

2001

Integrating "kindergarten technology activities" into the kindergarten classroom

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Recommended Citation

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Integrating "kindergarten technology activities" into the kindergarten classroom

Abstract

This graduate project outlines how technology was integrated into a kindergarten classroom using the activities from "Kindergarten Technology Activities." The activities were tested during the 2000-2001 school year with a kindergarten class of fifteen students. The project gives a brief description of the activities, how effective the activities were, and what modifications may need to be made.

After any revisions, the activities will be shared with the other members of the kindergarten team for the following school year. These activities will improve the use of technology with the kindergarten students. The teachers will gain knowledge of additional technology activities that can easily be integrated into the curriculum they are already teaching.

**INTEGRATING
"KINDERGARTEN TECHNOLOGY ACTIVITIES"
INTO THE KINDERGARTEN CLASSROOM**

**A Graduate Project
Submitted to the
Division of Educational Technology
Department of Curriculum and Instruction
In Partial Fulfillment
Of the Requirements for the Degree
Master of Arts
UNIVERSITY OF NORTHERN IOWA**

**by
Tania Johnson
July, 2001**

This research project by: Tania Johnson

Titled: Integrating "Kindergarten Technology Activities" into the Kindergarten Classroom

has been approved as meeting the research requirement for the Degree of Master of Arts.

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August 1, 2001
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Introduction

It is important that technology be integrated into the curriculum being taught, not taught separately. Davis and Shade (1994) agree that only when computers are integrated into the curriculum for instruction and are applied to real problems for a real purpose, will children gain the most valuable computer skills – the ability to use computers as natural tools for learning. This must be taught from the beginning and the best place to start is in kindergarten. Children must see technology as a tool that helps solve problems or makes creating projects easier, not as an independent lesson. Many kindergarten technology curriculums are very non-specific. The skills listed are only introducing technology at the kindergarten level and teachers are not given activities to introduce these skills. If a few activities are given, they do not mix easily with the already established academic curriculum and so must be taught as separate lessons. Teachers without a confident technology background may not teach these skills at all. This causes a problem with children getting the right start to see and use technology as a tool for learning.

This author produced a project, “Kindergarten Technology Activities,” which includes activities found on the Internet and in other sources that may help teach the technology curriculum by integrating it with the rest of the kindergarten curriculum. This graduate project outlines how technology was integrated into a kindergarten classroom using the activities from “Kindergarten Technology

Activities.” The activities were tested during the 2000-2001 school year with a kindergarten class of fifteen students. The project gives a brief description of the activities, how effective the activities were, and what modifications may need to be made to the activities. After any revisions, the activities will be shared with the other members of the kindergarten team for the following school year. These activities will improve the use of technology with the kindergarten students. The teachers will gain knowledge of additional technology activities that can easily be integrated into the curriculum they are already teaching.

Methodology

The resources for this graduate project were found three different ways. The first search for information was completed using educational databases. The databases used were ERIC, Electric Library, and Proquest. Two searches were used: children + technology and children + computers. These searches discovered many available resources. The sources chosen were the most recent articles and articles from well-known educational journals. Some sources found were from popular magazines. These articles gave some interesting information and additional references but were not used as first hand sources for this project. Also with technology views changing so quickly, it was thought that anything older than ten years would not be an up to date resource for this topic. The second search method was through educational web sites. A few helpful web sites were Children and Computers (www.childrenandcomputers.com/), Technology and

Young Children (www.techandyoungchildren.org/), and the Early Childhood Technology Literacy Project (www.mcps.k12.md.us/curriculum/littlekids/).

These web sites offered research articles with relevant information and examples of projects and techniques for technology integration. The third source for resources was the references listed on the articles already chosen. Sources from these references were also selected because of how recent they had been written and topics specific to early childhood.

Overall, the articles used were articles that dealt specifically with technology and young children. They were recent articles by authors with an educational or technological background. The articles were found in educational journals. The main criterion used for evaluating the information found in these resources was that it was relevant to the topic of integrating technology or use in an early childhood classroom. The information also needed to be from a reputable source or written by experts in the field of technology or early childhood education.

