A Comparison of Elementary Student Curriculum Satisfaction to Performance

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Abstract

Elementary students need to learn keyboarding skills in order to keep up with expectations of teachers. The purposes of this study include: to explore if there is any relationship between student satisfaction with the curriculum and improvement in average words per minute (WPM), and between student improvement in WPM and their perception of whether they had improved or not. Two schools were used in this study: a lower elementary (K-2nd grades) and an upper elementary (3rd-5th grades). A keyboarding instruction program was used, and at the end of the school year two questions were asked: "Did you like the activities you did in computer lab?" and "Do you think you are better at keyboarding now?" Results indicate that the younger students tended to have a higher change in WPM when they reported that they did not enjoy the activities and vice versa for the older students. The results showed that in relation to the second question, the lower elementary students had no significant difference in improvement in WPM whether they reported "yes" or "no". The upper elementary school showed more improvement if they answered that they thought they had improved. The results give evidence that older elementary students are able to comprehend their improvement more than the others. This may influence their view of how much they like the curriculum; or it could be because they achieve greater improvement when they enjoy the curriculum. More research needs to be done to fully understand the relationship.

Introduction/Review of Literature

In an increasingly technological world, keyboarding is a valuable skill to learn. Not only is it required for emailing or navigating the Internet, but also schools are

increasing the percentage of online assignments, homework and computer-based tests. Students are expected to be able to type large amounts of text by the time they are in late middle school. It is no question that elementary students need to learn how to type correctly in order to keep up with the current expectations of middle and high school teachers. An age appropriate and motivating keyboarding program would be an efficient and consistent way to instruct elementary students and begin laying the foundation for this lifelong skill.

There is currently a need for effective, age appropriate keyboarding instruction that is presented in a way that motivates students. Incorporating technology into the classroom as a means of teaching these skills may generate interest and satisfaction from the process of learning. Studies have shown that university students are more engaged and interested in learning when there is technology effectively included in the class curriculum (Grant, 1998; Günüç & Kuzu, 2014). Specifically for keyboarding, teaching skills through computer-based instruction has been shown to be more effective than alternate approaches. A study that compared the results between a computer-based keyboarding program and classroom teacher-based instruction in a group of elementary students found that the average words per minute (WPM) after the lessons had been completed was significantly higher in the former group where the instruction originated from a computer program (Nichols, 1995). Learning skills that students know will be useful outside of the classroom has been shown to stimulate engagement and motivation (Günüç, 2014), so it is logical to speculate that elementary students participating in a computer-based keyboarding program will be more likely to be engaged because of their ability to use their skills with technology at home and in the community.

Student satisfaction is an important aspect of the effectiveness of a keyboarding program. Satisfaction indicates the quality of classroom activities and ability to promote learning (Ciobanu & Ostafam, 2014), so insight about keyboarding instruction may be gained by determining the satisfaction level of students. Research has shown that multiple factors affect satisfaction. According to Grayson, the quality of instruction is a determinant of student satisfaction, but does not guarantee higher performance (2004). Verkuyten and Thijs' study states that academic achievement and success prompts higher satisfaction levels (2002). Student satisfaction levels need to be assessed in order to gain insight on areas of improvement in the quality and difficulty level of the curriculum for each grade level.

There is a gap in the current research studies on student satisfaction for primary and secondary education. Most research that has been conducted on student satisfaction includes only university students. In addition, a majority of these studies focus on satisfaction with aspects of their education other than the curriculum itself; such as community, opportunities for recreation, university facilities, and other components that are less applicable to younger students. More research needs to be done on elementary school students and the effects of satisfaction with the content and style of their classroom learning. There are two focuses that will be examined during this study. One purpose of this study is to explore if there is any relationship between student satisfaction with an activity-based keyboarding instructional program and the improvement in keyboarding skill as measured by words per minute (WPM). Do the students' ratings of how satisfied they were with the keyboarding program have any relationship with their performance on keyboarding outcome measures? The second purpose is to explore if

there is any relationship between student improvement in average words per minute

(WPM) and their perception of whether they had improved or not. How accurate are the

students' perceptions of improvement? These findings will help researchers determine if

a student's perception of the program impacts their success with its use.

