

THE IMPACT OF HOME COMPUTER USE ON ELL'S READING PERFORMANCE

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by

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CERTIFICATION OF THESIS WORK

We, the undersigned, certify that this project entitled The Impact of Home Computer Use on ELL's Reading Performance by Rasha Alsharif, Candidate for the Degree of Master of Art in Education, Teaching English to Speakers of Other Languages, is acceptable in form and content and demonstrates a satisfactory knowledge of the field covered by this project.



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Abstract

This research study investigated the impact of home computer use on English Language Learners' reading performance. The primary research question was: What is the relationship between home computer use and the reading performance of ELLs? The participants were 13 Hispanic students who are 6th, 7th and 8th graders in School #1 and School #2. Both settings are located in Chautauqua County, New York, in the United States. This study used a 10-item survey distributed to these students, asking them about the effectiveness of home computer use on their reading performance with special attention to their English Language Arts (ELA) test scores. Results, in general, showed that computer use had positive effects on those students who had access to a home computer and used it for reading purposes. However, using a computer for a variety of purposes had a weak correlation with students' test scores. In conclusion, the study showed some similarities and differences between the current study and other previous studies on the same field. The findings of this study add to the understanding of using computers to increase ELA test scores in the field.

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Chapter 1 – Introduction

Reading is defined as “a purposeful process of identifying, interpreting, and evaluating ideas in terms of the mental content or the total awareness of the reader” (San Risqiya 2013, p. 31). Using reading skills facilitates achievement of success in understanding the context. It can include instances such as making derivation, comprehending the organizational pattern, recognizing the general idea, or determining the relationship between these issues within the context (Donin, Graves, & Goyette, 2004). Reading is among the most critical skills for English Language Learners (ELLs) studying a second language (SL) or a foreign language (FL) to obtain high academic achievements. Furthermore, ELLs are the fastest growing group in the United States today. The overall proportion of ELLs in the U.S public school system was higher in the 2013–2014 academic year (9.3%), which was higher than in 2003–2004 (about 8.8%) and estimated at 9.2% in 2012–2013 academic year (National Center of Education Statistics, 2016). In the United States, it is compulsory for both native language learners and ELLs from Grades 3-8 to take an English Language Arts test yearly (United States Department of Education, n.d). The current project, therefore, seeks to elucidate the concept of ELLs’ academic performance with the aid of home computer use.

Statement of the problem

The most substantial academic problem in the U.S. today is that academic performance of minority learners is below that of non-minority children (Robinson, 2008). A research study conducted by David Murphey on the academic achievement of English language learners in the U.S. revealed that only 29% of the ELL students scored at or above the minimum level in reading 8th grade as compared with the 75% non-ELL students (Murphey, 2014). The research

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was performed in 8 states. In the 2016 4th grade reading evaluation, the states included were Connecticut, Delaware , Georgia , Indiana , Kentucky , Maryland , Rhode Island , and Utah. In the study, these states failed to meet the country's objective of incorporating a minimum of 85% of ELL students who took part in the study. ELLs take part in language assistance programs that assist them to attain English proficiency and meet the equal academic status as well as achievement standards required for all the students (NCES, 2017). According to the National Assessment of Educational Progress (NAEP), the rate of ELL public school students in the U.S between 2015 and 2017 was 20%, which was more in 2003–2005 (9.1%) and 2012–14 (8.3%). ELLs whose scores were above or at the basic class level in reading were approximately 38% compared with the 63% non-ELL students (National Assessment of Educational Progress, 2016). The NAEP further revealed that the difference in the percentage of achievement of the ELL and non-ELL students was approximately 25% in fourth-grade reading and eighth-grade Math. This gap has remained invariable since 2013 with only two points' difference. However, the achievement of earlier ELL students exhibits significant progress. However, the achievement of former ELL students' shows greater progress (NAEP, 2016). The NAEP report of 2016 cites the mean 8th grade reading score as 10% lower than that reported in 2015. Notwithstanding, there was no notable difference between the two scores in 2015 and 2016.

The NAEP (2016) also reported that the achievement performance gap in reading between the Hispanics and the whites was quite small at only 12%. The report further confirms that from 2014 to 2016, reading scores remained unvarying at 62% for the Hispanics and the whites at the 4th grade level. From 2007 to 2009, reading scores did not record significant change for either of the groups at the fourth grade. From 1992 through 2016, the normal reading scores

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for white 4th and 8th graders were higher compared to the scores of their Black and Hispanic peers. Even though the White-Black and White-Hispanic differences did not change largely from 2013 to 2016 at either grade 4 or 8, a portion of the racial/ethnic achievement gaps has diminished since 1992. At grade 4, the White-Black reading score gap reduced by 6 points in 2016; at 8, the White-Hispanic gap reduced by 5 points. From the above literature, it is evident that minority English language learners require specialized learning environments as well as learning resources to enhance their academic performance.

The significance of the study

Today, English has become an international language, with its status likely to last for a long time (David, 2011). Since childhood, the English language has always fascinated me. I was that person who always wondered, “which language is this?” and “why is that person’s utterance different from mine?” I gained the urge to learn the English language as I grew up. Besides, it is widely known that a person who acquires the English language as a second language, through any learning resources, tends to attain many benefits. For instance, in Saudi Arabia, those who can speak the English language have higher chances of job opportunities than those who do not have English speaking abilities. An example is the Royal Commission for Jubail and Yanbu, an autonomous organization in Saudi Arabia, which usually requires job applicants to possess good written and spoken English language as a requirement. Additionally, once a person has acquired the English language, he or she becomes more open to new communities and new cultures. For instance, English speaking tourists who travel to non-native English speaking countries are likely to find it hard communicating with the people from the host countries due to the language barrier. At some point when my husband and I traveled to Turkey, we were worried about the

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way that we would communicate with the Turkish. However, we did not have a problem since there are many people who understand and speak English in Turkey.

Since I started using the computer for different daily purposes, I have gained a lot of benefits, especially in relation to English language achievement. Nowadays, computers have dominated people's lives, including even children. I consider myself a computer-fascinated person who ultimately engages with computer devices and understands the way to use it. For example, before using the computer as a learning resource, I was constricted by particular books in English such as the schools' textbooks. So when I wanted to read about a specific topic, a widespread issue, a common phenomenon, or at least to learn about particular grammar aspects, I would most certainly fail to reach for what I needed. However, with the advent of computers, it has become easier to obtain specific information, such as theories of second language acquisition or syntax concepts.

Besides, a computer is a necessary tool today. For instance, when one needs to search for information about the last royal decree that was issued to allow women in Saudi Arabia to drive, it is most probable to obtain such information through searching a website, which can be done by using a computer. In the same way, when students spend their time playing games on computers, their parents can guide them to exploit this tool to promote their reading development, as well. In brief, my experience with reading through the computer has been vital. I did not have this competence in reading before using a computer. After using computers for reading, I stopped translating every single word in some articles and started comprehending the meaning by context. For instance, when reading an articles on a website like BBC's, even without understanding every single word, I can still tell the writer's main idea.

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Purpose of the study

Since L2 reading skill is considered the most necessary skill for ELLs in academic settings (as cited by Alsamadani, 2009), ELLs' low performance in reading ability hinders their achievement of such development in the general academic setting. Therefore, this study specifically aims to investigate the impacts of home computer use on ELLs' reading performance. The study will also examine the ways in which using computers at home affects students' reading development. The study, thus, hypothesizes that there is a direct relation between the use of home computers and reading achievement of ELL students, especially Hispanic students. More specifically, the study will seek to provide more insight into the impact of home computer use on reading development. Also, awareness of such effects is critical in understanding the seriousness of the gap in performance between Hispanic and non-Hispanic students in reading performance. It is also critical to understand whether using home computers helps the target population to enhance their reading performance in L2. Hence, the uniqueness of this study lies in targeting the most significant minority group in the United States of America – the Hispanic race. This is the most prominent group with lower achievements in reading ability.

On the other hand, this study will only explore the impacts of home computer use in the academic reading achievement regardless of any other variables that can also affect academic achievement or the students' scores, such as socioeconomic status, parents' education levels, or parents' involvement levels. Also, this study will not emphasize any health risks that might affect the students while using home computers.

As such, the results of this study will attempt to create baseline acquaintance and supply insights for different audiences, including researchers, parents, educators, teachers, students, and

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policymakers: 1. Researchers will have a better understanding of a technology topic that never gets old in a research field; 2. Educators and teachers, who make their best efforts to encourage students to achieve academic success, can use this research in order to realize that home computer use can be one of the solutions to attaining a better academic achievement (for instance, a teacher can ask students to read a particular topic through the frequent use of computers in a week and revise the subject in a classroom discussion); 3. Parents, who care about their children's scores, can use this study to promote their children's use of computers for school purposes; 4. Students of different ages can use this literature review and the findings of the study to utilize a new procedure in their learning resources; 5. Policymakers, particularly those who focus on the achievement gap, can use the findings of this study to provide a computer for all students or at least make a discount or less expensive alternatives for the students to easily have access to home computers.

Conclusions

Since English Language Learners (ELLs) typically spend most of their time at home, the previous studies tried to decrease the low average of ELLs' academic performance in reading through the use of home computers as resource for learning. I found broad findings that assert the relationship between home computer use and the academic achievement of ELLs, either positive or negative, and specifically in reading or in other subjects such as Math. Thus, it will be necessary to explore these previous findings while asserting the need for this present study wherein there is a gap. Technology has become a crucial tool that serves a learning process or a teaching process and has taken its place in the research field. Therefore, conducting this research will help Hispanic students by providing them the literature review. This specific research also

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seeks to promote reading achievements among their L2 through home computer use as a sufficient learning resource. Finally, the research might show significant results that will encourage the policymaker to provide new legislation that emphasizes on the significance of linking home computer use with the educational process. In the next chapter, I will explore the literature related to the meaning of English language learner (ELL), the current standing of performance among ELLs and specifically Hispanic students, and the positive impacts of home computer use to such students as a learning strategy.

Chapter 2 – Literature Review

In Chapter 1, I clarified the problem regarding the status of English Language Learners (ELLs) in the U.S, with an understanding of the ways in which such learners easily acquire English language proficiency in reading using home computers. In essence, the chapter provided an introduction necessary to understanding the ensuing chapters of this thesis. It outlined the statement of problem, significance of the study, and the purpose or rationale of this current research inquiry. This chapter, the Literature Review, serves to review the relevant literature on the problem of ELLs in regards to home computer use. To achieve this, the chapter will include previous studies of researchers investigating the same topic or related topic areas.

Computers are often used in developing writing skills, especially for ELLs who find it difficult to write statements in a foreign language. Students find it motivating to use computers for the sole purpose of studying grammar rather than writing on paper (Ybarra & Green, 2003).

This study's primary objective is to investigate the effects of using computers on ELLs' reading achievement by hypothesizing that the use of computers at home can have an impact on the fulfillment of ELLs in reading. The query that guides this research is the effects of using computers at home for ELLs' success in reading.

Who are English Language Learners (ELLs)?