The Project

This project began with an informal survey of the parents about their child's computer use at home (Appendix A). Each child's parent was asked if they had a computer at home and how their child used it (if they did). Nine of the fifteen families did own a computer at home and six did not. Of the families who owned a computer, only two families did not allow their child to use it. The other

seven families said their child used the computer for games. Some were educational games and others were adult computer games.

After the survey, the structure of the class was noted. This class of fifteen students is a fairly homogeneous group, coming from middle class families. There are eight girls and seven boys, ages five to six years, in the class. These students have a wide range of academic abilities and attention spans, but overall they all enjoy using computers.

The literature reviewed before this project dealt with the topics of the appropriateness of technology for young children, the importance of integrating the technology, and using developmentally appropriate software. Haugland is one expert in the field of technology with children and specifically choosing appropriate software. She says that the benefits computers have for children depends on the kind of computer experiences the children take part in and how often children have access to computers (Haugland, 1999). Haugland states that computers make an excellent learning tool when used effectively and they help children become engaged in the learning process (Haugland, 2000). She found that part of this learning process comes from the computer center being visible to the children. When this is possible children are allowed to observe what others are doing and interaction may take place. This placement of the computer stimulates peer mentoring, social interaction, language development, and cooperative play and also enables the teacher to observe from any area of the classroom (Haugland, 1999).

The author found it interesting to observe this interaction take place during the project. Many of the classroom computer activities invited children to work together or ask each other for help.

The position statement of the National Association for the Education of Young Children (NAEYC) on technology also gives some insight into the appropriateness of technology for children. The NAEYC believes that “a professional judgment by the teacher is required to determine if a specific use of technology is age appropriate, individually appropriate, and culturally appropriate” (NAEYC, 1996, p.1). Teachers must make good decisions about which technology to use and support their children in the use of that technology. This means that the teacher’s role is critical to ensure that the potential benefits are reached. Teachers who have not had proper staff development may not be qualified to do this. Haugland (1999) states that teacher training should not only include how to use the technology, but how to effectively integrate the tools into the curriculum. This project will assist kindergarten teachers by providing activities they can easily use to integrate technology into the curriculum. It will also help teachers see what is appropriate for the kindergarten child.

In March, 1997, the President’s Committee of Advisors on Science and Technology’s Panel on Educational Technology published The Report to the President on the Use of Technology to Strengthen K-12 Education in the United States (Expert Panel, 1997). This report identified six strategic recommendations

that would be needed in order for technology to make an impact in schools. The first two recommendations were to “focus on learning with technology, not just the technology,” and to “emphasize content and pedagogy, not hardware” (Feldman, 2000, p.1). Both of these recommendations emphasize the importance of integrating technology into the curriculum, not teaching technology separately. The computer needs to be viewed as a tool, which supports learning and this should be taught at an early age. Scoter, Ellis, and Railsback (2001) confirmed in their report on how technology can enhance early childhood learning that computers are powerful tools, which are most beneficial when used as a natural part of the learning experience. It is important for the teacher to feel comfortable using the computer and this will facilitate how the teacher integrates technology into the students’ learning. Computers should be used as part of the teacher’s overall classroom plan, supporting the existing educational framework rather than changing it or replacing it (NAEYC, 1996). Technology should be taught through the educational goals already in place, not independently.

Haugland (2000) suggests that a critical step to integrating computers and taking full advantage of children’s learning is to select developmental software. Activities using this software can easily be incorporated into the curriculum. Some features of developmentally appropriate software are:

- Encourages exploration, use of imagination, and problem solving
- The child is in control of the pace and path of the software

- Involves the senses by containing sound and animation
- Verbal instructions are given and picture cues are used
- Free from violence and may demonstrate positive social values
- Applies to real problems with real-life connections
- Installs and runs easily with printing and saving capabilities

(Davis & Shade, 1994; Haugland, 2001; NAEYC, 1996)

It is important for teachers to understand these guidelines for developmentally appropriate software. Children using developmentally appropriate software will be engaged in creative play, mastery learning, problem solving, and social interactions (NAEYC, 1996). This project includes many activities using developmentally appropriate software. It can give teachers an opportunity to see how successful using proper software will be in their classrooms. Haugland (2000) showed that children using developmental software had significant gains academically, socially, and creatively, but children exposed to non-developmental software had none of these gains and significant losses in creativity.

