

Using Technology Clubs as an After-school Enrichment Program: An Action Research Study

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Abstract: After-school programs are becoming part of the instructional programs in schools across America. Programs that focus on enrichment instead of remediation are impacting the traditional programs with positive results. This action research project examined the learning experiences of 8 third through fifth grade elementary students in a media-rich after-school program designed to increase reading skills through enrichment instead of remediation. The use of technology to enhance and accelerate the performance of lower achieving students provided an increase of interest in technology, an increase in perceptions of after-school programs, an increase in reading skills, and an excitement to participate and remain in the program. Students used technology to create stories, take photographs, learn reading skills, and review classroom instruction.

After-school programs and their impact on student achievement became a topic of debates in schools, colleges, government, and private agencies throughout the past several years. The public called for programs that created safe environments, addressed student enrichment, accelerated student learning, and fostered positive adult interaction beyond the typical school day were recorded throughout the nation (Dryfoos, 1999; Miller, 2001).

After-school programs have been implemented in many school systems for a variety of reasons. Some offer instruction in remediation, homework assistance, and tutoring (Hock, Schumaker, & Deshler, 2001). According to the National Center for Education Statistics (U.S. Department of Education, 2001), many schools offer an alternative for working parents to provide childcare so that children are not left unattended at home. Sherri Lauver of the Harvard Family Research Project (2004) reported that schools offering programs designed to attend to the artistic and musical interests of students attract and keep more students than programs that don't include the expressive elements in their curriculum. For many school systems in Georgia, such as my own, an extended day, or after-school program, has provided an opportunity beyond the typical school day setting to instruct and meet the needs of students who continually fall below the acceptable level for required academic subjects and on standardized tests.

After reviewing the Adequate Yearly Progress (AYP) Report for our school our faculty decided to focus on reading as an area in need of instructional change or enrichment during the 2006/2007 school year. Changes were implemented in various programs both in and outside of the traditional classroom to help address the need. According to the assistant principal in 2005/2006, the previous remediation offered for reading, which was done through an after-school program, did not produce the effects for which the school system had hoped. We later learned that ours was not the only ineffective after-school reading remediation program. School

systems and private agencies across the nation reported no significant change in academic achievement through after-school remediation programs (Harvard Family Research Project, 2004; U.S. Department of Education, 2002). However, significant improvements in academics were seen when the program focused on topics of interest to the students, such as dance, music, and technology (Miller, 2001). The implication follows that if students are to achieve academic gains through extended day instruction, the after-school program should follow the example of successful enrichment programs and clubs and not after-school remediation programs.

In response to the school's lack of progress with the program, the administration encouraged the faculty through our whole faculty group (Murphy & Lick, 2001) studies to research ways that students could be moved from failing to passing and from passing to exceeding. Remediation was obviously not the answer, so perhaps enrichment was. Enrichment, as defined by the Merriam-Webster Online Dictionary, means to "make rich or richer especially by the addition or increase of some desirable quality, attribute, or ingredient" (Merriam-Webster, 2005, first section).

Studies conducted by Castillo and Winchester (2001), Lillian Coltin (1999), Joy Dryfoos (1999), and Zeigler (2004) described positive results when students were provided enrichment opportunities that met the needs of the whole child. After-school opportunities that provided activities such as dance, music, fitness, and technology skills were reported to encourage students to remain in school and to take an active role in their learning, which in turn resulted in increased academic scores and achievement levels for the participating students. Students began to view school as a pleasurable place instead of a source of frustration.

St. Marys Elementary School has been a past recipient of the National Blue Ribbon School award and a Georgia School of Excellence. Though some of our students exhibit difficulty in standardized testing, we have continued to rank in the top level of state and county testing with scores of 90% or above. St. Marys houses grades pre-k through five, two handicapped pre-school programs, and is the county center for Emotional Behavioral Disorders (EBD). Though scores have been high, a large number of our students scored in the *meets level* category and few performed in the *exceeds level* category. The same students involved in the after-school programs continued to perform in the *does not meet level* category or were barely crossing to the next level (Governor's Office of Student Achievement, 2006).