English Language Learners (ELLs) are the non-native English speakers who are learning the language as a second (or third) language. They demand dedicated teaching both in the English language as well as in educational courses. At present, there are an increasing number of ELLS across the world, especially as globalization necessitates people to communicate in a

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common language. English, being among the most popular languages worldwide, has been of interest to other speakers, giving rise to ELLs. It is estimated that the percentage of ELLs in the United States in the school year 2014-2015 was about 9.4%, or 4.6 million students (National Centre for Education Statistics, 2017). According to the National Education Association (2018) report, "English Language Learners (ELLs) are the fastest growing segment of the public school population. Over the past 15 years, the number of ELL students has nearly doubled—to about 5 million. By 2015, ELL enrollment in U.S. schools will reach 10 million and, by 2025, nearly one out of every four public school students will be an English Language Learner" (p. 1).

Accordingly, some previous research studies, such as Robinson (2008) and Garcia (1991), have assessed the need for English language learning among non-English speakers. The most important aspects of English language learning include reading and oral communication (Robinson, 2008).

Reading Performance and Hispanic Students

As per the U.S. Census Bureau (2016), the Hispanic population in the United States is the largest racial minority. They constitute about 17.6% of the nation's total population. The U.S. Census Bureau (2015) reported that the Hispanic population increased gradually in the U.S., with their population rising from about 12 million in 1990 to 35 million by the year 2000.

Additionally, the U.S. Census Bureau in 2010 estimated that the number of Hispanics was 50.5 million. Data collected from the U.S Department of Education have also indicated that the average number of Hispanic students in grade 4 is 37% and 21% in Grade 8 (National Assessment of Educational Progress, 2016). From these figures, it is crucial to note the

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seriousness of the problems facing the ELLs, and the dire need for this group to be accorded solutions.

Robinson (2008) confirmed that, indeed, there is a learning gap between white and Hispanic students. Due to the No Child Left Behind (NCLB) Act (2002), students were required to outperform proficiency levels every year. Reports by the National Center for Education Statistics (NCES) in 2013 confirmed that 4th-grade Hispanic students in New York City had scores in reading that were 23 points lower than those of white students. This performance gap decreased by 42 points than that it was in 1992. Likewise, in 2013, 8th-grade Hispanic students in New York City had scores in reading that were 25 points lower than those of the white students. This performance gap was not significantly different from that in 1998 (28 points). In addition, the National Assessment of Educational Progress (2016) reported that the achievement performance gap in reading between the Hispanics and the whites was quite small at 12%.

Low Reading Performance of the ELLs in the US among the Hispanic Students

ELLs in the United States tend to face several challenges, and key among them is low reading performance. In essence, from preschool, when a child's language is not principally English, the ease of learning reading in English might be impeded largely. For such students, when reading in English starts before they acquire oral proficiency in English, it becomes even more strenuous for them to achieve high reading performance (Slavin & Cheung, 2005).

According to Saracho and Spodek (2004), “while children are learning to speak English, they should be taught to read in their native language first, to avoid the failure experience that is likely if children are asked to learn both oral English and English reading at the same time” (p. 113).

One of the most probable reasons for low reading performance among ELLs is the cultural and

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linguistic differences of such learners. For instance, numerous Hispanic students with inadequate English proficiency or low reading performance tend to come from poorly educated families. In most cases, they are from communities in which many families are primarily minority or low achievers (Garcia, 1991).

ELLs and Home Computer Use

Since ELLs mostly spend time at home as opposed to at school due to challenges coping with school environments among other factors, researchers have tried to counter the poor performance of ELLs reading the computer for home use as a learning resource (Cohen, 2011). Previous studies in this literature review give enough evidence that the connection between computer utilization at home and the overall performance of ELL students can be either positive or negative especially in Reading and Math. Computers are tools that assist through the learning process and in research (Wosesmann & Fuchs, 2004).

Positive Impacts of Home Computer use on ELLs' Reading Performance

With the advancement of computers and the widespread availability of such devices at home, many educators have found that learning too has become more fun and easily understood through home computers. Recent studies by O'Dwyer et al., (2005) confirm that home computers have become an elemental part of ELLs' lives. In particular, their study supposes that "instructional use of computers during the writing process has a positive relationship with students' performance" (p. 37). Accordingly, with the rising number of ELLs, the need for general education classrooms has also diminished since these students can effectively learn from home (O'Dwyer et al., 2005). With computer technology, teachers have also moved ahead to implement strategies that best suit learners' needs. Apart from classroom instructions, home

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computers are nowadays turning to be the silent teachers at home (O'Dwyer, et al., 2005).

However, since ELLs are at high risk for inappropriate information from the computers, there is also the need to have them guided in the best ways to use home computers to learn. Therefore, it is relevant to state that as much as home computer use benefits learners, it can also bring about other negative effects if the learners are not monitored. They, therefore conclude that "When examining the effect of computer use on student learning, it is important to consider how well a specific use is aligned with the measure of learning" (p. 12).

Still, a research study conducted by Doran (2014) affirmed that ELLs need to be monitored so that they access the right content since they experience a language barrier. Parents and other responsible people at home need to support these students in order to obtain the appropriate education. It is provable that those students who tended to use home computers to learn achieved higher performance than those others who did not, confirming that indeed home computers can be influential in improving ELLs' proficiency or reading performance.

One of the ways in which home computer use helps ELLs is through teaching them vocabulary. Students can learn vocabulary contextually so that they can understand them. Therefore, computers can offer such a rich contextual environment for students to develop vocabulary competence at home. In addition, the use of computers at home primarily allows these students to become more active while learning in a one-on-one environment (Doran, 2014). Moreover, home computer use can help in incorporating different learning strategies and adopt numerous learning styles for the ELLs. Doran's study revealed that "participants valued professional development which addressed content, instructional strategies, and relationships

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with students, and teachers reported positive experiences with informal, peer-to-peer learning experiences as well as more formal professional development” (Doran, 2014, p.1). Other than developing vocabulary, home computer use can help to develop ELLs’ reading and writing skills and knowledge. Apart from these advantages, home computer use allows ELLs to create a home connection that makes them comfortable to learn.

A number of previous studies such as Woessmann and Fuchs (2004) have supported the fact that home computer has advanced learning for ELLs but might as well have negative impacts on learners. They conclude that, “there is also a negative relationship between home computer availability and student achievement, but a positive relationship between home computer use for internet communication and educational software” (p. 18). These studies tend to base on the advantages of computer use at home for students to learn. Using computers to learn improves the activity of learning by ensuring that it is subject to teaching models and strategies. It is also frequently used throughout the day. Knowledge can be drawn to students through the use of instructional software in computers (Woessmann & Fuchs). Research conducted before suggests that ELLs are more likely to spend their time on a computer at home than their non-ELL counterparts (Parmar, Harkness, & Super, 2008). An example of a study that based on the outcome of using a computer to ELLs is Percell and Kaufman (2013); their research utilized data analysis from an educational longitudinal study set to locate various elements which have an impact on the score for reading for both Hispanic and White students. The research found out that the use of computers has significantly influenced the reading performance of both of these two groups of students (Hispanic and White students). In addition, Taningco and Pachon

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(2008) report that computer use in the classroom and at home affects Hispanic students' scores positively and ensure academic success.

Green (2005) investigated the involvement of parents on the frequency of their children's engagement in educational activities once in a day. He realized that "The goal of using computer-aided instruction with EL students is to provide them with extra opportunities to learn and practice English" (p. 58). He also claimed that Asian parents who are immigrants used computers most often compared with non-Hispanic parents. Besides, Proctor, Dalton, and Grisham (2014) employed the use of computers to enhance performance in Reading as a subject in the fourth grade of the ELL students from the Hispanic population. The researchers' fixed elements of home computers are to build vocabulary and improve comprehension, through speech or writing. Furthermore, Kim and Chang (2014) realized by various analyses that use a computer at home had a negative impact on non-ELL students. They found out that "computer use for Math had overall negative effects for English-speaking students" (p. 302). However, the Black, Hispanic, and Asian ELLs using computers to improve on their mathematics performance showed improvement. In their findings, they consider that "Black, Hispanic, and Asian ELL fifth graders showed high Math performances when they frequently used computers for Math" (p. 302). Therefore, the literature suggests that computers have the potential to play a major role in the students' academic skills.

Zainiv and Mazdayansa (2014) in their study of the effect of computer-assisted language learning on the development of EFL learners' writing skills found that computers are very effective in promoting EELs reading performance. The study involved two groups of students; the first group used a traditional approach in reading while the second group used computer

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technology in reading. The group of students that used computers obtained an instant response through Microsoft Word Office, which was very valuable and assisted them in revising their writing tasks (Zainiv & Mazdayansa). It permitted them to correct any grammar errors that they had made, organize their work content and word choice. On the other hand, the group of students who used the traditional method spent a whole week waiting for a response from their trainers. They also spent a lot of time on their work without receiving an instant response from the Microsoft Word Office. Besides, the students who used the traditional approach found it very boring to revise their drafts and perform their writing assignments more than once. The research by Zainiv and Mazdayansa (2014) portrayed the significance of using computers in reading for the ELLs. Use of computers has gradually improved the learning process by making it less subordinated to the teaching methods, especially by using the computer at home throughout the day. Therefore, using computers as an instructional component can improve the knowledge bases of students.

Some studies have established that ELLs tend to spend more time on home computers than the non-ELL students (Parmar, Harkness, & Super, 2008). One study on the impact of computer use for ELL students was particularly significant: Percell and Kaufman (2013) used a data analysis of the 2002 Educational Longitudinal Study in order to obtain variables that affect reading scores for both Hispanic and non-Hispanic students. This study found evidence that computer use significantly affected all groups' reading performance. Parmar, Harkness, and Super further examined the issue of parental involvement in the frequency of the daily educational activities of their children aged between 3 and 6 years. They stated that Asian immigrant parents seemed to use computers more than European and American parents did.

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Furthermore, Du, Havard, Yu, and Adams (2004) found positive impacts of the frequency of computer use at home on combined performance grades of reading and Math by studying 10th graders from the Educational Longitudinal Study (ELS) 2002 database. In the meantime, Proctor, Dalton, and Grisham (2014) applied computers to facilitate reading performance of the Hispanic ELL students in 4th grade. The researchers embedded features of computers to improve vocabulary and understanding skills within text or speech application. The study found that the frequent use of computers correlated positively with the reading performance of ELL students. However, Chang and Kim (2010), through cross-sectional analyses, found that computer use had negative outcomes in mathematics for non-ELL students. Contrastingly, among fifth graders, Black, Hispanic, and Asian ELLs, who used computers at home for mathematics content, it was evident that they improved.

