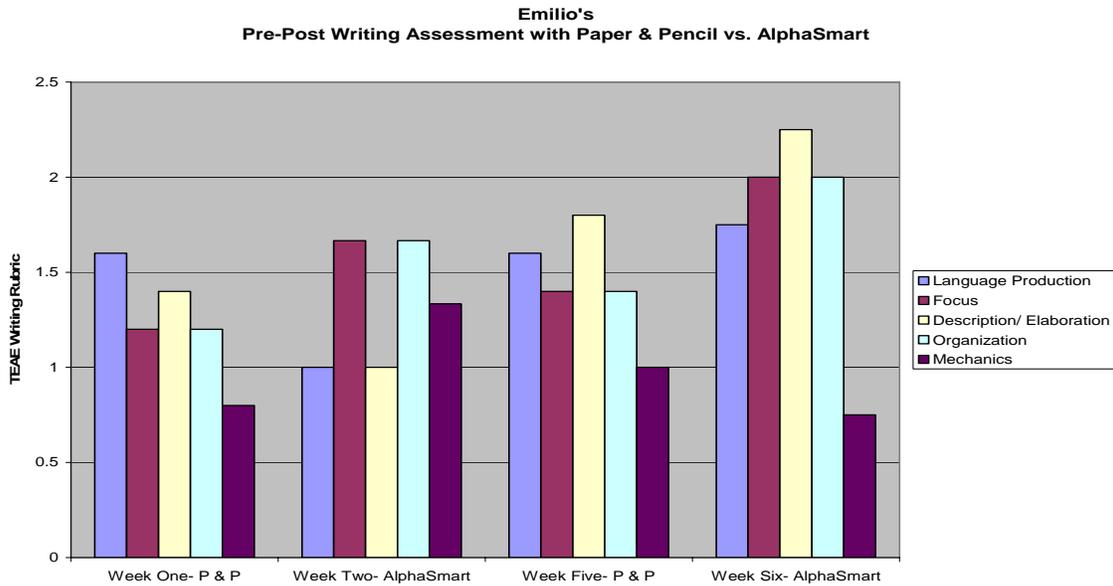
*Figure 4.4* Results of Carlos' Writing

Carlos wrote in his post-survey he would rather write with paper & pencil than the AlphaSmart. However, he improved in all areas but organization and focus. Additional time would benefit him greatly.



*Figure 4.5* Results of Delfina's Writing

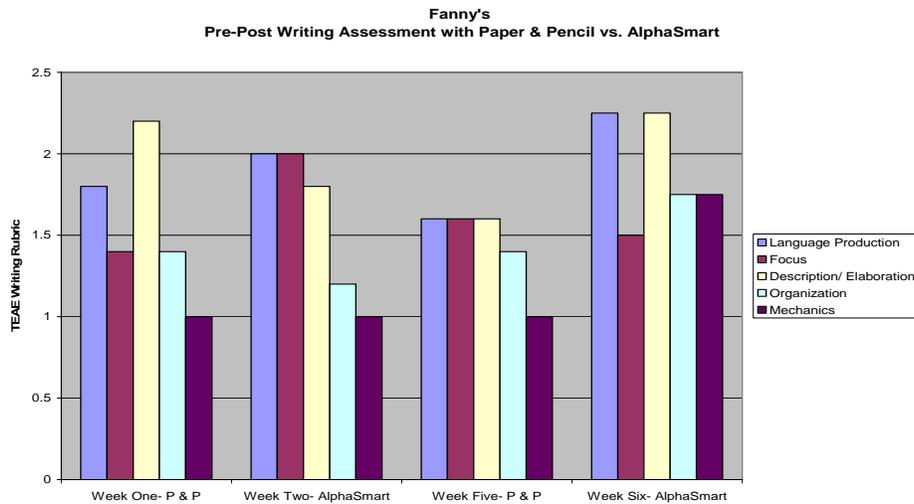
Delfina loved working on the AlphaSmart and did not improve as much as expected. She went down in all areas but mechanics and description/elaboration from the beginning to the end of the study.