By developing an after-school program that was designed after the characteristics of programs the literature pointed to as successful, I hoped to make a difference in the lives and learning of the students who participated. I worked with teachers at my school to design an after-school technology club that would meet the needs of low achievers and motivate them to perform at a higher level in their academics. Little research was available on after-school programs that utilized computer technology as a component for student enrichment and improvement of reading skills, which was the goal at St. Marys. Research studies like those conducted through the North Central Regional Educational Lab indicated that studies on after-school programs were still forthcoming and may add to our knowledge of what it takes to improve student achievement (Schuch, 2003). Consequently, I proposed an action research project on enrichment through after-school programs to add documentation on student experiences, perceptions, and learning in a program that used computer-based activities to motivate students to share with others what they were learning about reading strategies. The goal of this study was to examine the learning experiences over a 4-week period of third through fifth grade elementary students in a media-rich after-school program designed to increase reading skills through enrichment instead of remediation. The major areas of interest were the changes

that may occur in the area of student performance, specifically performance in the areas of reading and technology, and the area of student perceptions, specifically perceptions of reading, of learning in an after-school program, and of technology.

Methods

Pilot Project

With the technology club planned, which was called Terrific Techies, and the decision to use Myskillstutor software as the main reading instructional and evaluation tool, a pilot group was selected to test the technology components of the plan. The pilot group of 14 students was selected in September 2006 and began meeting in October 2006 in an after-school setting. The students in the pilot group were similar to the students in the research group, which was selected spring 2007, in that the same CRCT score criteria was used to select them. The pilot provided the after-school program planners an opportunity to gain familiarity and assess functionality of the Myskillstutor software. Teachers involved in the after-school program held meetings of the technology club in their own classrooms on most days and occasionally utilized the technology lab as needed. Upon completion of the pilot project it was agreed to launch the after-school program in February 2007.

Participants

Students selected for the technology club research group were invited based on reading scores on the CRCT. Students must have passed the CRCT with a score of 300 to 329 out of 400 or exhibited problems in achievement based on individual classroom testing. Students invited to participate were not students of the teacher conducting the research. Fifteen invitations were sent to students in grades 3 through 5. Eleven students accepted the invitation and four declined. Students accepting the invitation consisted of 3 third graders, all male, one of which was African American, 2 White students, one of which was EBD, and 1 regular education student. Five fourth graders accepted, one of which was an African American male, the other 4 were White females. Three fifth graders accepted: 1 African American male, 1 White female, and 1 White male. The third grade EBD student was taken out of the program by school administration due to extreme behavior problems in the classroom prior to the start of the program. Ten students began the program. One student opted out of the program after the first session. One student moved the week before the last session, making the actual research participant group include 8 students. Students had the opportunity to decline or accept the invitation and could opt out of the program at any time. Students were required to secure permission from their parents. Students were also provided a snack each time they met. Students in this project were familiar with reading skill terms associated with main idea, cause and effect, and inferring information within a reading passage. Most students had not used the program Myskillstutor in an after-school program or to a large degree within their classroom.

Intervention

The technology club met 2 afternoons a week beginning the first week of February and continued for 4 weeks. Each session lasted approximately 90 minutes and occurred immediately after-school. Students invited to this club worked with various technologies available in

classrooms within the school setting. Students used programs that relied on reading skills such as BrainPop and Myskillstutor.com. Funding for this program was provided to pay teachers and provide daily snacks. The program was funded through Title I funds based on the AYP Report. In order to be funded the program had to include some component of reading instruction.

Students practiced reading skills directly related to cause and effect, main idea, and inference pertinent to their grade levels. Myskillstutor.com housed student practice activities for the reading skills and teachers provided direct instruction related to each skill. This program was the basis for tests administered prior to the intervention and at the conclusion of the intervention.

Students learned to use a Classroom Performance System (CPS) to answer questions created by the instructor on specific reading skills. Reports generated through the software allowed me to track responses if needed. Students responded to questions on inference and main idea after hearing a book read. The CPS units were also used following an activity on the Website BrainPop.com. Students viewed a movie on main idea and answered the quiz generated by the Website that I had downloaded into the CPS database. Using the CPS units for discussion and quiz answers gave the students and me immediate feedback on answers and reported the number of responses to each answer.

Students also learned how to create PowerPoint slides to be used in a presentation. Students created slides with animation that provided information on how to find the main idea in a reading passage and how to infer information the author may not have specifically provided within the passage. Students shared information on main idea through their slide creations. The students in the club used the PowerPoint informative slides to share reading tips with other students on the Morning News Show, a televised program shown each morning and created by the gifted students at St. Marys Elementary.