Computers can provide vocabulary and comprehension support for ELLs who have challenges understanding instructions during the classes (Proctor, Dalton, & Grisham, 2007). Studies carried out on home computer use for American students reported some positive impacts of the use of computers in learning (Du, Havard, Yu, & Adams, 2004). The authors noted that, "Increased access to computers will only have positive results when the educator has a complete grasp of the role and use of computers, and an understanding of the student's home environment and how their deficiencies must be met in order to realize their full potential, thus enhancing society instead of reducing the average achievement" (p. 281). Attewell and Battle (1999) explored the connection between the accessibility of computer use at homes and students' achievements in reading. They realized that the introduction of computers in homes correlated with higher performance grades. Consequently, computers can help ELLs with difficulty in

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understanding content during class in order to gain new vocabularies and acquire comprehension support (Proctor, Dalton, & Grisham, 2007). While investigating the positive impacts of computer use, Norris, Sullivan, Poirot, and Soloway (2003) contended that given the number of educational software programs available within interactive tools like computers or tablets, learners who use such tools are more likely to performance advantages over students who do not use them. The study yielded positive effects of home computer use for different goals for the non-ELLs. Besides, a study conducted by Kim and Chang (2014) used a U.S. nationally representative database of the Early Childhood Longitudinal Survey-Kindergarten Cohort (ECLS-K) in order to investigate the effects of computer use particularly for mathematics. It was observed that the performances of Hispanic and Asian learners who extensively used home computers for Math were higher than non-ELL learners. In addition, Beltran, Das, and Fairlie (2006), in their non-experimental analysis, revealed that there is a strong positive relationship between home computer use, high school graduation, and excellent academic achievements. It means, therefore, that ELLs can comfortably use computers to advance their comprehension as well.

Computers are used to enhance vocabulary and to assist in comprehension for ELLs with difficulty comprehending various directives in classes (Proctor, Dalton, & Grisham, 2007). Research conducted on the use of computers in homes for U.S. learners have brought about positive impacts. The benefits are that it translates positively to students' grades. Norris, Sullivan, Poirot & Soloway (2003) reported that students who use software programs related to education with devices such as computers tend to have a better edge over their peers who are not using the same software. They point out that there is "a significant and substantive correlation

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between technology access and use” (p. 2). Studies carried out by Kim & Chang (2014) used the United States national database. Analysis of the impacts of computer use programs, specifically for Math, has been analyzed by the Early Childhood Longitudinal Survey-Kindergarten Cohort (ECLS-K). The survey showed the benefits of the use of a computer at home for various objectives for non-ELLs. Computers used for purposes of understanding math was connected to a calculation drop achievement for non-ELLs and ELLs. ELL learners who used a computer at home for Mathematics purposes noticed that their grades were higher than those of non-ELL students. Moreover, Beltran, Das, and Fairlie (2006) research realized that there was a strong correlation between computer utilization at home, graduation from high school and better grades.

ELLs' home experience has a significant influence on the way that one gets to achieve in school. The truth of the matter is that, contrary to most educators' assumptions, children's exposure to literacy and various opportunities for learning makes them enhance their language exposures (Cohen, 2011). One misconception is that parents are not interested therefore assuming that they either do not value school or that they cannot give it a priority since they are stressed economically (Cohen, 2011). Often, parents of ELLs are desperate to collaborate with those educating the kids to better the future of their children and as well show their satisfaction with the program of the school. It is no doubt that the promotion of computer home-based programs has significant positive effects on the consequences of the overall outcome (Bannert & Reimann, 2012). Home computer use for United States students has indicated some positive results. The positive impacts of home computer use and the frequency of technology use at home on built-up achievement grades of reading and math through studying tenth graders regarding the Educational Longitudinal Study (ELS) 2002 database (Du, Havard, Yu, and Adams, 2004).

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While looking on the positive debate, Norris, Sullivan, Poirot & Soloway, 2003, argue that given the amount of educational software programs available within interactive tools such as tablets or computers, learners who have used them would likely have significant advantage over students who did not use them. The examination resorted to positive effects of home computer use for different goals for non-ELLs. Further, computers utilize mainly using for math was associated with a dropped gap in math accomplishment between non-ELLs and ELLs. Overwhelmingly, when Hispanic learners and Asian students who extensively used home computers for Math expectation, their Math performances were higher than non-ELL learners were. Additionally, Beltran, Das, and Fairlie (2006) in their non-experimental analysis discovered that there is a stable positive relationship between high school graduation, excellent academic achievements and home computer use. Despite the positive findings of home computer use, Wosesmann & Fuchs, 2004 studied the relationship between home computer use and the academic achievements. Moreover, they used the student-level database of the Programme for International Student Assessment (PISA), after analyzing, they discovered that there is negative correlation between home computer use and reading as well as math scores. Therefore, it is necessary to relate home computer use to learners' achievement of higher performance as explained in this analysis and backed up with previous researchers' works depicted above.

Negative Impacts of Home Computer Use

Apart from the above mentioned factors that support the use of computers at home for learning, especially for ELL students, others studies have proposed the negative influence of home computer use on those learners. These studies imply that there are unacceptable outcomes that go together with teachers not having the necessary skill set to implement technology inside a

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classroom (Baylor & Ritchie, 2002). Also, the use of computers for Mathematics was associated with an increased gap in Math achievement between non-ELLs and ELLs. Even though there were positive findings about use of computer at home, in their study of the relationship between home computer use and the academic achievements using the student-level database of the Programme for International Student Assessment (PISA), Woessmann & Fuchs (2004) affirmed a negative correlation between home computer use and reading as well as Mathematics scores. In Woessmann & Fuchs's research, they revealed that there is a negative connection between computer use at home and better performance.

From this discussion, it is evident that there is provable literature on advantages of home computer use among ELLs that suggest the importance of using computers for academic achievement or performance among this group of learners. Meanwhile, there is also identifiable literature on the negative impacts of relying on home computer use among ELLs. However, from the literature, it is also perceptible that there is no adequate consideration for how home computer use can be of benefit to ELLs' performance in regards to language and vocabulary. Also, the existing literature does not provide a detailed analysis of how home computer use facilitates learning among ELLs, especially Hispanic students who perceivably tend to avoid joining native English speakers due to their language proficiency levels. Therefore, this research seeks to fill this gap by establishing how home computer use benefits ELLs in reading and overall academic performance, and more so for Hispanic students.

Research question

The general research question that will guide this study is:

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What is the relationship between home computer use and the reading performance of ELLs?

Conclusions

In summary, this chapter has reviewed the literature regarding the impacts of home computer use and ELLs' academic achievements. It is observable, from the scholarship reviewed, that home computer use has helped to enable students of foreign languages to achieve excellence in different ways, including academic excellence. Meanwhile, other studies have also revealed that home computer use might not readily provide the academic performance required for all students. Still, it is obvious that there are no adequate studies that have been based specifically on academic (i.e., reading) performance of Hispanic students. As such, the current study lays this important background to seek and comprehend how home computer use can impact ELLs' reading performance. The next chapter, Methodology, will address the methods and techniques that the current study will employ to collect data from the participants in this study.

Chapter 3 – Methodology

In the previous chapter, I presented a literature review to support a study investigating the impacts of home computer use on ELLs' reading development. The majority of studies that I reviewed showed strong evidence of the home computer use and its influence on ELLs' reading performance with special attention to Hispanic students. Thus, since L2 reading skill is considered the most necessary skill for ELLs in academic settings (as cited by Alsamadani, 2009), ELLs' low performance in reading ability will hinder them in achieving such development in the general academic setting. Hence, this study specifically aimed to investigate the impacts of home computer use on ELLs' reading performance and the ways in which using computers at home, in turn, affect their reading development. Thus, the study hypothesizes that there is a direct correlation between the use of home computers and the reading achievement of ELL students, and specifically Hispanic students. Thus, this study gathered the research data from the target population using a survey method. Further, the study provides more insight into the impact of home computer use on reading development. Moreover, awareness of such effects is critical in understanding the seriousness of the gap in performance between Hispanic and non-Hispanic students in reading performance and whether using home computers will serve to help the target population in enhancing their reading performance in their L2. Hence, the uniqueness of this study lies in targeting the most significant minority in the United States of America, the Hispanic race, who are the most prominent group who have lower achievements in reading ability as proven in the literature review section.

Research frameworks

The research interests identified in the introduction section necessitate a project design based firmly on the foundational principles of quantitative research. As Abdullah and Raman (2000) stated: "Quantitative research is structured, logical, measured and carried out on a wider scale than qualitative research which is more intuitive, subjective and carried out in a more intense manner on fewer subjects" (p. 121). Reading is one of the most imperative skills for English Language Learners (ELLs) to learn a second language (SL) or a foreign language (FL) and get high academic achievement. Thus, utilizing reading skills helps to achieve success in comprehending the context; for instance, making derivation, comprehending the organizational pattern, recognizing the general idea and determining the relationship between these issues within the context (Donin, Graves, & Goyette 2004). Thus, the relationship between using computers and students' reading performance requires a research blueprint that fits the goals of the quantitative research. According to Borg and Gall (1989), the primary concern of quantitative research is the disclosure of causal relationships between variables (as cited in Abdullah & Raman, p. 20). Thus, this study aimed to investigate the relationship between various significant variables. The independent variables were three computer variables: 1- computer access at home 2- computer use for variety of purposes, and 3- computer use for reading purposes. The dependent variable was the students' reading achievement, which I measured through the students' scores on a reading test. Moreover, most quantitative research is to examine hypotheses (Abdullah & Raman). Consequently, this study is upon a positivistic assumption, which hypothesizes that there is a positive relationship between home computer use and the reading performance of ELLs. Ultimately, quantitative research is more interested in the objectivity and

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the validity of what has been examined (Abdullah & Raman, 2000). Hence, this study took into consideration the previous studies as essential resources in the literature review section in Chapter 2.

The Dependent Variable

Item response scale scores on the ELA Reading Test were assigned as the major dependent variable for this study; these scores were coded with two items: 1) "what is the student score on the reading test?" responses for this item were measures on a 1 to 4-point scale ranging, 1 (1-25), 2 (25-50), 3 (50-75) and 4 (75-100). 2) "Was the student's reading score in ELA test higher after using computer?" responses for this item were coded 1 for yes and 0 for no.

The Independent Variables

When it comes to the independent variables, the researcher designed the survey items (or questions) following the Likert-Scale in two dimensions: the agreement responses, which were represented in Item 6 and the frequency responses, which presented in the items 3,4,7 and 8. Unlike the Likert-Scale, the researcher positioned two binary 'Yes,' or 'No' items, which were presented in the Items 2 and 10. The survey items were grouped by categories as shown in Table 1. The item that determined the students' grade level was the Item 1. To examine the students' background in the reading zone, the researcher included Item 8. Item 2 was formed to find out the extent of students' access to a home computer. To measure the proficiency of using a home computer, the researcher designed Items 3 and 5. The three Items 4, 6 and 7 were positioned in order to examine the frequent use of a home computer in order to learn reading or to improve the reading ability. The last two items 9 and 10 were the measurement tool that the researcher drew on to address the answer for the research question in which there is a direct relationship between

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home computer use and the students' scores in reading test.