*Figure 4.6 Results of Emilio's Writing*

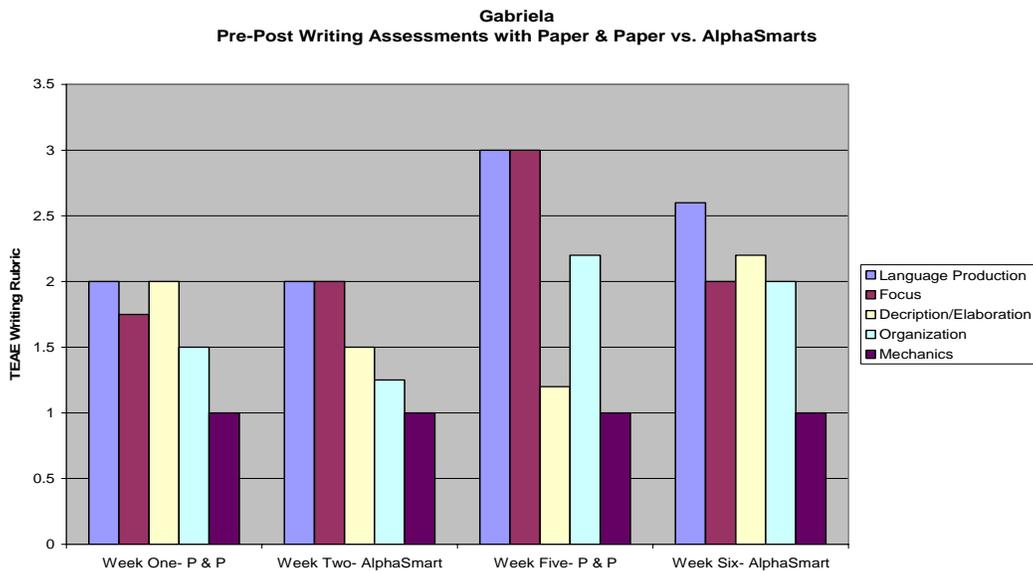
Emilio has a learning disability, for which he receives Special Education.

Regardless of this, he improved in all areas but mechanics.



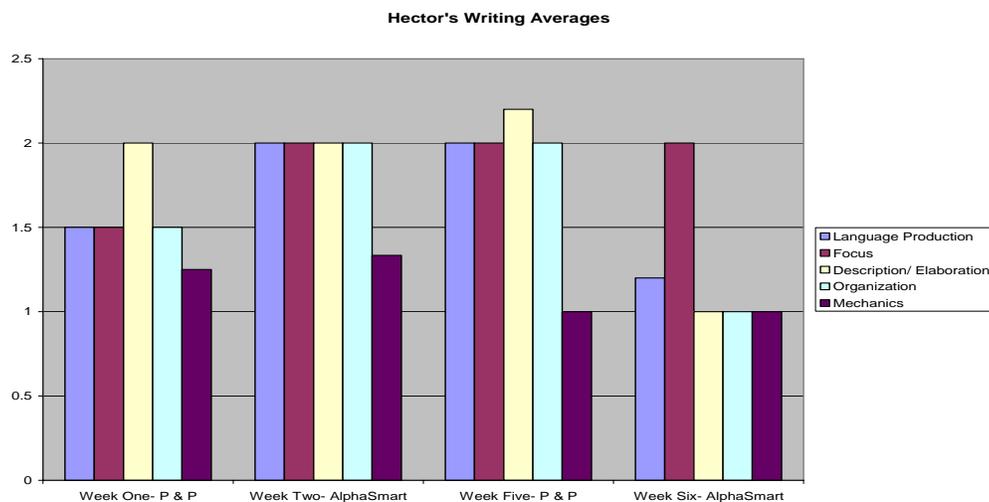
*Figure 4.7 Results of Fanny's Writing*

Fanny made improvements or stayed the same in all areas during the course of the study.