Students also worked with digital cameras. The students created stories in Microsoft (MS)Word based on the pictures taken with the cameras. The use of digital pictures, MS Word-based-stories, and PowerPoint slides was intended to motivate students to unknowingly blend their newly gained knowledge related to reading skills with their newly gained computer skills and provide review of the reading strategy in a way that may help them remember what they were learning about reading.

Instruments Used to Answer Research Questions

Student thoughts on technology, reading, and after-school programs were determined by the use of a survey that was administered before they started the after-school program and after they had been in the program for 4 weeks. Various sections of the instrument were used to answer the following research questions: (a) What changes occur in student perceptions of reading in a 4 week after-school technology-enhanced program? (b) What changes occur in student perceptions of learning in an after-school program? and (c) What changes occur in student perceptions of technology after participation in the program? During the intervention, reading skills were assessed by using reports and scores generated from the Myskillstutor program. Pretests on Myskillstutor.com gave a baseline of reading skills based on the student's grade level: level A was administered to all third grade students, level B was administered to the fourth grade students, and fifth grade students completed level C. Each level tested the same components of the reading program, main idea, inference, and cause and effect. A posttest in the same program provided insight into any gains made at the conclusion of the intervention. These

data were used to answer the question, “What changes occurred in student reading performance over the course of the after-school program?”

Additional documentation of student reading skills was generated through the Classroom Performance System reports. Students used the CPS units to answer questions after hearing a book read. Immediate feedback was provided through the software for correct and incorrect answers, which allowed both the students and the teacher to see results and discuss them as needed.

Student products that provided artifacts that demonstrated development of technology skills and the ability to explain the reading strategies that they were learning included MS Word documents, the use of digital photos, and a PowerPoint slide. Digital photos were added to the Word product to illustrate stories and indicate the main idea of the story. Students also produced a PowerPoint slide that explained to another student the characteristics of a main idea and how to make inferences from sections of a story.

Data from formal observations completed once a week was combined with researcher notes on informal observations and student interviews to answer the question, “What was the learning experience like for students in the after-school Technology Techies Club. Interviews with 6 of the 8 students were conducted at the conclusion of the program to determine additional information on student learning experiences.

Procedures and Results

Survey results

A pre-program survey and post-program survey were administered to determine student beliefs and perceptions related to technology, reading, and after-school programs. A pre-survey, which was created by the researcher and administered by one of the teachers who helped with the after-school club, was given the first day Terrific Techies met to determine the students’ perceptions of their abilities and confidence with computer technology. The same survey was also administered during the ninth after-school meeting. Eight students completed both the pre- and post-program survey.

Beliefs and Perceptions of Technology. Questions 1-4, 8, 9, and 14 dealt with technology and the students’ perceptions of their ability to use various computer programs (see Table 1). In regards to the question of students’ enjoyment of technology, none of the students indicated that they never enjoyed it, and the number of students who claimed to enjoy it *all* or *most* of the time doubled (from 3 to 6) between the pre-intervention survey and the post-survey. Students did not indicate much change in their ability to move between programs in a computer, and one student actually realized during the intervention that he was not as capable with this skill as he thought he was on his pre-intervention assessment. There was a shift in students’ perception of working with the Smart Board from the pre-survey to the post-survey. Prior to the after-school club meetings three students reported never enjoying the work with the Smart Board—all three expressed some enjoyment by the end of the intervention. Though the majority of students reported little or no enjoyment of PowerPoint programs prior to intervention, the post-intervention survey showed six of the eight students indicated they now enjoyed PowerPoint *most* or *all* of the time. All eight students reported an enjoyment of digital cameras before and after the intervention. Though only three students believed they could share information about

computer programs with another student, two students moved from the category of *none* of the time to *some* of the time after intervention. Students were again divided on their perceptions of technology use in relation to their class work prior to intervention. Post-intervention surveys revealed that students perceived technology as a tool to help them in their school work, at least *some* of the time. On the pre-survey free response question that asked students what they would like to learn in technology club, all of the students responded they wanted to know more about various technology tools. In the post-intervention surveys, all 8 students responded they had gained knowledge of the technology tools used in the intervention.