Using the knowledge gained from this literature the author continued with the project. The major part of the project included testing the activities with the class to see how they worked and what part of the activity may need to be revised. The activities were completed in the classroom and during the scheduled computer lab time. Each kindergarten classroom has two Apple IIe computers and three Mac 580's with CDROM capability. The kindergarten classes go to the

computer lab once a week for a 45-minute session. The computer lab contains thirty Dell computers, which run the Microsoft NT operating system. All students must login to the system in order to use the computer and this was the first technology obstacle to overcome for the kindergarten students.

The project was divided in two parts: computer lab activities and classroom activities. The computer lab activities used the software Paint, KidPix Deluxe, Mighty Math Carnival Countdown, Neighborhood Map Machine, and Microsoft Word. Computer lab activities also included using the Internet to go to bookmarked educational web sites. The classroom activities consisted of a variety of activities with different CDRoms. The activities are listed individually by the name of the activity and the date the class activity took place. Many of the activities are integrated into the kindergarten curriculum by involving the letter of that week or the unit theme. Following each activity is an explanation of how the activity went and if any changes need to be made to the activity.

Computer Lab Activities

(Sept. 20) Introduction to the lab - The first session in the lab was assisted by the media specialist. The author discussed computer lab rules with the class. These included staying seated, using quiet voices, and raising hands for help. Second, they talked about the parts of the computer, the names and functions of each. Then the class practiced the log on routine. This would need to be done each time the class came to the computer lab. In order to

do this the students needed to press the control, alt, and delete keys simultaneously. This brought up the log on box. The children then typed in the class name and password. Each kindergarten class has their own class log on. The name and password was written on slips of paper for each child to copy until they were able to memorize it. After the log on process, the students were introduced to the Thinking Things program. They were able to open this by clicking on the icon on the desktop. This program contains five different problem-solving activities. They worked on a memory game for the last ten minutes of our session. At the end of the session, they were taught how to quit the program and restart the computer. This was important so machines would not be completely shutdown after each computer session.

This was a difficult session for the class but a necessity in order for the class to learn the rules and procedures of the computer lab. It was hard for the class to listen and follow directions for the whole session. The students were happy to have some time working on the computer with Thinking Things and they enjoyed the game. The log on process went well for a first time. The three adults were necessary helping students not get frustrated with this new system. It was also already evident that some needy children need to have more experienced children to sit next to and assist them.

(Sept. 26) Making shapes with the shape tools for S week - Since the Kid Pix program was not available on the PC machines, we used the Paint program that is on the hard drive of these machines. It is listed under programs and accessories. After each child opened the program, the author was able to show at the same time all the students the tools. They practiced making different shapes with the circle tool, rectangle tool and line tool. The tools work very similar to the Kid Pix tools, however there was not the capability to easily delete the whole page when the child was ready to start over or made a mistake.

(Oct. 3) During the next session in the lab, the class reviewed the tools in the Paint program and the author showed them how to change the colors and how to type their name. Each child made a page full of different shapes.

We then printed it and made a copy to keep in their portfolio.

This activity was acceptable. It would have been better using the Kid Pix program, which is similar to use but more kid-friendly. The Paint program was sufficient as a back up and did have similar tools. Making the shapes is a good activity to teach and reinforce shape identification as well as see the children's different levels again. Some children made the shapes and did no more. Others made pictures with the shapes and others used different colors to fill in the shapes. Even with the simple assignment of making shapes, each child was able to show some individuality. This activity did show how much easier it is to teach the

whole group at once during one session, instead of using thirty minutes with each child. At least it is somewhat easier when your whole group is only fifteen students and there are two adults to help. Some children were also beginning to help their neighbors in the lab situation. This activity is a good example of integrating the technology. Learning shapes is already in the kindergarten curriculum and this activity uses technology to build upon that.