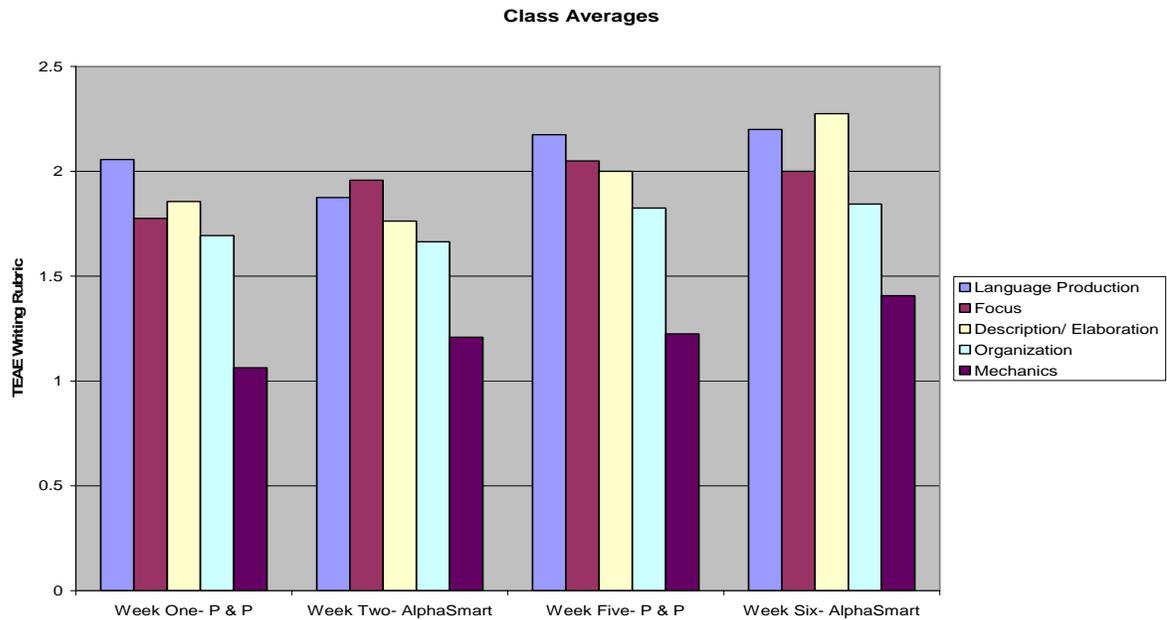
*Figure 4.8* Results of Gabriela's Writing

Gabriela is a highly motivated student who stayed the same or improved in all areas of this study.



*Figure 4.9* Results of Hector's Writing

Hector was gone for three weeks during the middle of this study. He also has a learning disability he receives Special Education services for reading and writing. He went down in all areas but focus.



*Figure 4.10* Results of the Class' Writing

As a class, they improved in every area from the first week of paper & pencil to that last week of working on the AlphaSmart.

### Interpretation

The results of this study show some promising results for the ELL population in regard to writing. As stated by Cromwell (1999), giving students a computer to complete their writing on one student to one computer basis increases the student's excitement about learning as well as increases their interest in writing. This is shown in both the quality and quantity of work.

The results of the pre-post writing assessments show that overall, the students showed substantial progress in their ability to generate longer journal entries. They increased their entries by 13%, which could be attributed partially to the motivation of the use AlphaSmarts. As stated in the research by Dauite (1986), Etchison, (1989) and

Vacc (1987) writing with a computer can increase the amount that students write and the extent to which students edit the writing. In these research examples, the students were all mainstream, native English speaking students. My study shows this may be true for all students, regardless of first language, although this is a small study, with more study possibilities to see if it is true for a larger population. However, this study worked only with competent English speakers, versus non-English speakers or limited English speakers, which may show a different result due to their oral English limitations.

The students in this study were also able to explore the different tools of the AlphaSmart, such as the editing button, to make their personal thoughts comprehensible than it may be if it were written with paper and pencil. Anyone who picked up what they wrote would be able to understand the points they were trying to express. As with native English speaking students in other research publications, the more students edit their writing can lead to higher quality writing (Hannafin & Dalton, 1987; Kerchner & Kistinger, 1984; Williamson & Pence, 1989). The editing is facilitated more easily and cleaner with an AlphaSmart than with paper and pencil. The mechanics of the students' writing improved or stayed the same for all the students, less one.

As is true in any school with any group of students, there are many variables to keep in mind. There were certainly substantial gains for many of the students that will hopefully stick with them throughout their academic lives. It could also be due to normal, expected progress from classroom instruction. There were also some students that did not produce in amounts or quality expected. It is possible it would be different if the variables were changed (i.e. more time available to write, more weeks do the test, etc.).

## Summary

The research questions posed in this action research project can be addressed using the information gathered from the pre-post assessments collected that were used to measure student growth and by the casual observations recorded by the myself.