Table 1

Changes in Student Perceptions of Technology (N = 8)

Survey Statement		All of the time	Most of the time	Some of the time	None of the time
1. I enjoy technology.	Pre:	1	3	4	0
	Post:	2	6	0	0
2. When I am using a computer I know how to move from one program to another.	Pre:	4	1	2	1
	Post:	3	3	1	1
3. I enjoy working on the Smart Board.	Pre:	4	0	1	3
	Post:	5	2	1	0
4. I enjoy working with PowerPoint programs.	Pre:	3	0	4	1
	Post:	3	3	2	0
8. I enjoy using a digital camera.	Pre:	6	1	1	0
	Post:	6	2	0	0
9. I am able to share information about the computer programs with another student.	Pre:	3	0	3	2
	Post:	1	2	5	0
14. I believe technology can help me in my school work.	Pre:	2	2	2	2
	Post:	2	3	3	0

Note: The values represent number of students who chose a particular response.

Beliefs and Perceptions of Reading. Questions 6, 7, and 10-13 asked students to describe their reading ability and perceptions of achievement in school (see Table 2). When asked to indicate how often the student thought he/she tried her best in school, all students chose either *all* or *most of the time* on both the pre- and post-intervention surveys. The results, however, related to enjoying reading because they could look for important clues were almost opposite to the positive perceptions about effort. Six out of eight students indicated they did not enjoy reading or they experienced difficulty when looking for important clues when reading. In addition, half of the students revealed before the intervention that they had difficulty when reading grade level texts and only *sometimes* understood what they read. Post-intervention surveys indicated that five of the eight students believed they could understand what they read by looking for clues, an increase of three students, and all but two students stated they could read their grade level texts at the completion of the project. All eight students claimed they could understand what they read *all* or *most* of the time after the intervention. Post intervention results also revealed a more positive response to the statement on classroom participation: with six students indicating that after participating in the Terrific Techies club they participated *all* the time when their teacher called on them for answers. On the pre-survey free response question regarding what students wanted to learn concerning reading, five of the students wanted to learn how to read better, 1 student wanted to learn how to pronounce words better, and two students didn't believe they needed to learn anything; they already knew all they needed to know. Eight students reported a belief that their reading skills had increased during the intervention.

Table 2

Changes in Students' Perceptions of Classroom Participation and Reading (N = 8)

Survey Statement		All of the time	Most of the time	Some of the time	None of the time
6. When I come to school, I try my best in all subjects.	Pre:	5	3	0	0
	Post:	7	1	0	0
7. In school, I enjoy reading because I know how to look for important clues.	Pre:	0	2	3	3
	Post:	1	4	2	1
10. I am able to complete assignments in reading.	Pre:	3	2	3	0
	Post:	3	3	2	0
11. I participate in class when my teacher calls on me for answers.	Pre:	2	4	2	0
	Post:	6	0	2	0
12. I am able to read my grade level textbooks.	Pre:	1	3	2	2
	Post:	4	2	0	2
13. I understand what I read.	Pre:	1	3	3	1
	Post:	3	5	0	0

Beliefs and Perceptions of After-school programs. Question 5 asked students to respond to their view of participation in an after-school program (see Table 3). On the pre-survey, the group was equally divided between enjoying after-school programs *all* of the time and either *none* or *some* of the time. After the intervention, all of the students reported they liked participating in the after-school program *all* or *most* of the time. On the free response question on the pre-survey regarding students' reasons for participating, six students responded they thought it would be fun, one student said it was because his mom made him, and one student replied that her friends told her it would be fun. On the post-survey free response, all eight students replied that they would come to a technology club after-school again if they were invited.

Table 3

Changes in Students' Perceptions of After-school Programs (N = 8)

Survey Statement	All of the time	Most of the time	Some of the time	None of the time
5. I like participating in after-school programs.	Pre: 4 Post: 4	0 4	3 0	1 0
15. I believe the after-school program will help me understand technology used in my classroom.	Pre: 3 Post: 5	2 2	3 1	0 0

Myskillstutor Reports

A pretest in the Myskillstutor program provided a baseline for reading abilities and skill levels of students. Students were tested through three different levels according to their grade in school. A posttest in the same program provided information on any gains made through the program after direct teacher instruction was provided on main idea and inferences. Each test generated approximately 12 questions on main idea, inferences, cause and effect, and sequencing. Though main idea and inferences were the instructional emphasis, cause and effects as well as sequencing were addressed throughout the program. An average gain of 13 points is indicated by the data; however, three students scores went down, three went up, and one stayed the same. Consequently, a more interesting way of viewing the data is to note that two of the three students whose scores went up increased by 50 points or more and two of the three whose scores went down only did so by 8 points (see Table 4).