(Oct. 17) Mighty Math Carnival Countdown - This was the first time we had used Mighty Math Carnival Countdown so the author had to show the students how to get into the program and explain the menu. We only went to one place in the Carnival: the Carnival Cars. In order to introduce this to the class, the author and her associate sat at computers with children watching around each computer. This way they could be shown what to do without the children starting to play while we were talking. This worked pretty well and after a short introduction, they were turned loose on their own machines. As they started, this author showed them how to change the level of the game and made sure everyone moved to Level A. The children liked working on sorting skills through this program. Some children chose to use the explore mode while others used the question mode. The difficult part of this session was getting all the headphones passed out to the class so they could each hear their own game.

(Oct. 31) The class reviewed the Carnival Cars and then were introduced to another area, Pattern Block Round-Up. This author showed them how they could also use the explore or question mode in this area and she explained a few of the tools. They remembered how to check the difficulty level and liked to look at this when they finished to see how far they had worked.

Both of the areas we introduced on the Mighty Math Carnival Countdown were useful. The children were motivated to use the program and practice their math skills. The program also allowed for changing the difficulty in order to challenge some students. Mighty Math Carnival Countdown contains many features of developmental software. It gives the child control of the pace of the software, verbal instructions and picture cues are used, and children can work at their own level. The children were very motivated to use this software while practicing math objectives in the kindergarten curriculum.

(Nov. 7) Typing the alphabet using the shift key (Appendix B, p.35)-This was another activity in which the author had hoped to use the Kid Pix program. Students were going to practice using the typewriter tool. However, we used Microsoft Word to do this activity instead and it worked just fine. We opened Microsoft Word and each child typed his/her name. Then the author told them we would be typing the alphabet with the capital and lowercase letters. Each child was shown where the shift key was and told to hold it down when they typed the letter "A". What happened? They

then typed a lowercase “a” (Aa). The author then asked them to find the space bar (the long bar at the bottom of the keyboard) and push it three times to leave a space between the letters. The author explained this would be our pattern: uppercase, lowercase, space, space, space, uppercase, lowercase, space, space, space, etc. Together we all found the letter B and held the shift key down and typed the capital B and then the lowercase b. This was enough practice for most of the class and they were on their way finishing the alphabet. A few students who did not know the letters yet were given a written out alphabet to follow. With an associate, the author walked around watching the children work and helping those who had trouble. When each child finished, they could print the alphabet to take home.

This activity went very well. Each child was able to feel successful typing the alphabet and have a finished product to take home. They practiced a pattern while typing, reviewed their alphabet recognition, and worked on listening and following direction skills. They also learned a couple more keys on the keyboard: the shift key, the space bar, and the delete key when they made a mistake. Though this author had planned to use Kid Pix to do this activity, Microsoft Word worked just fine. One thing that was important to do before the children started typing was make sure the font was set up to show the letters with the correct form (Century Gothic) and the size was large enough on the screen.

(Nov. 14) Web site: Alfy.com – This was the first activity the class did on the Internet. The web site was bookmarked so after the students clicked on the Internet Explorer icon, they were helped by an adult to open the Alfy.com site. This web site included several areas and a fairly easy to use menu. The areas included were Create, Arcade, Cool Sites, Surprises, Sports Arena, Music Mania, Storyville, and Brain Train. The children were given time to explore different areas and share what they found with the class.

This activity was not planned well. As a first time class experience with the Internet, the author should have had specific activities for the students to do. While the students explored the machines froze up or many activities took too much time to load and the children were not actively involved. This web site contained many great activities but needed to be more structured for this class.

(Nov. 28) Journal Page: What makes you happy? (Appendix B, p.36) - We were able to use KidPix for this activity. The author demonstrated on one machine in lab while the class sat on the floor to watch because the large screen monitor was not available in the computer lab yet. The students were to use the drawing tools to draw a picture of something that makes them happy. Then they used the typewriter tool to type a sentence about the picture. When they were finished we printed a copy for them to take home and a copy to put in the portfolio.