Items on the Survey as Grouped by categories

Item Category	Item No
The student's grade level	1
The student's reading background	8
The 1 st independent variable: Computer access at home	2
The 2 nd independent variable: computer use for variety of purposes	3, 5
The 3 ^d independent variable: The frequencies of home computer use to learn reading or for reading purposes	4, 6, 7
The dependent variable: the student's score in reading test.	9, 10

Settings and Participants

I conducted this study in two different settings and targeted Hispanic students who are 6th, 7th and 8th graders. Both settings are located in Chautauqua County, New York, in the United States. The first setting is coded as the School #1 in this paper. This middle school is made up of 46.2% Hispanic students. Approximately 251 students are Hispanics. Nevertheless, 214 students are from other ethnic groups such as 41.7% White, 0.5 Asian, 9.2, Black, and 0.9 American Indian. When it comes to the gender distribution in this school, genders are entirely equal with 50 males and 50 females (Startclass, n.d). The second setting is coded as the School #2. This secondary school is made up of 10.4% Hispanic students. Roughly 40 students are Hispanics. Nevertheless, 410 students are from other ethnic groups but White outnumbers the other races, which forms 83.8% of the student body. The other ethnic groups who enroll in this school are

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2.2% Asian, 1.6 Black, Two races 1.8 and 0.2 American Indian. When it comes to the gender distribution, 56 of students are males and of them 44% are females. (Startclass, n.d).

Furthermore, in 2016, there were only 35.7% of the student percent who passed the New York State Regents Examination Exams across all subjects which is lower than average for New York. Over and above, 35% of students' percent who passed ELA test (Startclass, n.d). The participants were either female or male. However, there was no vast diversity of this population regarding the ways in which socioeconomic status, or other variables would affect the findings of this study.

The participation in this study was voluntary. Those who chose to do the study survey were recruited as potential study participants and the samples were randomly assigned for this study.

The reason that I chose these particular settings was that 49% of the students attending School #1 are of Hispanic ethnicity. However, there is a significant reason for choosing this specific setting for collecting the study data, which is that, in 2016, the students who passed the New York State Regents Examinations across all subjects in this school scored lower than average for New York. Students who passed the New York State Regents Examinations were only 43.3%. However, the percent of students who passed the ELA in test were only 18% (Startclass, n.d) Nevertheless, the reason that I chose the second setting was the lack of participants in the School #1. Thus, I attempted to find middle/secondary schools that have Hispanic students and I found School #2 as my second setting in which to conduct this particular study.

Data Collection

In order to collect data for this study, I used a cross-sectional survey. According to Borg and Gall (1989), the cross-sectional survey aims to collect data from a sample of a predetermined population at one point in time that may take more than a day or a month. Also, this kind of

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survey can be analyzed to explain the relationship between two or more variables (Abdullah & Raman, 2000). I provided the instrument sheet (survey) to the administrators for each school. The survey was designed in one section. This section was about the accessibility of computers at home, the proficiency levels of computer use for variety of purposes, the frequencies of computer use to learn reading, and other questions about a home computer use that related to reading ability. There were 10 questions written in a simple and understandable way so that the participants didn't get confused. In front of each question, there were three to four specific answers for the questions. The participants only had to check ✓ in order to choose the answer that they wanted. The objective of the researcher was to facilitate the survey to students, especially that the majority of them are still in the early stages of learning the English language. In addition, the researcher deliberately positioned specific questions the strictly relevant and related to the inquiry of the research question without using additional questions that distracting students' mind and does not add any valuable value for the research and researcher.

School #1:

To start conducting data for this study, I sent an email with the project proposal documents, such as the Human Subject Review Committee approval for my study, the survey sheets in both English and Spanish languages, the parental consent form and the student assent form to the School #1 principal in order to let her know that I was required to conduct original research as part of a Capstone: Master's Thesis project, which requires gathering data through a survey from this school setting. After that, I contacted the school's administrative office in order to set up an appointment for meeting with the principal. The assistant told me to come at 8:00 am. I printed out 110 copies of the English version and the Spanish version of the survey (see

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Appendix A & B). Further, I printed the same number of the parental informed consent form and the student assent form (see Appendix C & E). I went to School #1 on the morning of February 8 in order to meet the principal. During the meeting, I introduced myself to the principal as a student in the Teaching English to Speakers of Other Languages program at SUNY Fredonia. I clarified and justified the significance of this research and answered every concern about gathering the data. The principal was extremely interested in the research topic and said that having positive findings would inspire us to encourage students to use a home computer. Moreover, teachers might draw on home computers as a new learning device, which might propel teachers to plan homework assignments that engage the use of home computer. Then she asked the school's assistant principal to translate the parent informed consent form into Spanish. After having everything done, the instrument sheets (i.e., the surveys) were provided to the school's principal, in person, and then she introduced and distributed them to students. The participants in School #1 were asked to return the survey papers after three weeks of receiving them. After three weeks of this procedure, the researcher contacted the school's office again to set up an appointment for collecting the data. Ultimately, the researcher went to School #1 and collected the data on February 23. In the end, the researcher distributed 110 survey sheets, and the participants returned only 7 of them. Due to the large number of the targeted students who enrolled in this particular school, the low response rate was not foreseeable to the researcher. The reason that this happened is that the researcher was not the person who communicated directly with the students and explained to them the value of her research for them. While there were 240 students in the potential pool, only 110 of the surveys were disseminated to them. This was a mistake that could have been overcome if the researcher had sent 240 copies of the survey.

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School #2:

In order to collect the required data, I had to find another school that would accept participating in my study due to a number of reasons: the first reason was the unsatisfactory number of participants from the School #1 who participated in this study that were only 7 out of 240. The second reason was the principal's refusal to re-conduct the study in the same school, which led to the inability to utilize such a small number. Looking forward a new school that has middle/secondary Hispanic students was the next step that I took. After doing a web search, I found School #2 and decided to use it as my second school setting because of the high number of Hispanic students (about 40 students). I contacted the school's main office and set up a time to meet the principal. I printed out 40 copies of the English and Spanish survey and 40 copies of the parental consent form and the student assent form. However, I printed out the Spanish version of the parental consent form that had been translated by the School #1 assistant principal to the School #2's parents (see Appendix F). Moreover, in my disposition as a researcher, I had to translate the student assent form into Spanish and consulted a friend of mine who speaks Spanish about the accuracy of the translation. Eventually, the translation was very accurate, which facilitated reading and comprehending the participation policy for students, especially for those who still struggle in the earlier stages of the language acquisition (see Appendix D). On March 14, I went to School #2 and met with the principal. She was cooperative and pleased to help conduct this study about her students and enthusiastic to know the final findings of it. I explained the study to her and went over every paper of the essential documents from my project proposal that I had printed out for students and illustrated the function of each document. The principal told me that my study had to be approved by the school board. For that reason, she and I set up a

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new appointment to meet, which was March 23. On this day, she informed me that the approval paper would be received on April 10 and that we have to wait for it before distributing the survey to students. She and I planned a new plan to distribute the survey to students. The principal invited Hispanic students for lunch on April 11. On that day, I introduced myself to those students, explained the study, answered students' questions, filled out one sample of a survey as an example and finally distributed the survey sheets to them. The principal confirmed to me that the data would be ready to collect on Friday, April 13. However, the School #2 participants were asked to return the survey papers after a week due to the shortness of time.

The Survey Items and Coding

There were two general items in the survey, which assigned significant meaning in terms of the students' grade levels and the students' reading background: 1) "which grade is the student in?" and responses for this item were coded "6" (for 6th graders), "7" (for 7th graders) and "8" (for 8th graders). 2) "How often does the student read books outside the classroom settings?" and responses for this item were measured on a 0 to 3-point scale ranging, "0" (Never), "1" (rarely), "2" (Sometimes) and "3" (Often).

There were three main computer variables for this study: 1) Computer access at home, which was measured by a survey item - "Does the students have a home computer use?" Responses for home computer access were coded "0" for "no" and "1" for yes. 2) Computer use for variety of purposes, which measured the student's proficiency level of computer use for a variety purposes as measured by 2 questions. A) "Does the student use the computer for a variety of purposes?" and responses for this item were measured on a 3-point scale ranging, "1" (Not yet), "2" (Rarely) and "3" (Proficient). B) "How many hours does the student use computer

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daily?" and responses for this item were measured on a 3-point scale ranging, "1" (Half an hour to one hour), "2" (Two to three hours) and "3" (Four to five hours). 3) The frequencies of home computer use to learn reading or for reading purposes were measured by 3 questions. A) "How often does the student use the computer for reading purpose?" and responses for this item were measured on a 0 to 3-point scale ranging, "0" (Never), "1" (rarely), "2" (Sometimes) and "3" (Often). B) "A home computer use is an effective resource to enhance reading ability" and responses for this item were measured on a 3 to 0-point scale ranging, "3" (strongly agree), "2" (Agree), "1" (Disagree) and "0" (Strongly disagree). C) "How often does the students use computer for reading assignments?" and responses for this item were measured on a 0 to 3-point scale ranging, "0" (Never), "1" (rarely), "2" (Sometimes) and "3" (Often).

Data Analysis

The data analysis for this study consisted of exploring the data from the survey that was organized and analyzed using percentages. As Madrigal and McClain (2012) stated: "Statistical analysis lets us derive important facts from research data, including preference trends, differences between groups, and demographics" (p. 2). The Statistical Package for the Social Sciences (SPSS) was used for data analysis to clearly display the data charts and performed for statistical analysis. The instruments may have limitations in measuring what they purport to measure, as will be further discussed in Chapter 5. Finally, only subsequent research with other audiences and with different instruments will help further our understanding of the concepts being measured in the study.

Conclusions

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I initially considered conducting this study about not only using a home computer but also about using a school computer and the ways that these techniques can reduce the gap of the study problem which is the low reading performance of ELL students. However, since I reviewed the literature that related to these two different paths, I found numerous studies were interested in the use of school computers. I also found some positive findings related to home computer use, and its relation to positive reading performance. Eventually, I ended up centering on one specific area that reflected my interest and my experience as non-native English speaker about using a home computer to promote reading development. Moreover, conducting such a study will add some knowledge to the educational field that concerns any research that could help to enhance students' academic achievement. Additionally, if the study has positive findings, this means that ELL students have to focus on home computer use in their studying for reading test to acquire satisfying scores. In the next chapter, Results, I will address the results and findings that I obtained from the research participants, and whether computer use affected participants' reading development. I will also touch on some techniques that the current study employed in order to analyze data from the particular participants in such a study.

Chapter 4 – Results

In the previous chapters, the researcher addressed the study's problem regarding some statistic views that showed the low performance of ELLs in reading achievement. Then, the researcher hypothesized that a home computer use could tackle the study problem. Additionally, the researcher presented some pieces of evidence from a review of the relevant literature that strongly support her hypothesis. To investigate the hypothesis, the researcher collected data from two various middle schools by distributing surveys to students who were recruited to be the significant samples of this study. The researcher positioned one section on a survey, which consisted of 10 questions that strictly related to the effectiveness of a home computer use, which measured by the students' ELA reading scores. In order to analyze the data collected during my study, I used the Statistical Package for the Social Sciences (SPSS). This allowed me to display clearly the data charts and statistical analysis that emerged from this study. For collecting the data, the researcher sent 110 surveys to School #1, and only 7 were returned. To School #2 the researcher sent 40 surveys, and only 6 were returned. The average number of the participants from both schools who recruited to be the major samples of this study was 13 students. Thus, the researcher calculated the frequencies and responses in each item and each variable in the study's survey.