Students also completed two or more activity pages on main idea in the Myskillstutor program. The program reported an average score of 52.12 for the students as a group with a standard deviation of 18.82.

Table 4

Change in Student Reading Performance Organized by Responses to the Statement, “I understand what I read.”

Student Response	Test Level	Pre-Intervention Test Scores	Post Intervention Test Scores
All of the time	A	33	25
Most of the time	C	67	X
Most of the time	B	58	50
Most of the time	A	17	67
Some of the time	B	67	50
Some of the time	B	42	42
Some of the time	B	17	75
None of the time	C	50	67

Note. An X indicates that the student was absent or did not complete the program. The test score values represent scores out of a possible 100 points on the test.

Student Products

Another indicator of knowledge gained was provided through stories the students created using Word and digital cameras. Eight students were engaged in the product, though only six students completed their written assignment. Of the six students who completed a story and added their pictures, four students were able to generate a story that depicted their main idea and indicated details, fluency, and sequential order. Two students were able to stay with the topic, but their stories did not produce details indicating a complete understanding of main idea. The two students who did not complete the assignment had a general beginning to their story but were unable to generate the supporting details.

Students created individual slides to be inserted in a PowerPoint presentation. All of the eight students present were able to complete a slide that defined or described the main idea. Of the eight students, six were able to complete a slide that described how the main idea is found in a story, though two students needed prompting to remind them of important details. Two students could not complete the assignment.

Observations

Observations made on student navigation and completion of the tasks assigned to students in the Myskillstutor program revealed that students had a difficult time on the pretest due to lack of instruction on the components of the program, inability to read the higher level selections, or technical problems-- the inability to hear on the headphones, difficulty with screen enlargement, or password connections that were not operable.

As the intervention progressed observations during times when using the computer program Myskillstutor reflected less teacher intervention on program components and little to no questions on technical issues. Remembering passwords continued to be a problem, so the teacher made index cards with passwords and student numbers for each student. The Myskillstutor Website kept a record of student activities so students knew where to begin when they accessed the program.

During classroom direct teacher instruction, observations noted the need for step-by-step instruction on technology, specifically on the CPS units and PowerPoint. Students grasped instruction better when it was shown to them one step at a time than if a series of instructions was provided. One student wanted everything read to him and argued about not understanding the directions. During the PowerPoint instruction, all but 1 student needed help in saving the material. Several students needed help with animation once they had typed their slide. Since all instruction on the program was completed at the beginning of the class, students forgot how to insert animation by the time they reached that point. Only 2 students needed help at the onset of their slide creation in finding the program. Others were able to access the program, find a slide design, and type the information before asking for help. However, 2 students were unable to complete the required assignment. A check sheet was used to assess the following on the PowerPoint slide: animation included, typed complete sentences, defined or identified the main idea, and saved document to a pre-determined folder.

The observation of student use with digital cameras indicated that all but 3 students had used a digital camera before and knew how to operate it. When pictures were downloaded into a folder for access, all of the students but 2 needed help in locating the folder and 4 students were unable to download the picture without help from the teacher. All but 2 students understood the instruction on how to print and were able to complete the assignment. Two students needed help with ideas to get started. One of those continued on their own once the teacher provided several examples. The other student continued to ask for help and needed prodding in actually getting something on the page. A check sheet was used to monitor student navigation, behavior, completion of the document that included main idea, and the ability to print the completed page. Two students never completed their assignment.

Interviews

On the last day of the program, six students were interviewed regarding their perceptions of the program, of the skills they developed through the instruction, and of their ability to use the technologies introduced in Terrific Techies. Students were also asked about what it was like to learn with the Myskillstutor program. All six students who were interviewed indicated they enjoyed the club and would participate again if invited. They also all believed they had gained skills needed to help in their regular classrooms and personal reading assignments, especially in

the area of main idea. One student commented, “I know to look for the main idea, and this helps me understand what I am reading in my class.”