This activity went very well. The students enjoyed drawing in KidPix and most were able to do a good job. There is a wide range of writing ability in this class, so it was nice having a parent volunteer to help some children with their sentences. Some children finished quickly and others needed constant reminders to keep working, similar to when they work in the classroom. A few children did not finish and needed to finish the next week.

(Dec. 12) Designing Christmas Cards - This activity was a simple drawing activity. The students were designing pictures for a Christmas card for their parents. We were able to save these and print in color. This activity gave the students a chance to practice their fine motor mouse skills and use their creativity.

(Jan. 9) Journal Page: Draw a snowman and write a sentence (Appendix B, p.37)- Using the draw tools students drew a snowperson and then wrote a sentence about it using the typing tools. This activity focused more on the children's writing. Drawing the snowman was not a difficult task for the children.

(Jan. 16) Write 'I' sentences using stamps- The author modeled this activity for the class. After each child wrote their name on the page, they were to write three to five "I sentences." We first talked about the letter I always being a capital and the author showed (reminded) them how to make the capital I using the shift key. The author wrote a few sentences for example: I am 6

years old. I like ice cream. I love school. Some of the words they did not know how to spell, so they had the choice of using stamps in place of the words they did not know. They could type "I like _____" and then find the stamp for basketball to stamp there. Children who were able to do the writing could write the word and then use the stamps to illustrate it. When they were finished, they were printed for the portfolios.

(Jan. 23) Self-portraits with I sentences (Appendix B, p. 38)- After practicing I sentences the previous week, each child drew a self-portrait and then wrote an I sentence to go with it. Each child worked very hard using the draw tools and paint can to make the self-portraits look like themselves.

They then typed their name and a sentence using the typewriter tool.

These journal activities went very well and gave the low ability children a feeling of being successful by using the stamps. All children were able to do the sentences at different levels. Some were very creative and others copied the same sentence three times using different stamps. Each child was able to work at his/her own level. Some children had to be reminded of making the letter I capital. Many children enjoyed the stamps and spent more time stamping than writing sentences. One change with this activity would be to have a free explore activity with the stamps before this, so children know the different stamps which are available. Some children were able to learn how to change to different sets of stamps using the Goodies menu. They then helped others who wanted to change their stamps.

The self-portrait turned out very good and children used their previous knowledge to write the I sentences. The journal writing that the children did in these assignments was in agreement with research by Yost (2000) in her article on emerging literacy. She states that using technology effectively supports the writing development of emergent writers by allowing some children to function at a higher level. Using the computer, children are able to demonstrate their understanding of various concepts of print like spaces between words, punctuation, and capitals.

(Jan. 30) Dot-to-dots using specialty paintbrush - This activity was modeled for the class. The author showed the class where to find the dot-to-dot paintbrush and how to use it. The dot-to-dot paintbrush when moved across the page makes a line with numbered dots. When the mouse button is released, the line disappears and only the dots remain. Each child was given time to practice using the dot-to-dot tool and try to make a dot-to-dot picture to print.

This activity was a nice change for the class. It worked the mouse skills while letting the students be creative making their dot-to-dots. Since this activity was done as a D week activity, the children could be asked to make their dot-to-dots into things that begin with the letter d (dogs, dinosaurs, dads, etc.)

(Feb. 6) 100 day activity-The class used the Internet again to go to a 100 counting website. On this web site, the student was given a 100's chart with certain

numbers missing. The student filled in the missing numbers to reach 100.

This was a difficult task for some of the students but many enjoyed counting and typing in the numerals and it gave them a great sense of accomplishment when they had finished. Some children that finished early were asked to help others with their 100's chart. This helped each child to be successful.

(Feb. 13) Design valentines for 4th grade buddies - This activity was a simple drawing activity. The students were designing valentines for their 4th grade buddies. These were printed in black and white and then colored in the room. This activity gave the students a chance to practice their fine motor mouse skills and use their creativity. Some children also used the typewriter tool to add their buddy's name and a message.