When it comes to the gender type in this study 38.5% of them were boys, and 61.5% were girls (See Figure 1).

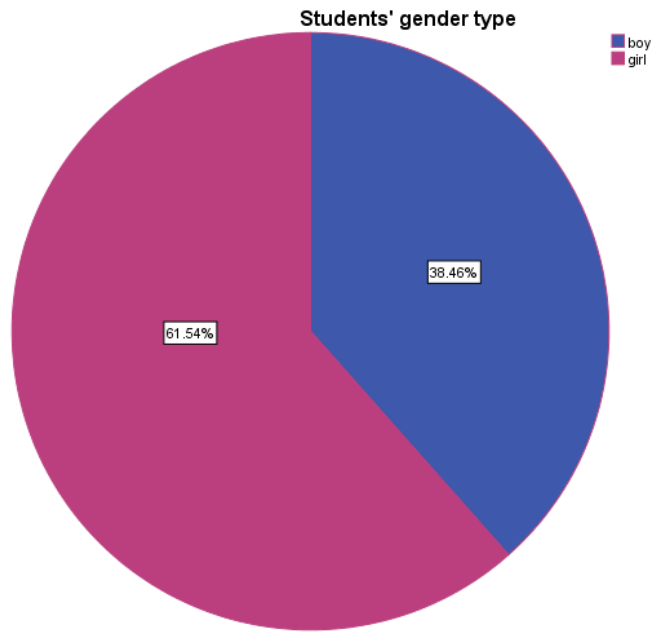


Figure 1: Responses to The Participant’s Gender

Initially, the researcher assigned the study's sample and designed the survey for students from 6th, 7th and 8th graders. However, after visiting the schools, the researcher didn't find any samples from grade 8, who eager to participate in such a study. Thus, the researcher omitted the choice (grade 8) and alternated by (grade 5). The participants' grade levels varied between three grade levels – Grades 5, 6 and 7. 7th graders outnumbered those in other grades by 9 to 4. The 5th graders and 6th graders had the same percentage, which was 15.4%; however, the 7th grader's percentage was about 69.2% (See Figure 2).

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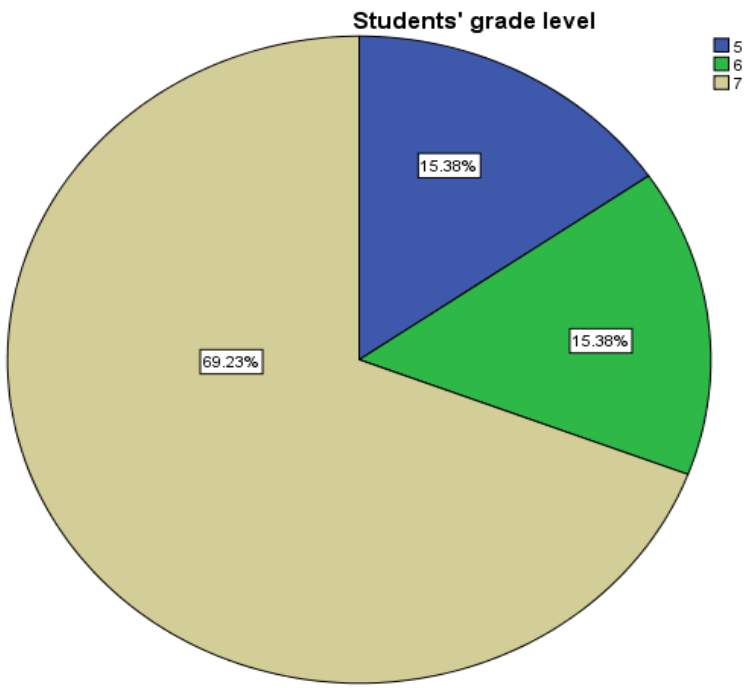


Figure 2: Responses to the participant's Grade Level, Item 1

When it came to assessing the first independent variable, which was the students' access to a home computer use, there was a significant result. 11 out of 13 (84.6%) of participants who answered 'yes' to the question "does a student have a home computer." The remaining two students in the sample (15.4%) answered 'no,' and wrote comments that they have other devices such as laptops (See Figure 3). Hence, concluding this particular item, 100% of students in the sample responded that they had access to a home computer device.

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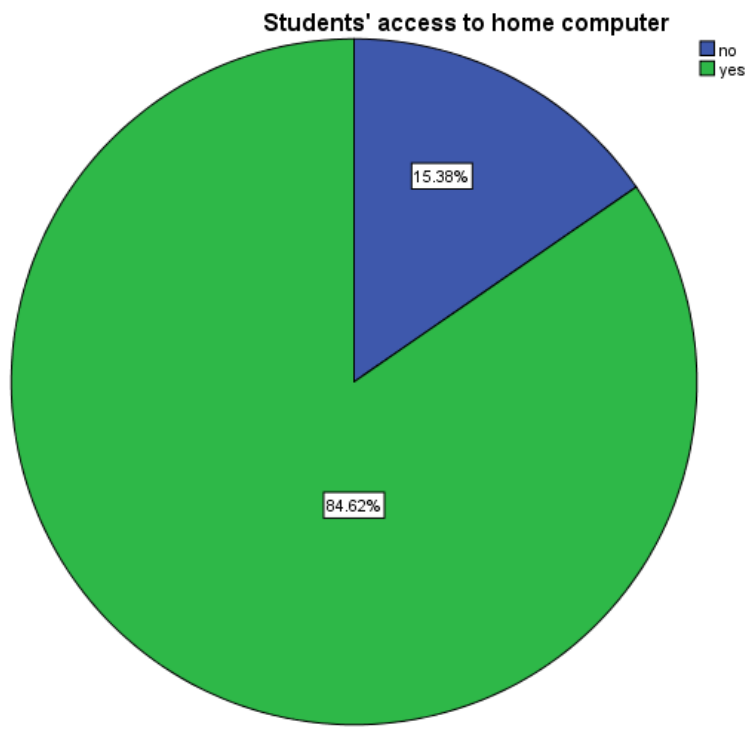


Figure 3: Responses to The Accessibility of a Home Computer, Item 2

The second independent variable, which measured the proficiency of using a home computer, was presented in two items. The first item asked whether students use a home computer for a variety of purposes. The answers for this particular question were designed by following a Likert–Scale in the frequency dimension, with the response options “never,” “rarely,” “sometimes” and “often.” Participant responses ranged across the spectrum of these options. Two participants (15.4%) responded “Often;” three participants (23.1%) responded “Sometimes;” 7 responded “Rarely;” and only one responded “Never” (See Figure 4 below).

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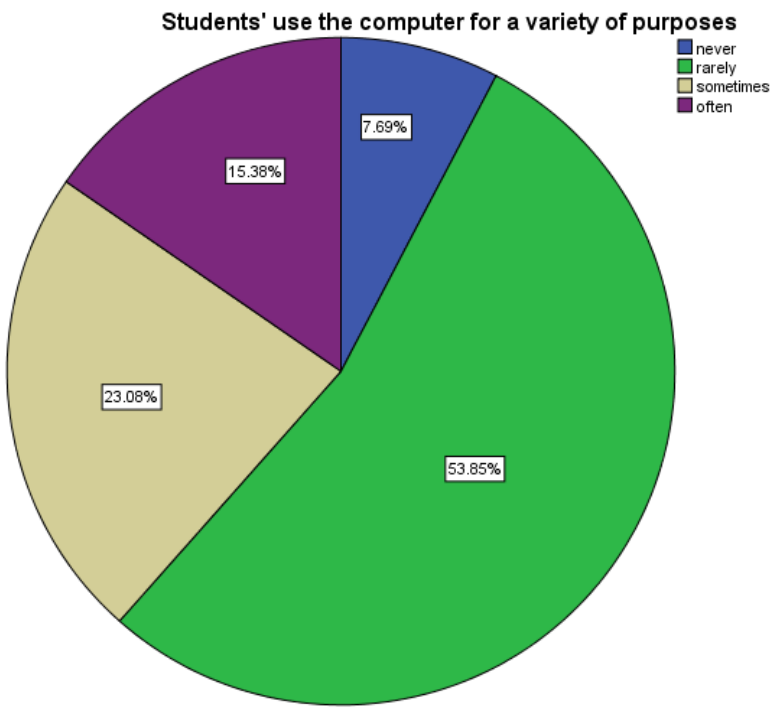


Figure 4: Responses to The Proficiency of Using a Home Computer Item 3

The second item that measured the proficiency of using a home computer asked about the number of daily hours of home computer use. Nine of the participant sample of 13 students (69.2%) spent about half an hour to one hour using a home computer daily. The Four participants (23.8%) spent two to three hours daily on a home computer. Only one participant (7.7%) spent four to five hours daily on a home computer (See Figure 5).

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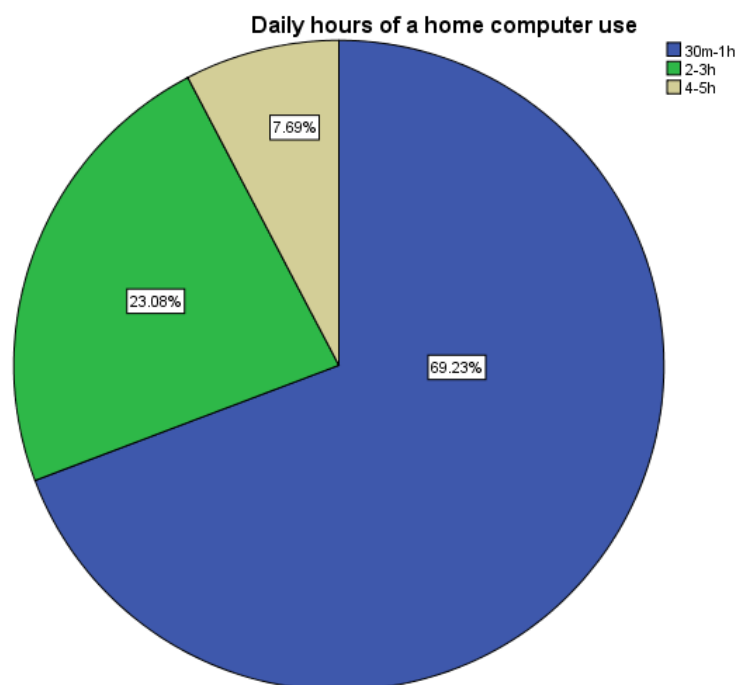


Figure 5: Responses to The Proficiency of Using a Home Computer Item 5

The third independent variable was positioned in three different items in order to examine the frequency of using a home computer to learn reading or to improve reading ability. The three items followed a Likert-Scale in two dimensions. The agreement responses represented in Item 6 were about the effectiveness of using a home computer. The response options to this question were: “strongly agree,” “agree,” “disagree” and “strongly disagree.” Six respondents from the participant pool of 13 (46.2%) answered “Strongly Agree,” four participants (30.8%) responded “Agree,” and three participants (23.1%) responded “Disagree.” There were no responses to the “Disagree” choice (See Figure 6 below).