Though most students indicated an understanding of the CPS program, only a few believed they could actually instruct someone else on the program, but they all stated they enjoyed using the program. None of the students could identify four skills of reading, though all stated that searching or identifying the main idea was a reading skill they had learned. One student stated, “I learned about how to use more words in my writing.”

All eight of the students interviewed believed they learned a lot about technology through the after-school program. One student said she knew “absolutely nothing” when she came to the program. All of the others interviewed stated they could get on the computer, find the Internet, and play games.

When asked what they liked and disliked about the program, all stated that they liked everything, most stating “the picture taking” as the favorite thing they did. Two students said they did not like taking the test in Myskillstutor, and the other four students stated they found nothing that they did not like about the program.

Conclusions and Implications

The purpose of this study was to examine the learning experiences of third through fifth grade elementary students in an after-school program designed to increase reading skills by enriching students’ lives with the infusion of computer-based technology as a means to retell the lessons they were learning about reading strategies.

The after-school technology club produced positive affects in student interest and ability. Using the question of what changes occurred in student perceptions of reading in a 4 week after-school technology-enhanced program to guide the research, I found that six of the eight students believed they had some problems with reading upon entering the program: after the program only three indicated this. Students were hesitant to read aloud the first week of the program, but began volunteering to read aloud as the program progressed. The Myskillstutor program provided an icon that allowed students to have some of the program read to them. Students used this tool in the beginning to advance through the program faster. However, once they realized that the tool could only be used in the initial reading selection, they were not as apt to rely on the web reader, and tried reading more of the selections themselves.

I also wanted to determine what changes occurred in the students’ perception of learning in the after-school program. Through post-intervention surveys and interviews, all of the students indicated that they would come again if invited. Similar results were found in the rural Texas school district of Pharr-San Juan-Alamo where teachers and administrators incorporated a desirable ingredient to enrich their after-school program by focusing on student interests instead of remedial programs (Castillo & Winchester). I also found some of the same results in the Terrific Techie program. When students were challenged to create artifacts using technology that included digital cameras, CPS units, and the Smart Board, students remained focused and active. Students became competitive as they used the CPS units, each one trying to punch in an answer faster than their peer. Student performance through correct responses on the various reading programs used within the CPS lessons indicated that students could explain the main idea in relation to a story. Students also began looking for the main idea first in other reading selections presented to them. When the instructor or I would ask questions, the further into the program we went, students responded by raising their hands to answer as opposed to the instructor or myself

having to call on students for answers as we did the first week. When students created products using MSWord and digital cameras, one student was so excited when his project was printed; he asked if he could take it right then to show his teacher. He told me, "This is the best story I ever made!" The instant gratification of a printed product allowed the student to view a completed product, provided immediate feedback, and allowed the student a chance to excel in an area he may have experienced failure in before. Each student interviewed upon completion of the program indicated they believed they had learned something in the after-school program.

As I sought to research changes in students' perception of technology in the after-school program, I was interested to find that very few of their teachers were using technology in their individual classrooms. Students perceived technology to include the computer lab and "games" they could access in the classroom. Only 2 of the students indicated that their teachers used technology other than computers in the classroom. When introduced to the CPS units, only 1 student had used it before, and the other 5 students had never seen it. Since this program had been introduced to the teachers in my school through a mini workshop setting, I was surprised that none of the teachers had used it within their classroom. When I asked the media specialist if the units were ever checked out, she replied, "Only you and the other two gifted teachers use them. No one else has even asked about them." Yet students asked each week after the introduction of the units if we would be using them today. These tools intrigued and excited the students. One student stated, "I wish my teacher would get these in my room." Students also inquired about the digital camera and the Smart Board. These types of responses revealed a need for additional technology instruction not only in the after-school programs, but in the daily individual classroom settings.