(Feb. 20) Number sentences using dice paintbrush (Appendix B, p. 39) – This activity was modeled for the class. The author demonstrated how to find the dice paintbrush using the different paintbrushes. After typing five sets of dice on the page, the author used the Alphabet stamp tool to stamp a + and = sign to make each set of dice into a number sentence. Then stamped the correct answer to the sentence, using the number stamps.

This activity was a good activity for introducing different tools and observing some math skills with the number sentences. Some children tried to make all difficult math problems using lots of sixes and others tried to make easy ones

using only low numbers. It was good problem solving for the children to figure out how to get different numbers on the dice.

(March 6) Making Quilts (Appendix B, p.40) – This activity was divided into two sessions and that worked very well. The first session was making the quilt. The author modeled this first and then the children worked on their own. They first needed to use the straight line tool to make two horizontal lines and two vertical lines similar to a tic tac toe. It was important that the lines went to the very edge of the page so there were no problems when filling in the squares. After making the lines each child needed to have their screen checked by an adult to check that the lines were evenly spaced. Then the child filled in the squares using the paint can and choosing a patterned color. They were supposed to make a pattern for their quilt. They finished by typing their last name in the center block of the quilt. Some help was needed at this point to change the font and style of the names so they would be big enough to fill the squares.

(March 13) Making Quilts – During the second session, the students decorated their quilts using stamps that described them. They were to find stamps of things they like to do, or eat, or maybe favorite animals and put them in each of the quilt blocks that were left. The author taught the class how to use the shift and control key to make the stamps larger so they would look

better on their quilt. When they were finished, the quilts were saved and printed on the color printer.

This activity went very well. Splitting the activity over two sessions made it easier for the children to do their best work and not feel rushed. The class did a good job of following directions on this activity while showing some creativity with their own quilts. Before starting to work the second session, the author had student helpers log on to the machines and open Kid Pix and each child's saved quilt. This saved time during the computer session and the class was able to see everyone's quilts when they walked into the computer lab.

(March 20) Rainbows for R week (Appendix B, p.41) – In order for this activity to be completed in one session, the author made a template for the children to use. The template included the color words on the left side of the screen and horizontal lines dividing the page and each color word space. The author modeled the activity for the class using the template while the associate opened the template on each child's computer. The first step in the activity was to cover each color word with the appropriate color rectangle. The rectangle tool and correct color from the color palette were selected. Then the rectangle was drawn over the color word. When this was done, the word actually appeared on the rectangle drawn and it looked like a rainbow going down the page. For some children that did not know their color words this was done for them. After adding all the color

rectangles the activity was to look at different stamps and sort them by color to see which color they could find the most of. When the child was finished the rainbow color sort was printed in color to put in their portfolio.

The students enjoyed this activity and were excited about seeing which color they could find the most stamps for. Some children tried to get all of their colors filled and others only did the minimum work. This activity worked well but did need some patience from the children because some of the stamps would take a little time to load. The children needed to remember to only click once and wait so they would not end up with several of the same stamp on their page. This was difficult for a couple children and they did better having an adult always watching them.

(April 10) Design Easter eggs - This activity was a simple drawing activity. The students were designing Easter eggs and decorating them using the paintbrush tools. The work was printed in black and white, so they could be colored in the classroom. This activity gave the students a chance to practice their fine motor mouse skills and use their creativity. When they had finished, children were given free choice using Kid Pix or Thinking Things.

(April 17) Draw family and write sentence (Appendix B, p. 42) – This activity was connected to the family unit. Each child drew a picture of their family using the Kid Pix drawing tools. When they were finished they wrote a

sentence about their family using the typewriter tool. The family pictures were printed in color for the cover of their family folders. This activity took two sessions to complete. Students, who finished early during the second session, were able to work on the Mighty Math Carnival Countdown program.