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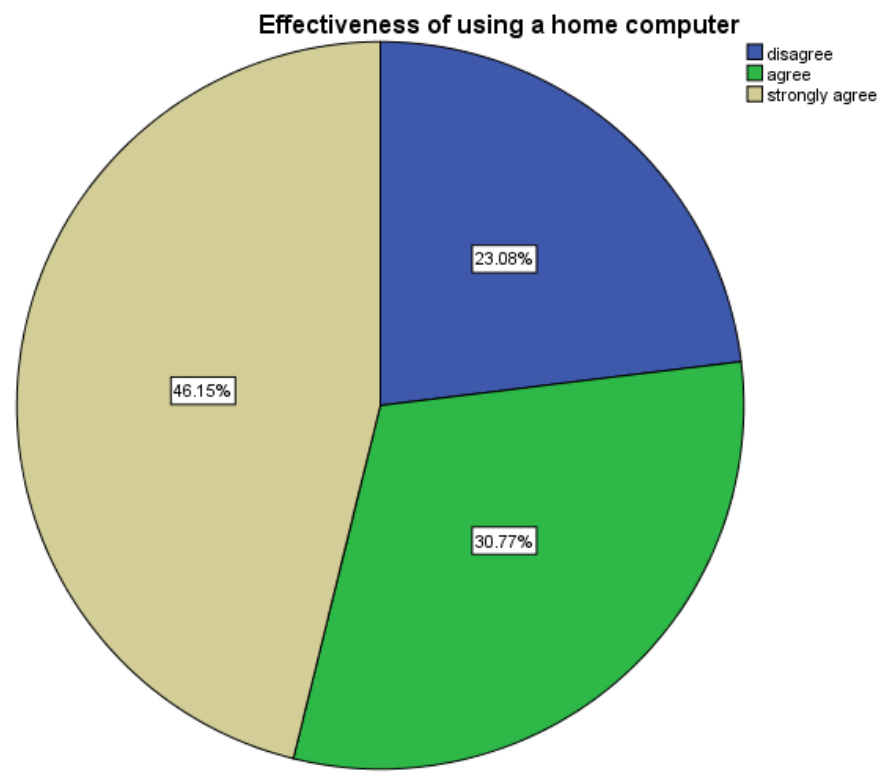


Figure 6: Responses to The Effectiveness of Using a Home Computer Item 6

The second Likert-Scale dimension included the following frequency responses: “never,” “rarely,” “sometimes” and “often” for two items. The first item, Item 4, asked about the frequency use of a home computer for reading purposes. Three respondents (23.1%) from the participant pool of 13 students responded “Never;” four participants (30.8%) responded “Rarely;” 6 participants (46.2%) responded “Sometimes.” There were no “Often” responses (See Figure 7 below).

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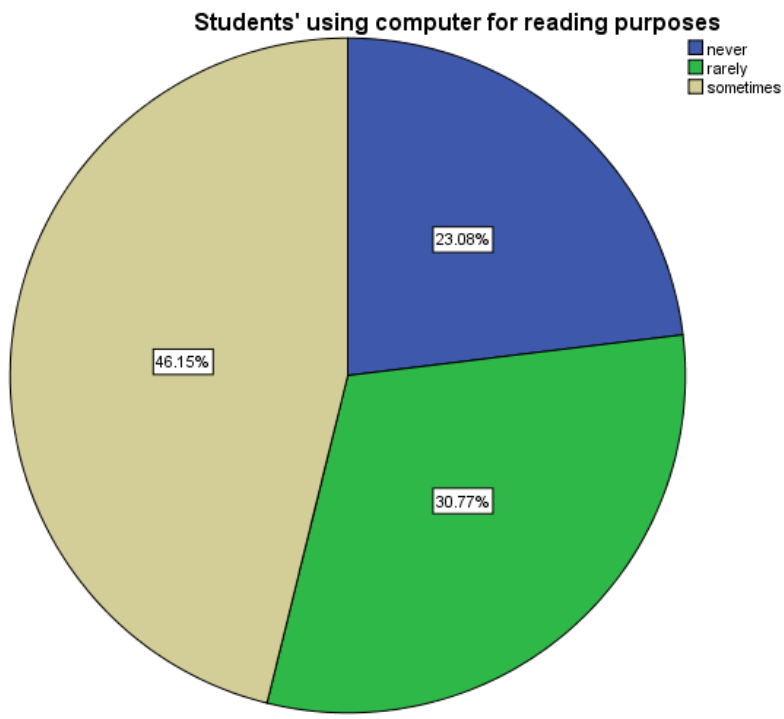


Figure 7: Frequencies of Using a Home Computer for Reading Purposes Item

The second item, Item 7, asked about the frequency use of a home computer for reading assignments. Four participants (30.8%) responded “Never;” three participants (23.1%) responded “Rarely;” 6 participants (46.2%) responded “Sometimes.” There were no “Often” responses (See Figure 8)

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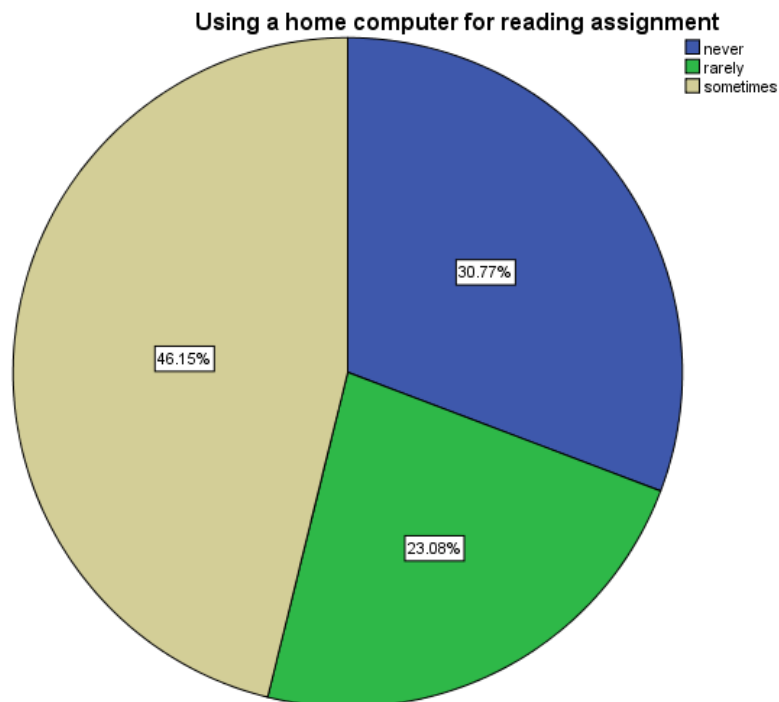


Figure 8: Frequencies of Using a Home Computer for Reading Assignments Item 7

To examine the students' background in the reading zone, the researcher included Item 8. In this particular item, students were asked whether they read books outside the classroom settings. The answer to this particular question, I designed a Likert –Scale with a frequency dimension, including the response options “never,” “rarely,” “sometimes” and “often.” Two participants (15.4%) responded “Never;” four participants (30.8%) responded “Rarely;” six participants (46.2%) responded “Sometimes;” and only one participant (7.7%) responded “Often” (See Figure 9).

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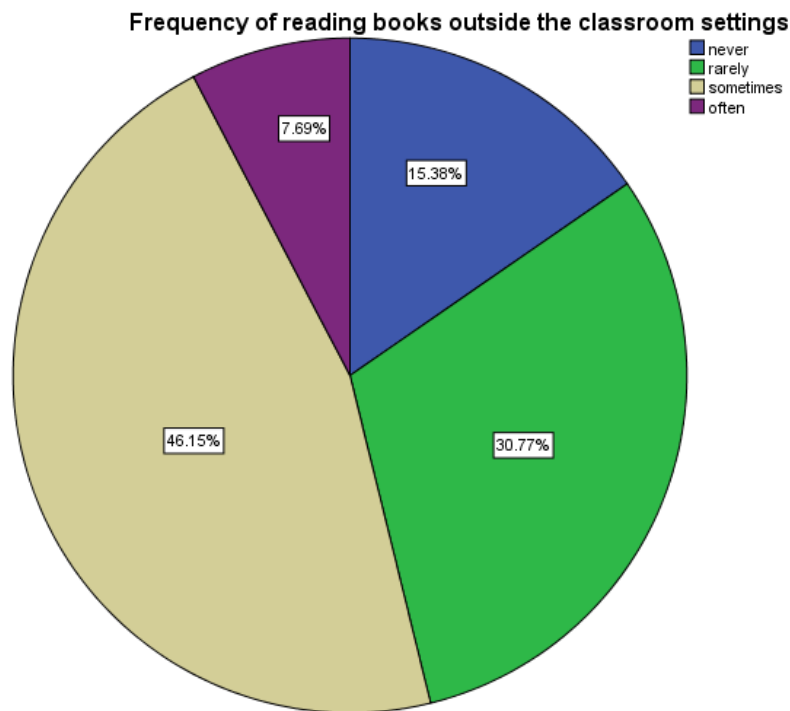


Figure 9: Responses of Examining Students' Reading Background Item 8

The dependent variable in this study was the students' scores in English Language Arts (ELA) reading test. To examine this particular variable, the researcher embedded two different items, which were Item 9 and Item 10. In Item 9, the students were asked about their previous scores in the ELA reading test. The initial responses for this item were measured on a 1- to 4-point scale ranging, 1 (1-25), 2 (25-50), 3 (50-75) and 4 (75-100). However, in the data collection process, there were two participants who didn't answer this particular question. Thus, the researcher decided to change the scale range and add 0 to indicate "No Answer."

One participant (7.7%) from the sample of 13 students chose the answer (1-25); three participants (23.1%) chose the answer (25-50); seven of the students (53.8%), or more than half of the sample, chose the answer (75-100). However, there were two participants didn't answer

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this question (See Figure 10).