Post interviews revealed that all of the students perceived the technology club was a help in their individual studies. Even though reading scores did not improve as much as one might have hoped, possibly due to the time constraints and the fact that students were unable to complete all of the components of the program, the fact that students believed they could perform better after the intervention adds to their chances for success in the future and strengthens their motivation to do better in school prior to their performance before they participated in the intervention. Teachers not associated with the after-school program expressed amazement in the student projects that were produced stating that it was some of these students' best work. Programs such as Microsoft Word®, in combination with digital pictures, CPS units, and Smart Board® interactions, provided students with an effective means of production beyond the paper and pencil to which they were most accustomed. Two of the lower achieving students perceived their after-school performance to be superior to the work they produced in their classroom. It is my hope that students who see themselves as successful in school will continue to develop an interest in their personal studies and achievement.

Student perceptions of technology experiences and their abilities in the areas of technology were moderate with most students reporting some experience prior to the intervention. The post-survey and interviews indicated that students had gained knowledge in the operations of computer programs as well as the additional technology components. Though few could explain the CPS operations to another student, most believed they could operate Word programs and digital cameras with greater ease. Findings indicate that student use was contingent on explanations of the technology operations and applied use of the programs. Students placed at a computer with no explanation, as in the pretest setting, were frustrated and confused with the navigational process and had difficulty reading the higher level reading selections.

The findings of this research suggest that technology can be a useful tool when combined with direct teacher instruction in an after-school program. Students believe they are excelling in their academic endeavors when using technology components to complete their studies. Several teachers have told me that since their students had been participating in the after-school program they have observed positive changes in the students' classroom behaviors. Four students indicated in the interview that they were using main idea skills to help with other subject areas. One student commented, "I didn't know how to find the main idea, the subject. I found out that sometimes it is not in the front of the story, sometimes it is in the back. This has helped me in my other classes." If students can continue to carry this information over to other subjects, the indications are that student achievement will continue to improve.

I worked in the after-school remediation program for several years. Student participation most of the time was not because the student was interested, but because the parent had forced them to come due to low academic grades. Students in the after-school computer program seemed to enjoy coming each day. Several would stop me in the hallway and ask if "techies" were meeting today. Student participation remained positive throughout the intervention. Students rarely had to be prodded and pushed to complete activities and projects. Students viewed their time in the program as fun and interesting. One parent stopped me in the hallway and said, "My daughter just loves coming to the after-school club. She can't wait for Wednesday to come." This research, though conducted in a small window of time, indicates a need for an after-school program that is rich in technology and provides an enrichment component to accelerate students, especially those that are lower achievers. As students perceive themselves as successful, their perspective on academics allows for positive changes within their individual achievements. My colleague and I asked students how many had computers at home and used them on a regular basis. Students revealed through a show of hands that over half of them used computers and other technology tools only at school.

Limitations

The short time span of 4 weeks limited the activities that could be accomplished, the data that could be gathered, and the results that can be generated. More time is needed to assess interest in and the effectiveness of an enrichment program that inspires students to improve their reading skills by incorporated computer-based technology into an after-school setting.

Another limitation was the sample size for this project. The intent with action research is not necessarily to provide generalizable results, rather it is to provide descriptive results that let the reader determine how the project may or may not inform his/her own practice. Observations are a key component to developing descriptive results and as the instructor in 1 session each week, my observations were limited. This, combined with teachers who were unable to assist as planned, limited the observation data that was gathered and any consequent interpretations that could have been drawn from such data.

Regardless of these limitations, I was able to complete the action research project and gain an insight into the affects of operating an after-school program that did not incorporate remediation as its key instructional platform. Preliminary findings are promising. Student reactions and initial tests results indicate that this could be a beneficial program to implement in the local school setting for struggling students. I will continue to work toward the improvement of my county's after-school program and offer assistance as needed in formatting the curriculum needs addressed each year.

We know that technology alone cannot meet the demands of student learning: though there are some studies that attempt to link student achievement to technology use (Clements, 1997; Thomas, 1999) and others that take the stand technology is merely a delivery method used within the learning environment and its impact is only seen when it is considered as a component of a larger, more complex system of instruction (Clark, 1994; Mellon, 1999). After completion of this project the authors believe that computer-based technology can have a valuable place in enriching the lives of students who participate in after-school instructional program. After-school programs across the country are continuing to look for programs designed to enhance learning, accelerate academics and understanding, and increase student interest (Dryfoos, 1999; Grant, 1998; Pisapia, Knutson, & Coukos, 1999); by beginning the Terrific Techies we at St. Marys hope to contribute to designing after-school programs that can help accomplish all three of the aforementioned goals.

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