Methodology

Participants

The participants for this study were elementary students in a rural city in the

south-eastern United States. Two different schools were used in this study: a lower

elementary (grades K-2) and an upper elementary (grades 3-5) school.

Instruments

Typing Test Pro. The keyboarding skills of each student were assessed by researchers

before and after participating in the Keyboarding Without Tears (KWT) program.

Keyboarding skills were collected through Typing Test Pro (2016) as net words per

minute (WPM). Net WPM is defined as the number of words typed (number of letters

divided by 5) minus the errors, divided by number of minutes. For the assessment, the

students were copying a passage from a first grade reading level book for 1 minute. The

same passage was keyed at pretesting and post test but approximately 8 months passed

between assessments.

Post-test data form. The end of year data was recorded on a survey data form that the

student completed on the day that the Typing Test Pro outcomes were measured. This

form included four yes/no questions, two of which are being considered in this study.

These questions include: (1) Did you like the activities you did in computer lab and (2)

Do you think you are better at keyboarding now? These two questions address student satisfaction and student perception of performance respectively.

Intervention

The KWT program was used to instruct the students during their computer class once a week throughout the school year. This program teaches pre-keyboarding and keyboarding activities through games that progress in difficulty over the course of the school year and depending on the grade level of the student ("Keyboarding Without Tears Program," 2017). In addition to teaching keyboarding skills, KWT also teaches students basic computer skills such as how to drag and drop, skills for computer-based testing, and digital citizenship.

The instruction varies between the grade levels. Kindergarten instruction focuses on introducing physical aspects of the computer and correct beginnings habits and techniques. The instruction also supports the development of reading and handwriting skills. For first grade instruction, the focus is on using games to improve finger dexterity and building the association between fingers and letters while keyboarding. During the school year, first graders will be given the opportunity to move from keying letters and words to short sentences. The instruction for second graders focuses on building muscle memory and speeding up the pace of learning skills. The third grade instruction focuses on accuracy and fluency. Since they have already learned basic keyboarding techniques and habits, they are challenged with thematic activities to practice building upon these skills. For fourth grade instruction, the focus is on improving muscle memory, accuracy, and speed. The instruction for this grade also begins to include practice with formatting. The fifth grade instruction continues to give students the opportunity to practice

improving accuracy and speed in order to prepare them for succeeding in school in the future. For all of the grade levels, KWT uses a spot check to test periodically for speed and accuracy of specific keyboarding skills (Olsen & Knapton, 2015).

Procedure

Parents of the students were notified and were given a chance for their child to opt-out of participating in the study. At the beginning of the year, the students' keyboarding skills were assessed with Typing Test Pro. The KWT program was used as a way to assess and facilitate improvement in the students' keyboarding abilities throughout the school year. The students started using the program in September 2016 and continued through May 2017. During post-testing in May 2017, keyboarding skills were re-assessed and satisfaction data on the Post-Test Data Form was collected. After all of the forms were collected, they were stored in a locked office. The data was entered into SPSS on a password-protected computer. Any student who did not use the KWT program throughout the year (as evidenced by completing both the pre-test and post-test) was excluded from the analysis.

Data Analysis

The data collected through the Post-Test Data Form were analyzed through SPSS. Independent t-tests were completed comparing the net WPM score for those who answered Yes on one question to the net WPM score for those who answered No on the same question to see if there was a statistically significant difference between the groups. This was completed for both questions for each school individually.