Did the students feel more comfortable generating more of their own writing at the end of the study due to the different environment created due to the use of the AlphaSmart? I believe they did, as they told me on a daily basis how much they liked the AlphaSmarts, they would groan on the weeks they had to use paper and pencil, they walked into the room and went right over to the cart that held the machines or they used all the allowed time for entering their thoughts. The results of the number of words counted from the beginning of the study to the end would indicate to me that, indeed, there was a comfort level created that allowed students to produce more text than done previously, equally for the mainstream ELLs and the ELLs that received Special Education service in reading and writing. I noticed they appeared to enjoy the task more, as they grabbed their AlphaSmart when they entered the room, and started typing even before brainstorming about the topic as a class. This eagerness flowed over into the amount they wrote.

This comfort level did not seem to bring remarkable changes in their quality of writing, as they did not move up in the rubric scale used to assess their improvement. There were certainly some notable changes, which is exciting to see for those students. However, the changes did not carry over to all or most students to be called remarkable. Working with the AlphaSmart may have given them the confidence they needed to take

what they knew about the language to explore and create, without fear of making too many errors. Although they have experience in working with computers, namely a desktop computer during computer time, they may still be getting used to using the AlphaSmart, as it is not used on a regular basis. Hence, they may still be experimenting with its capabilities. Also, the testing period may not have been long enough to show any remarkable changes in the quality. The students could push the edit button at any time during the journal writing time, to check on any errors, as it does not show up automatically as they write. Some students got held up spending time checking frequently for their errors, versus writing and checking at the end. In general, it may take more time than what they had to move from one level to another on the TEAE rubric.

It was evident from the my casual observations that the students felt more comfortable using the computer for word processing at the end of the study than they did at the beginning as they looked forward to the weeks they knew they would get to use the AlphaSmarts to write their journal entry. At the beginning of the study, the AlphaSmart was an exciting new tool they did not get to use much but wanted to “play with”, as one of the students put it, but by the end they felt more comfortable with the different commands they had control over, such as the spell check, cutting and pasting. The increase in students’ accuracy and ability to employ these different commands was evident for most students by the time the last entries were completed, as their scores of mechanics improved.

In chapter four, the results of the pre-post assessment tools were presented and discussed. The information gathered from the action research study supports the use of the AlphaSmarts to motivate the students and help them to feel more successful in the

amount of writing they can produce. It did not indicate, however, that the students overall create better quality of writing. The study did show that many of them had noticeable improvement in their ability to write in an organized, mechanically correct and elaborative manner with success. It must be noted that there is still considerable growth potential for all the students in the areas studied.

In chapter five I will reflect upon how the results of this study corroborated or differed with the current research in the field and describe any new findings. I will explore the implications of the results for other classroom teachers, students and administrators. Limitations of the study will be discussed, and finally, I will suggest some ideas for future research, and I will share my concluding thoughts.

## CHAPTER FIVE

### CONCLUSIONS

The results from this study that were presented in the last chapter centered on the following: When you use an AlphaSmart with English Language Learners (ELLs) does it improve the quantity and quality of their writing? In chapter five the study will be analyzed for its implications for classroom teachers, ELLs and administrators. A discussion of this study's limitations and problems will follow, along with ideas for improvements and any possible future research.

#### Major Findings

The principal goal in this research study was to determine if the use of an individual, hand held computer would increase the quality and quantity of fifth grade students' journal writing versus writing the journal entries by paper and pencil. My prediction was that the students would be motivated by the use of the AlphaSmart and the assessments will show an improvement in quality and increase in quantity from the beginning of the study to the end. The work was context-embedded and comprehensible to the students, as we discussed and brainstormed as a class what the topic was for the journal writing each day. It was also a low anxiety setting, which is needed for ESL students to learn, as stated by both Krashen (1981) and Cummins (1991). The use of the AlphaSmart is the 'low anxiety setting' I used. The students obviously enjoyed this format in doing their work, as they were less tense about writing and freely engaged in the activity for the complete time allowed. The use of writing journals was the work at

their individual level, hence, comprehensible to each individual student. There were never any complaints that the work was too hard or they were frustrated about what they were asked to do. The brainstorming as a group prior to actually writing gave the students confidence in the use of correct words, phrases and creation of complete thoughts on the daily topic. This helps the students to organize their thoughts, as well as give more ideas to help them elaborate on their thoughts. These are two areas found in writer workshop time as well as with the testing they would be assessed on. Hence the students are getting practice in writing and thinking differently. It has been found that students with extensive access to technology learn how to organize complex information, recognize patterns, draw inferences, and communicate findings (Barron , 2006). With the use of the AlphaSmart, the students in this study have access to the technology which helps them to achieve those goals.