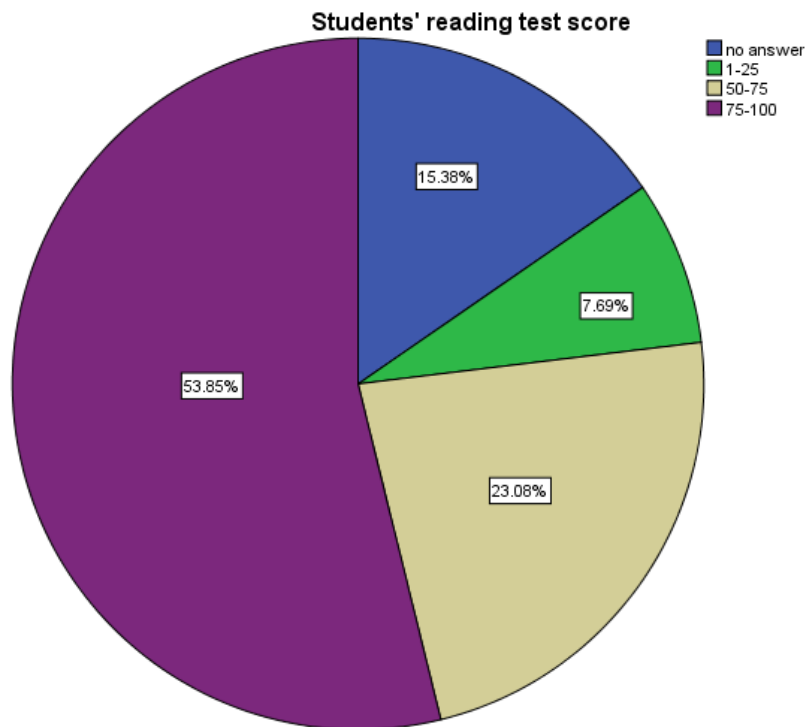


Figure 10: Responses to The Students' ELA Test Scores Item 9

The second item that asked whether students' scores in the ELA test were higher after using a home computer. The response options to this question on the survey were either "Yes" or "No." However, after collecting the data, I noticed that there were two participants didn't answer this particular question. Thus, the researcher decided to change the scale range and add "0" to indicate "No Answer." Eleven of the 13 participants (84.6%) chose the answer "Yes." The remaining two students in the sample did not answer this question. Thus, two responses to this question were entered as "No Answer" (See Figure 11).

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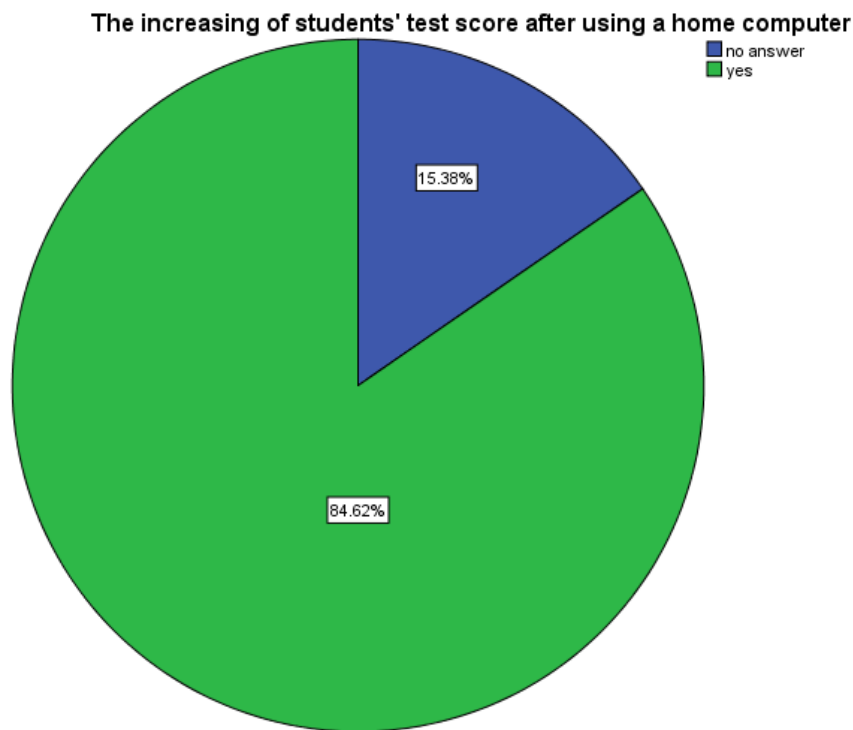


Figure 11: Responses to The Students' ELA Test Scores After Using a Home Computer Item 10

Conclusions

In summary, the study samples were not sufficient to generalize the final findings for such a study. Only 13 surveys returned out of 150. However, when it comes to defense the researcher hypothesis, it would be better if we took a brief look the study's significant variables and it's correlation with the dependent variable, which was the students' ELA reading test scores. It obviously shows that the first major variable which the home computer access is strictly correlated with the students' ELA reading test scores. All students who participated in this study had access to a home computer device, and 11 of them responded "Yes" to Item 10 which asked whether or not their ELA test were higher after using a home computer. Moreover,

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more than half of students' ELA test scores were in a high average, which was between (75-100). However, it's interestingly to see that the second independent variable, which was "the frequency of using a home computer to learn reading," had higher average score than the first variable, which was "the proficiency of using a home computer for variety purposes." Ten respondents from the participant pool of 13 (76.92) agreed with the statement of the effectiveness of a home computer use. Furthermore, Almost half the participants (46.15) used a home computer for reading purposes and reading assignments. Hence, There was a direct correlation to some extent between the frequency of a home computer use for reading objectives and students' reading test scores. On the other hand, more than half of participants responded "Rarely" for Item 3, which related to the proficiency of using a home computer. Further, nine of the participant sample of 13 students spent about half an hour to one hour using a home computer daily. Thus, there was weak correlation between this particular independent variable, which was the proficiency of using a home computer and students' ELA test scores.

In the next chapter, Discussion, I will address the evaluation and interpretation of the data related to this study, state the conclusions from the above results, find similarities and differences between my study and other studies, and candidly discuss the study's limitations and possibilities for further investigation.

Chapter 5 – Discussion

In the previous chapter, the researcher analyzed the data that were collected from the study's sample in School #1 and School #2. This study's primary objective was to investigate the effects of using computers on English Language Learners (ELLs') reading achievement by hypothesizing that the use of computers at home could have an impact on the fulfillment of ELLs in reading. The inquiry that guided this research was the effects of using computers at home for ELLs' success in reading. Consequently, computers can help ELLs who have challenges in understanding some content while studying. They also assist the student in gaining more vocabulary and comprehension support (Anderson & Freebody, 1983). Proper learning of vocabulary is vital due to its significance in foreseeing outcomes in reading comprehension amongst students who speak one language. Moreover, during the late 1990s, the advancement of using home computers motivated various families to buy computers for their children, thereby enabling connections with a network of different families (Malamud & Pop-Eleches, 2010). According to the 2014 U.S. Census Bureau statistics, 78.9% of households in the U.S owned computers, with this number increasing year by year. This could be as a result of the functionality of computers. Many previous researchers have listed the pros and cons of the usage of computers for learners' attainment of learning skills. According to Attewell and Battle (1999), computer utilization at home is directly proportional to a better grade in subjects such as Mathematics and Reading. Consequently, Fairlie (2005) claims that computers and the use of Internet supplements the 2001 CPS data that showed that students using computers are likely to be enrolled in school.

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The present findings of this study, which examined the impact of home computer use and its relation to ELLs' reading performance, showed that there is a positive relationship between a home computer access and students' reading test scores (See Chapter 4, Figures 8, 9 and 10). Almost all students who participated in this study responded that they had access to home computer devices. In addition, when it comes to the dependent variable items, which were Item 9 and Item 10 on the survey sheet, the participants' responses were highly positive. Firstly, they were asked about their previous English Language Arts (ELA) test reading scores and more than half of students' ELA test scores were in a high average, which was between (75-100). Moreover, even though there were two missing answers on Item 10, which asked whether or not students' scores get higher after using a computer, 11 participants responded, "Yes" to this particular Item. Thus, this particular item showed that there is a direct correlation between a home computer access and the students' ELA reading test scores. This particular finding is quite consistent with previous research that found positive effects from having a home computer in mathematics performance (Attewell & Battle, 1999; Woessmann & Fuchs, 2004). However, one study with confounding results, Wittwer and Senkbeil (2008), found that there was no relationship between a home computer access and students' mathematical performances.

Furthermore, the second independent variable, which was "the frequency of using a home computer to learn reading," had a significantly higher average score than the third variable, which was "the proficiency of using a home computer for various purposes." Ten students from the participant pool of 13 (76.92%) agreed with the effectiveness of a home computer. In addition, 6 students from the participant pool of 13 (46.15%) used a home computer for reading purposes and reading assignments. Hence, There was a quite clear, direct correlation to some

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extent between the frequency of a home computer use for reading objectives and students' reading test scores. This particular finding is quite consistent with previous research that found that computer use for mathematics classes and various educational purposes had positive effects (Kim & Chang, 2010).

In contrast, more than half of participants (53.58%) responded "Rarely" for the item that related to the efficacy of using a home computer. Further, 9 students from the participant pool of 13 spent less than an hour daily in using a home computer. Thus, there was a weak correlation between the proficiency of using a home computer and students' ELA test score. On the other hand, Kim and Chang (2010) found a positive correlation between the proficiency level of a home computer use and the students' mathematical achievements. Nevertheless, the researcher examined the relationship between students reading books at home and students' scores on ELA test. The result showed that more than half of the participants read books outside classrooms, which showed a direct relationship between the students' reading backgrounds and their ELA test scores. However, this particular result is inconsistent with previous research that found that the availability of educational books at home didn't predict reading and mathematics scores (Attewell & Battle, 1999). Overall, the researcher concluded that a home computer use is associated with students' reading performance, which might help to increase their scores on the ELA reading test. These above results are entirely consistent with previous research that showed that computer use has a positive effect on 9th graders by increasing reading and mathematics test scores (Casey, Layte, Lyons, & Silles, 2012).

Limitations

Although present finding shows positive outcomes, there are some critical limitations in

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such a study to consider when interpreting these findings. First, the study was conducted with only one group of English Language Learners (ELLs), who were from the Hispanic race, in one geographical location, which was in Chautauqua County, New York, in the United States, and on one academic curriculum, which is reading. Second, the sample size for this study was not sufficient, with only 13 surveys returned out of 150. Moreover, School #1's principal refused to re-conduct the study on School #1 setting. Thus, generalizing the result for other ethnic groups, geographic settings, and academic curriculum is not justified and warranted as of now. Third, the study was conducted during a short period; School #1's data were collected after three weeks, and School #2's data were collected after only one week, and no generalization data were collected. Therefore, would not be appropriate to conclude, therefore, that the same results would be obtained over a more extended period and that the outcome would be the same regarding other groups of ELLs (e.g., Asian) and that the findings would correlate with other curricula (e.g., mathematics, science).

Further Investigation

In summary, this study, based on other previous studies, ensured the expansion of the scope of computer use at home. Current findings indicated that there is a definite correlation between home computer use and reading performance, which was measured by students' previous ELA test scores. However, there was a quite weak correlation between the efficacy of using a home computer and students' reading achievements. Moreover, research studies in the future could also fill the gaps that have been pointed out such as the common belief that there are negative impacts regarding the use of computers at home. I have, however, not come across many studies that elaborate on the adverse effects that may be brought about by the use of

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computers at home, such as health issues, which would do more harm than good. However, it may show remarkable outcomes that would motivate policymakers to come up with new legislation, which emphasizes the significance of using computers for educational purposes. Moreover, future studies may also expand the sample size, which leads to accurate results and facilitates the generalization process. Including various racial categories would be crucial when measuring their reading outcome by using home computer devices. Expanding the period would also be vital in order to have maintenance data that help to examine such a hypothesis.