Results

There were 427 students in the lower elementary school included in this study: 145 kindergarten students, 143 first grade students, and 139 second grade students. Of these students, 220 were male and 207 were female. Overall, at the lower school 77.5% of these students were Caucasian, 12.9% were African American, and 9.6% reported another race. In the upper elementary school, there were 465 students that participated in this study: 145 third grade students, 156 fourth grade students, and 164 fifth grade students. Of these students, 232 were male and 233 were female. Overall, the upper school included 79.4% were Caucasian students, 14.2% African American students, and 6.5% were another race.

The results of the question "Did you like the activities you did in computer lab?" are shown in Figure 1. The first graph displays the average change in words per minute compared to whether they answered yes or no. Both the lower elementary school and the upper elementary school had statistically significant results (.032 and .023 significance, respectively), but with the opposite result. The older students who answered yes had a greater improvement in WPM than those who answered no. The younger students who answered no had a greater improvement in WPM than those who answered yes. The second graph in Figure 1 shows the number of students who responded with each answer.

The results of the question "Do you think you are better at keyboarding now?" are displayed in Figure 2. The first graph in this figure shows the accuracy of their perception of improvement. Neither the results of the lower elementary school or upper elementary school are significant. However, upper elementary students who responded that they think they have improved averaged almost 1 word per minute higher improvement by the end of the year compared to those who responded no. The second graph reports that a

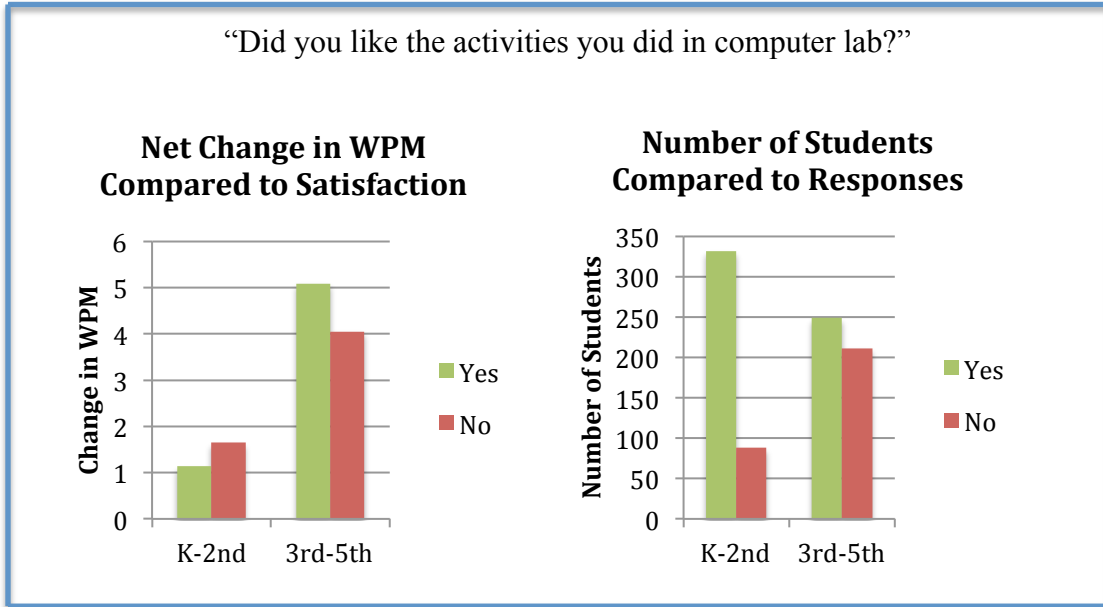large majority of the students in both schools did respond that they thought they had improved.