The research done on working with ESL students and the use of technology in writing is limited. The research that is available shows that mainstream, native English-speaking students have shown advantages in the use of personal computers to write when they are confident in their typing abilities: both in writing more text and improving the quality of what they wrote (Leki, 1992; Padgett, 2000; Snyder, 1993).

However, my study in working with ELLs showed some benefits in both attaining a higher amount of text written and improving the quality of what was written for most students. The students in this study improved on the quantity of text, which corroborates with what researchers have found when working with native English speakers. As a class of non native English speakers, they improved in quantity by 14% and all of the students, except one, wrote more text by the end of the study than at the beginning of the study.

The one who did not generate more text was gone for a family emergency in his country for three of the six weeks of this study. Not only discussing the topic as a class but being motivated by working with the AlphaSmart may have been the reason for this increase.

The students also improved the quality of their writing, although in different areas. They did not improve enough to change levels within the rubric used, although, the rubric is not sensitive enough to note the subtle changes made over the course of the study time. As a class, they improved in every level of writing: Language Production, Focus, Description/Elaboration, Organization, and Mechanics from the beginning of the study to the end. As Pennington stated (1993), upon using a computer, the students were able to influence how they worked by helping them to notice more clearly what errors they missed when using a pencil as something appears on the screen to indicate an error is made, as seen with the improvements in their mechanics of their writing as a class.

Individually, there were many differences in gains within different categories, one student improved in all categories by at least one full point. Others were not as remarkable, but overall, they did improve.

The students involved in this study were from a small range of different backgrounds, including nationalities and time in the United States learning English. This study took place over six weeks, and there were only eight students involved in this study; hence, any grand generalizations are impossible. However, this is a good place to start for a possible larger study to take place to see if it would be true for a larger population. This research study was easy to implement, and the AlphaSmarts seem to have potential to help bridge the researched technological divide between ELLs and mainstream students (Machado, 2000).

### Limitations

There were a few changes I would make if I were to do this study over again. One involves the time keeping while writing their journal entries. The students were given ten minutes to write in their journals each day. I used a timer so the students could keep track of how much time they had to do their task. This did cause stress for one of the students, who takes his work very seriously. He was the one student who wrote at the end of the study he preferred to write with paper and pencil. He did not feel it was enough time to both write what he wanted and edit what he wrote. I would extend the amount of time available to write to create an environment that is comfortable for all students. I know that other students would have been happy to write more, as well, as I would hear sighs or students saying, "Already?" "Can we have more time?" or similar comments at the end of the allotted time. Extending the time may have benefited more students.

The edit button located on the AlphaSmart may also have been a hindrance for some of the students. They could have pushed that button at any time they were writing, as the AlphaSmart does not automatically show errors as you write, but only when you push the edit button. Students tended to push that button at various times as they were writing to make corrections, rather than just as the time was ending. This could have caused them to lose the flow of what they wanted to say. They knew we would start with the next agenda item of the class when the ten minutes were up, so they were rushed to have it written correctly as they worked. I would have specifically given them time to push the edit button after the ten minutes passed and give them time to correct it, which

would better allow for true expression as they wrote and not be always looking at the clock.

Another change would be to extend the amount of time of the study, as stated above. The quality of students' work made some increases, but was not seen in regard to raising numbers to show improvement in the rubric used to assess their writing. The ability to see a difference was not realized in the short time provided in this study. However, if the time had been increased and the improvements continued to grow, the changes would be seen in the advancement within the rubric. The students are individuals, so they make progress at different times. The students that did show much progress may not have had enough time to accomplish that improvement. It would also be a good idea to create my own rubric specifically set up for this study with the AlphaSmart and ELLs. The rubric would better reflect the smaller steps that students did or could make within the shorter time of this study.

Two of the students in the study had to leave the school to return to their country in the middle of the study, one for two weeks and the other for three weeks. They did participate fully in the time they were in the class which included the first weeks and the last weeks of the study, but one would wonder what differences may have been made had they been able to participate in the complete study.