The audiences anticipated to benefit from this research include researchers willing to read various studies, parents, guardians, tutors, students and policy makers. Researchers will comprehend better a topic in technology that still has more to be studied in the research field. Tutors and teachers who strive to motivate their students towards academic success can utilize this study in order to encourage the use of computers at home since this could be a stepping-stone to achieving better outcomes in academic performance. A possible instance could be a teacher requesting students to research and read about a certain topic that is to be discussed in class in the future. On the other hand, parents who are concerned about the welfare of their children can also use this research in order to motivate their children to use computers at home as a means to improve their grades and for the school's purposes. Students can also ensure that they benefit from this study by employing its findings, hence achieve better results. Finally, policymakers can also use the recommendations of this study for the provision of computers to all students or at least give discounts to students buying computers so that they can easily access them.

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Appendices

Appendix A

The English Copy of The Survey

The Impacts of Home Computer Use on ELLs' Reading performance

Notice: This survey can be filled from students or parents

Please tick (✓) all those the student on

1- Which grade is the student in?

A. Grade 6 ()

B. Grade 7 ()

C. Grade 8 ()

2- Does the student have a home computer?

A. Yes ()

B. No ()

3- Does this student use the computer for a variety of purposes?

A. Never ()

B. Rarely ()

C. Sometimes ()

D. Often ()

4- How often does student use the computer for reading purposes?

A. Never ()

B. Rarely ()

C. Sometimes ()

D. Often ()

5- How many hours does the student use computer daily?

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A. Half an hour to one hour () B. Two to three hours () C. Four to five hours ()

6- A home computer is an effective resource to enhance reading ability.

A. Strongly agree () B. Agree () C. Disagree () D. Strongly disagree ()

7- How often does the student use computer for reading assignments?

A. Never () B. Rarely () C. Sometimes () D. Often ()

8- How often does the student read books outside the classroom setting?

A. Never () B. Rarely () C. Sometimes () D. Often ()

9- What was a student's score on the reading test?

A. 1-25 () B. 25-50 () C. 50-75 () D. 75-100 ()

10- What was a student's score on the reading test after Using computer?

A. Yes () B. No ()

Thanks!

Rasha Alsharif

Alsh1416@fredonia.edu

Appendix B

The Spanish Copy of The Survey

El Impacto del Uso de la Computadora en la Destreza de Leer**Una encuesta por Familias o Estudiantes**

Por favor marca (✓) las respuestas que aplican al estudiante.

1. ¿En cuál grado es el/la estudiante?
 - a. Grado 6 ()
 - B. Grado 7 ()
 - C. Grado 8 ()
2. ¿El/la estudiante tiene una computadora en la casa?
 - a. Si ()
 - b. No ()
3. ¿El/la estudiante usa la computadora por una variedad de actividades?
 - a. Nunca ()
 - b. Casi nunca ()
 - c. A veces ()
 - d. Frecuentemente ()
4. ¿Cuál es la frecuencia en que el/la estudiante usa la computadora para leer?
 - a. Nunca ()
 - b. Casi nunca ()
 - c. A veces ()
 - d. Frecuentemente ()
5. ¿Por cuantas horas diaria usa el/la estudiante la computadora?
 - a. Media hora hasta una hora ()
 - b. Dos hasta 3 horas ()
 - c. Cuatro o más horas ()
6. Una computadora en la casa es un recurso eficaz para mejorar la destreza de leer
 - a. Estoy totalmente de acuerdo ()
 - b. Estoy de acuerdo ()
 - b. No estoy de acuerdo ()
 - d. No estoy nada de acuerdo ()
7. ¿Con cuánta frecuencia usa el/la estudiante la computadora por tareas de leer?
 - a. Nunca ()
 - b. Casi nunca ()
 - c. A veces ()
 - d. Frecuentemente ()

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8. ¿Con cuánta frecuencia lee el/la estudiante libros fuera de la clase?

- a. Nunca () b. Casi nunca () c. A veces () d. Frecuentemente ()

9. ¿Qué nota tomó el alumno en la prueba de lectura antes de usar la computadora?

- a. 1-25 () b. 25-50 () c. 50-75 () d. 75-100 ()

10- ¿Cuál fue el puntaje de un estudiante en la prueba de lectura después de usar la computadora?

- A. Sí () B. No ()

¡Gracias!

Rasha Alsharif

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Appendix C

The English Copy of the Student Consent Form

Dear students: I am a graduate student in Teaching English for Speaker of Other Languages (TESOL) at SUNY Fredonia. In preparation for my final thesis project, I am gathering data on the impacts of home computer use on students' reading performance and the ways in which using computers at home, in turn, will affect their reading development. I would like to invite you to participate in a survey that will address questions on reading performance and resources that you use in your studying for reading test. While the survey sheet may be filled out on your own time at your convenience, I ask for them to be completed within three weeks of distribution. Your participation is strictly voluntary and you can withdraw from the project at any time. Additionally, no form of compensation will be available. Your confidentiality during the project will be ensured.

If you sign this paper, it means that you have read this and that you do want to be in the study. If you don't want to be in the study, don't sign this paper. Being in the study is up to you, and no one will be upset if you don't sign this paper or if you change your mind later.

Your signature: _____ Date _____

Your printed name: _____ Date _____

Signature of person obtaining consent: _____ Date _____

Printed name of person obtaining consent: _____ Date _____

Appendix D

The Spanish Copy of the Student Consent Form

Formulario de consentimiento del estudiante

Estimados estudiantes: Soy un estudiante de posgrado en Enseñanza de Inglés para Hablante de Otros Idiomas (TESOL) en SUNY Fredonia. En preparación para mi proyecto final de tesis, estoy recopilando datos sobre los impactos del uso de la computadora en el hogar en el rendimiento de lectura de los estudiantes y las formas en que el uso de computadoras en el hogar, a su vez, afectará su desarrollo de la lectura. Me gustaría invitarlo a participar en una encuesta que abordará preguntas sobre el rendimiento de la lectura y los recursos que utiliza en su prueba de estudio para la lectura. Si bien la hoja de la encuesta se puede completar en su propio horario según su conveniencia, solicito que se complete dentro de las tres semanas posteriores a la distribución. Su participación es estrictamente voluntaria y puede retirarse del proyecto en cualquier momento. Además, no habrá ninguna forma de compensación disponible. Se garantizará su confidencialidad durante el proyecto.

Si firma este documento, significa que ha leído esto y que desea participar en el estudio. Si no desea participar en el estudio, no firme este documento. Estar en el estudio depende de usted, y nadie se molestará si no firma este documento o si cambia de opinión más adelante.

Su firma: _____

Fecha: _____

Su nombre impreso: _____

Fecha: _____

Firma de la persona que obtiene el consentimiento:

Nombre de la persona que obtiene el consentimiento:

Appendix E

The English Copy of the Parental Assent Form

Protocol Title: what is the relationship between home computer use and the reading performance of ELLs?

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study:

to investigate the impacts of home computer use on ELLs' reading performance and the ways in which using computers at home, in turn, will affect their reading development.

What you will be asked to do in the study:

To respond to survey questions which require ticking (✓) all those that you are on.

Time Required:

Time required to complete the survey is individual to each participant. Survey sheets will be collected three weeks after distribution.

Compensation:

There is no compensation for participating in the study.

Confidentiality:

Your identity will be kept confidential to the extent provided by the law.

Voluntary participation:

Your participation in this study is completely voluntary. There is no penalty for not participating.

Right to withdraw from the study:

You have the right to withdraw from the study at any time without consequence. You do not have to answer any questions you do not want to answer.

Potential Benefits and Risks:

This investigation will add to the research and experiences of the impact of using home computer use and it's correlation to students' reading performance It is possible that the survey could serve as a means of measuring the impacts of home computer use on

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students' reading performance. Following this investigation, participants and their parents will be allowed to read the research and discover the findings if they choose to do so. Only survey answers relevant to the research question will be used in the final research paper. Comments made about other subjects will not be a part of the final paper.

Whom to contact if you have questions about the study:

Rasha Alsharif

Email: alsh1416@fredonia.edu

Whom to contact about your rights as a research participant in the study:

Dr. Judith Horowitz

Associate Provost for Graduate Studies, Sponsored Research and Faculty Development

Maytum Hall 805

Judith.horowitz@fredonia.edu

(716) 673-4708

**I have read the procedure outlined above. I voluntarily agree to participate
in this study and have received a copy of this description.**

Participant's signature

Date

Principal investigator's signatures

Date

Appendix F

The Spanish Copy of the Parental Assent Form

Formulario de Consentimiento de los Padres

Título Protocolo: ¿Cuál es la diferencia entre el uso de la computadora en el hogar, y el rendimiento de lectura de ELLs?

Por favor lea este documento de consentimiento cuidadosamente antes de tomar la decisión de participar en este estudio.

El propósito de la investigación del estudio:

para investigar el impacto que tiene el uso de la computadora en el hogar en el rendimiento de lectura de los ELLs, y las formas en que el uso de la computadora en el hogar afecta el desarrollo de la lectura.

Que se les pedirá que haga en el estudio:

A que responda a una encuesta donde requiere oprimir (V) a todos en la cual se encuentra.

Tiempo Requerido:

El tiempo requerido es individualizado para cada participante. Las hojas de encuesta serán recogidas tres semanas después de la distribución.

Compensación:

No hay compensación por participar en el estudio.

Confidencialidad:

Su identidad se mantendrá confidencial a mayor grado, por la ley.

Participación Voluntaria:

Su participación en este estudio es completamente voluntaria. No hay penalización por el no

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participar.

El derecho de salirse del estudio:

Sin consecuencia ninguna, tiene todo el derecho de salirse del estudio. No tiene que contestar preguntas que no quiera contestar.

Beneficios y Riesgos Potenciales:

Esta investigación le añadirá a las experiencias y a las investigaciones del impacto del uso de la computadora en el hogar, y su correlación al rendimiento en la lectura del estudiante. Es posible que la encuesta sirva como un método de medir el impacto del rendimiento de lectura por el uso de la computadora en el hogar. Luego de la investigación, los participantes y sus padres Podrán leer la investigación y descubrir ios encuentros. Las únicas respuestas pertinentes a las preguntas de la investigación serán usadas en el documento de investigación final. Comentarios hechos sobre otros sujetos no serán parte del documento de investigación final.

Con quien comunícate si tiene preguntas sobre el estudio:

Rasha Alsharif

Email: alsh1416@fredonia.edu

Con quien te comunicaras sobre tus derechos como participante del estudio:

Dr. Judith Horowitz,

Associate Provost for Graduate Studies, Sponsored Research and Faculty Development

Maytum Hall 805

Judith.horowitz@fredinia.edu

(716) 673-4708

He leído el contorno del procedimiento anterior. Estoy de acuerdo en participar en este estudio y ya recibí una cop de esta descripción.

Firma del Participante: _____ Fecha: _____

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Firma del Investigador Principal: _____ Fecha: _____