Figure 1

	N	M (SD)	SEM	Significance (2 tailed)
Lower Elementary, "Yes"	332	1.14 (1.86)	.10	.032
Lower Elementary, "No"	88	1.65 (2.31)	.25	
Upper Elementary, "Yes	249	5.09 (4.78)	.30	.023
Upper Elementary, "No"	211	4.05 (4.91)	.34	

Table 1
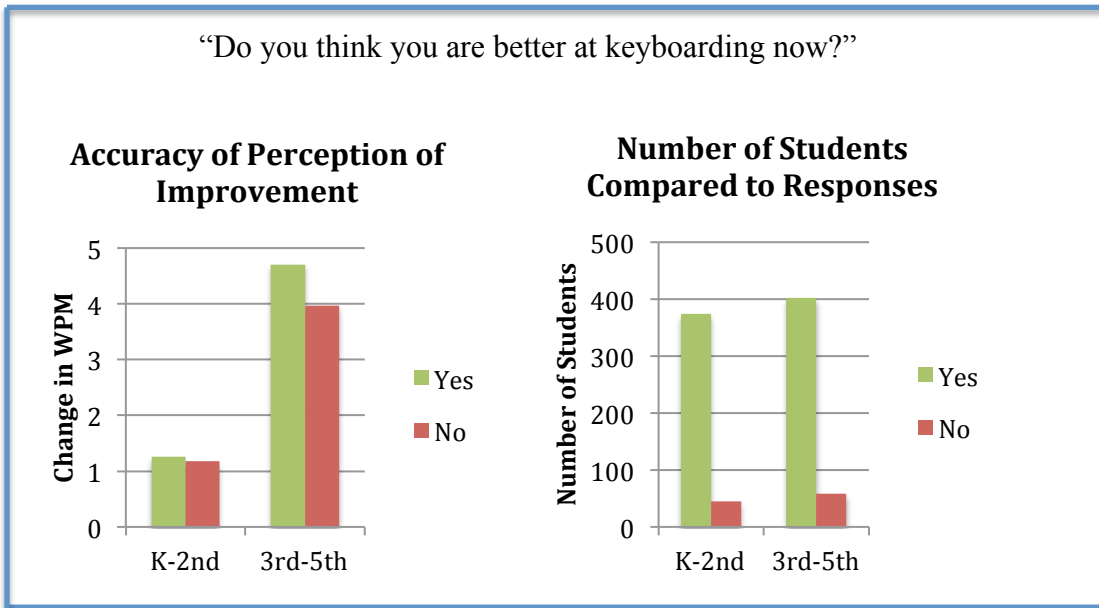
Figure 2

	N	M (SD)	SEM	Significance (2 tailed)
Lower Elementary, "Yes"	374	1.25 (1.97)	.10	.807

Lower Elementary, "No"	45	1.18 (2.01)	.30	
Upper Elementary, "Yes	402	4.71 (4.85)	.24	.278
Upper Elementary, "No"	58	3.97 (4.91)	.64	

Table 2

Discussion

The results from the lower elementary school across both questions were not consistent with the upper elementary school. Because of their age, there is a possibility these younger students might not have been able to comprehend personal opinions about the program or improvement while they were filling out the survey. In addition, they might not have been able to remember their perception for the entire program and had answered the question based on their most recent impression.

The students from the upper elementary school had significant results for the question about satisfaction but not the question about perceived improvement. There was a relationship between the student's improvement and enjoyment of the keyboarding activities. It is possible that when the students enjoyed the activities, they improved more than the students who did not. Another possibility is that when the students started improving, they began to enjoy the activities. This might have encouraged the students to become motivated to keep improving. Even though they were not significant, the older elementary students had more differentiated results for the second question than the younger students. Both the group of students who responded yes and those who responded no had improved. This implies that the older students were able to comprehend

their improvement more accurately than the younger students, but not all of them were completely aware of their improvement over the course of the school year.

The younger students were only able to improve around 1 WPM on average over the course of the school year, but older students improved around 4-5 WPM on average. This data can be used to further direct the content and focus of keyboarding instruction to make it more appropriate for the grade of the student.

More research needs to be conducted in order to further determine if satisfaction leads to improvement or if improvement leads to satisfaction and motivation. Determining the difference will allow designers of keyboarding programs to know whether they should focus on designing the program to be more enjoyable for the students, or having the program revolve around progress and improving words per minute.

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