### Implications

What do the results of this study mean for other ESL teachers, mainstream teachers, administrators and district leaders? This research of this study showed that there can be some positive implications for ELLs when given the same resources for

writing as their native English speaking counterparts. I would certainly want to share this information with other teachers of ELLs, mainstream teachers as well with the administrators in the school, by showing this data to those who want to see this improvement made in their classrooms. Computer time at my school is currently very limited, as the lab is used for a large chunk of the school year with district and state and national computer assessments. This has allowed me to talk with individual teachers about my findings and share the AlphaSmarts with their classrooms. The time to speak to the faculty at my school is also limited, so the reality would allow me to share my findings with the mainstream teachers that I currently work with and let their findings and results spread to other teachers. We need to start thinking about how we can effectively reach the different populations within our diverse schools. National and state assessments are becoming increasingly important to teachers, schools and school districts, and this information could help to raise scores of ELLs, so we need to start thinking differently about how we can ensure all students receive access to the same technology to benefit all of our students. School assessments are increasingly being done on computers, so it is important to give the ELLs equal exposure to working with technology, so they can produce responses equally as well as their peers (Buchanan, 1998). Working with AlphaSmarts would give them that opportunity.

I believe it is time for teachers and administrators to think about moving past the idea of purchasing more desktop computers in the classrooms to individual hand held word processors for the students. By doing so, school districts are investing in more computers for a smaller or equal amount of money. Teachers are also giving more students in their classrooms access to equal amount of time with technology that can be

used at their desks, along with allowing them to work on their writing when they have the time, or if they need more time. Hand word processors are a great way to get more typing time for each student to break down the digital divide between students. This would allow all students to type at their own pace and without a set time limit including when they have some free time in the classroom.

Some research stated that teaching writing to ELL students is similar to teaching writing to native English speakers (Leki, 1992), but I would argue that ELLs have some different needs when it comes to generating text and the need for feeling comfortable to be able to write effectively, which my study shows can be done. Second language proficiency plays a role in writing and students may lack a sense for the way English conventionally translates into the written form. Hence, using the strategy of discussing, brainstorming and elaborating on the topic prior to writing, as was done in this study, helps ELLs produce more quantity and quality in their writing (Peregoy & Boyle, 2005). Within my study, I also saw the need for more time to write and edit what they wrote to have complete and correctly written thoughts.

In summary, I was pleased with both the methods and results of this research project. Looking at the process of action research, I have had a chance to look at the action taken, evaluate the outcomes of this study and am ready to suggest some further areas that could be possibly studied to add to the field of second language learning. I would love to see someone continue to take on the body of research regarding writing in a second language. Could the outcome of working with a larger group of ELLs for a longer amount of time produce some of the same results? Although I did not spend much time looking into or analyzing the results from the two students in the study that receive

Special Education services for disabilities, it would be interesting to see an extended study done on what the benefits are to students, native English speakers and non-native English speakers, if any, to their writing, given the same technology? ESL research is a developing field, with more to discover in this ever growing area. This study will, hopefully, benefit many of our students in our classrooms as well as in the national realm, as we continue to plan, take action and expand on these ESL topics.

## APPENDIX A

### Topics for Classroom Journal Entries

## TOPICS USED FOR JOURNAL WRITING

1. If I were the teacher....
2. It makes me tired when I have to...
3. If I were the President of the United States....
4. It makes me happy when...
5. If I ever get married...
6. After school, I like to
7. My favorite sport is...
8. I'm most afraid of...
9. When I am bored, I...
10. I never know what to do when...
11. The kind of job I would like is...
12. I like to wear...
13. I almost never think about...
14. I'd like to get a letter from...
15. The last time I got in trouble...
16. I'd like to throw away my ...
17. I'd like to throw away my...
18. I need to learn how to...
19. If I could buy a car, it would be...
20. The best time of the day is...
21. During recess, I like...
22. On the weekend, I ...
23. During the summer, I ...
24. My favorite animal is...
25. When I get sick...
26. At Track and Field Day, I felt....
27. The best part of lunch at school is...
28. If I could have a new sibling, I would want...
29. The best part of the school festival was....
30. During teacher workshop days, I think teachers...

APPENDIX B

TEAE Writing Rubric

### TEAE WRITING RUBRIC

|                                | 0   | 1  | 2  | 3  | 4  | 5   |
|--------------------------------|---|--|--|--|--|---|
| <b>Language Production</b>     | <ul style="list-style-type: none"> <li>• Unintelligible words</li> <li>• Copied words</li> <li>• Majority of words in native language</li> <li>• Refusal to write</li> <li>• Blank</li> </ul>   | <ul style="list-style-type: none"> <li>• Intelligible phrases and/or words</li> <li>• Inconsistent use of appropriate vocabulary</li> <li>• Overall meaning significantly obscured by 2nd language learner indicators (omission or substitution of words, grammar, word order problems, etc.)</li> <li>• Significant use of native language</li> <li>• Insufficient writing</li> </ul> | <ul style="list-style-type: none"> <li>• Simple, repetitive, and/or confusing sentences</li> <li>• Use of nonspecific and/or repetitive vocabulary</li> <li>• Overall meaning noticeably obscured by 2nd language learner indicators (omission or substitution of words, grammar, word order problems, etc.)</li> <li>• Frequent use of native language</li> </ul>   | <ul style="list-style-type: none"> <li>• Variety of sentence lengths and structures attempted, may be occasionally repetitive</li> <li>• Attempted use of topic-specific vocabulary</li> <li>• Overall meaning occasionally obscured by 2nd language learner indicators (omission or substitution of words, grammar, word order problems, etc.)</li> </ul>   | <ul style="list-style-type: none"> <li>• Variety of sentence lengths and structures used (may be repetitive)</li> <li>• Appropriate use of topic-specific vocabulary</li> <li>• Overall meaning may be minimally obscured by 2nd language learner indicators (omission or substitution of words, grammar, word order problems, etc.)</li> <li>• Predominant use of accurate grammar</li> </ul> | <ul style="list-style-type: none"> <li>• Variety of sentence lengths and structures used</li> <li>• Appropriate use of a variety of topic-specific vocabulary (may use idiomatic expressions)</li> <li>• Overall meaning clearly communicated with minimal 2nd language learner indicators (omission or substitution of words, grammar, word order problems, etc.)</li> <li>• Accurate grammar</li> </ul> |
| <b>Focus</b>                   | <ul style="list-style-type: none"> <li>• Unintelligible words</li> <li>• Irrelevant words</li> <li>• Copied words</li> <li>• Majority of words in native language</li> <li>• Refusal to write</li> <li>• Blank</li> <li>• No main point/narrative event</li> <li>• No relation to prompted topic</li> </ul>   | <ul style="list-style-type: none"> <li>• Main point/narrative event unclear</li> <li>• Minimal relation to prompted topic</li> <li>• Majority of thoughts incomplete</li> <li>• Insufficient writing</li> <li>• List (words or phrases) related to topic</li> </ul>  | <ul style="list-style-type: none"> <li>• Main point/narrative event addressed inconsistently and/or unclearly</li> <li>• May be prompt dependent</li> <li>• Some lapses from main point/narrative event</li> <li>• Some thoughts incomplete</li> <li>• Multiple positions/events without a unifying statement</li> <li>• Too brief to determine if focus can be maintained</li> <li>• List (complete sentences) related to topic but with no topic sentence</li> <li>• May lack an ending or end abruptly</li> </ul> | <ul style="list-style-type: none"> <li>• Main point/narrative event easily inferred</li> <li>• Occasional lapses from main point/narrative event</li> <li>• Most thoughts complete</li> <li>• Multiple positions/events with a unifying statement</li> <li>• List (complete sentences) defined by a complete topic sentence</li> <li>• Has an ending (may be weak or a verbatim reiteration of opening)</li> </ul> | <ul style="list-style-type: none"> <li>• Main point clearly stated; narrative event obvious</li> <li>• Minimal lapses from main point/narrative event</li> <li>• All thoughts complete</li> <li>• Must follow prompt genre and address all parts of the prompt</li> <li>• Has a beginning, middle, and end</li> <li>• Has closing, but fails to effectively tie the paper together</li> </ul>  | <ul style="list-style-type: none"> <li>• Main point clearly defined and maintained; narrative event obvious and maintained</li> <li>• No lapses from main point/narrative event</li> <li>• All thoughts complete</li> <li>• Must follow prompt genre and address all parts of the prompt</li> <li>• Has an effective closing that ties the paper together</li> </ul>                                      |
| <b>Description/Elaboration</b> | <ul style="list-style-type: none"> <li>• Unintelligible words</li> <li>• Irrelevant words</li> <li>• Copied words</li> <li>• Majority of words in native language</li> <li>• Refusal to write</li> <li>• Blank</li> <li>• No attempt at description/elaboration</li> </ul>                                    | <ul style="list-style-type: none"> <li>• Minimal attempt at description/elaboration</li> <li>• Unrelated or confusing description/elaboration</li> <li>• List of events with no detail</li> <li>• Lacks depth</li> <li>• Repetitive</li> <li>• Insufficient writing</li> </ul>   | <ul style="list-style-type: none"> <li>• General description/elaboration</li> <li>• Few important points/events may be supported with detail</li> <li>• Limited depth</li> <li>• May use repetitive nouns/verbs or adjectives/adverbs</li> </ul>   | <ul style="list-style-type: none"> <li>• Mix of general and specific description/elaboration</li> <li>• Some important points/events supported with detail (developed unevenly)</li> <li>• Some depth</li> <li>• Uses appropriate nouns/verbs or adjectives/adverbs</li> </ul>   | <ul style="list-style-type: none"> <li>• Specific description/elaboration</li> <li>• Most important points/events supported with detail (developed evenly)</li> <li>• Some depth</li> <li>• May use precise nouns/verbs or adjectives/adverbs</li> </ul>   | <ul style="list-style-type: none"> <li>• Specific description/elaboration</li> <li>• All important points/events supported with detail (developed evenly)</li> <li>• Good depth</li> <li>• Uses precise nouns/verbs and adjectives/adverbs</li> </ul>   |
| <b>Organization</b>            | <ul style="list-style-type: none"> <li>• Unintelligible words</li> <li>• Irrelevant words</li> <li>• Copied words</li> <li>• Majority of words in native language</li> <li>• Refusal to write</li> <li>• Blank</li> <li>• No order</li> <li>• No connection of ideas to the whole or to each other</li> </ul> | <ul style="list-style-type: none"> <li>• Minimal order</li> <li>• Ideas not logically connected to the whole</li> <li>• Ideas not logically connected to each other (confusing)</li> <li>• Insufficient writing</li> </ul>   | <ul style="list-style-type: none"> <li>• Inferred order</li> <li>• Few ideas logically connected to the whole</li> <li>• Few ideas logically connected to each other</li> <li>• May include several major lapses in flow</li> <li>• May lack transitions or transitions are repetitive</li> </ul>  | <ul style="list-style-type: none"> <li>• Discernible order</li> <li>• Some ideas logically connected to the whole</li> <li>• Some ideas logically connected to each other</li> <li>• May include a major lapse and/or several minor lapses in flow</li> <li>• Has transitions</li> </ul>   | <ul style="list-style-type: none"> <li>• Easily discernible order</li> <li>• Most ideas logically connected to the whole</li> <li>• Most ideas logically connected to each other</li> <li>• Paragraphs easily inferred</li> <li>• May include some minor lapses in flow</li> <li>• Has effective transitions</li> </ul>  | <ul style="list-style-type: none"> <li>• Obvious order</li> <li>• All ideas logically connected to the whole</li> <li>• All ideas logically connected to each other</li> <li>• Appropriately paragraphed</li> <li>• No lapses in flow</li> <li>• Has a variety of effective transitions</li> </ul>  |

|                  | GRADES K-2   |  |   | GRADES 3-12   |  |   |
|------------------|--|--|---|---|--|---|
|                  | 0  | 1  | 2   | 0   | 1  | 2   |
| <b>Mechanics</b> | <ul style="list-style-type: none"> <li>• Unintelligible words</li> <li>• Irrelevant words</li> <li>• Copied words</li> <li>• Majority of words in native language</li> <li>• Refusal to write</li> <li>• Blank</li> <li>• Demonstrates little or no understanding of either punctuation or capitalization</li> </ul> | <ul style="list-style-type: none"> <li>• Demonstrates some understanding of both punctuation and capitalization</li> <li>• Demonstrates obvious understanding of either punctuation or capitalization</li> </ul> | <ul style="list-style-type: none"> <li>• Demonstrates obvious understanding of both punctuation and capitalization</li> </ul> | <ul style="list-style-type: none"> <li>• Unintelligible words</li> <li>• Irrelevant words</li> <li>• Copied words</li> <li>• Majority of words in native language</li> <li>• Refusal to write</li> <li>• Blank</li> <li>• Demonstrates understanding of 0-1 of the 3 areas (punctuation, capitalization, spelling)</li> </ul> | <ul style="list-style-type: none"> <li>• Demonstrates some understanding of each of the 3 areas (punctuation, capitalization, spelling)</li> <li>• Demonstrates obvious understanding of 2 of the 3 areas</li> </ul> | <ul style="list-style-type: none"> <li>• Demonstrates obvious understanding of all 3 areas (punctuation, capitalization, spelling)</li> </ul> |

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