(May 1) Neighborhood Map Machine – The author introduced a new program called Neighborhood Map Machine. This program gives students the capability of making their own maps. There are three main areas: create a map, explore, and solve a mystery. The children were introduced to the create a map area. The tools for making roads, buildings, and adding objects were explained and then the children were able to get started.

The students enjoyed this new program and were able to work at their own pace creating their maps. We did not print the maps this first time, hoping we would get to use the program again. One change would be to introduce this program earlier in the year and let the children make maps to go along with one of our reading series stories. This would give them a purpose for the map and help them visualize the story through the map.

(May 8) Fancy fish (Appendix B, p. 43) – For the under the sea unit, each child designed their own fancy fish. The author modeled how to draw the fish and use the paint can to fill in the areas of the fish. To conserve on ink, the children were to use textured prints when coloring the fish.

This was an easy, fun activity for the class in which everyone was able to be successful. It was an excellent activity for the end of the year and a good opportunity for the author to sit back and see how much this class had grown through the year. Students were working independently and skillfully, using the mouse and KidPix tools. They were able to make choices without a friend's help and feel proud of what they had accomplished. Overall the kindergarten students had gained a strong technology background that could be built throughout elementary.

Classroom Activities

(Sept. 10) Drawing bears for B week - The district was unable to get the Kid Pix Deluxe to run on the Windows NT machines. There are three Mac machines in the room that have Kid Pix on the hard drive, so this author started to let the students explore the program. She showed each student how to use the pencil to draw and the eraser tool to erase. The students have learned a few other features along the way and especially like playing with the wacky paintbrush. There was some trouble with the machines freezing up and students losing their work.

(Oct.10) We practiced first in the lab using the Paint program so all the children had an idea of how to draw the bear. The creative part for them came when using the Kid Pix program. They were able to add color, a patterned background, and type their name. This author sat with each child while

they did this project, to make sure they did not do anything to freeze up the machine. She was also able to show them the tools they would need for certain parts of the picture and to remind them how to change the colors on the palette. They finished by using the typewriter tool to type their name on the page. Each child enjoyed making the bears and they were printed for their portfolio. Next time the pictures could be put into a class slideshow.

This activity was very successful for two reasons. First it gave the author a chance to work with each child one on one and determine their learning level. Even though this was time consuming and it would seem easier to use a lab situation to teach the basic tools of Kid Pix, this gave the author the time to answer questions and give each child some personal time. Second, the child were able to create something individually that they were very proud of and the finished product looked professional.

(Sept. 17) Mixed-up Mother Goose CDROM - This CD was not listed in the "Kindergarten Teaching Activities", but it is now because of the great excitement it brought to our class. We begin the year with a Nursery Rhymes unit and when we started it this CD was put out in the classroom. Two students worked together on this CD and this author observed to get them started with some basic hints. Mixed-up Mother Goose is a problem solving activity in which the students must find each item and return it to

the owner in order to hear the nursery rhyme. When they have found the correct rhyme they earn a golden egg. Each pair of children was able to find two golden eggs and then had to give two new children a turn. The difficulty of this game was that the player could only hold one item at a time. This meant that the players had to remember where they had seen the items and use the map to figure out where they needed to go. When a pair of children would match an item with the appropriate nursery rhyme, many students would crowd around the computer to hear the nursery rhyme that they had found. The nursery rhymes were sung in non-traditional rhythms (Humpty Dumpty in rap, Little Bo Peep in calypso, etc.) which made it even more fun for the class.

This software was so engaging for the whole class. The students had to problem solve and successfully worked together in pairs. They also had to use some direction and map skills to know where they were going. This program has the students practicing their mouse skills and taking turns. It also reviewed some of the nursery rhymes that are not as well known to the students and showed the written word to practice some reading skills. Watching the children use this CDRom confirmed what the research said about technology enhancing children's cognitive and social abilities. Other research says that when working with a computer, children prefer working with one or two partners over working alone (Clements, Nastasi, & Swaminathan, 1993). This was evident with the groups of

children that continued gathering around the computer, watching the Mixed-up Mother Goose CDRom activities.

(Oct. 24) Sammy's Science House CDRom – This CDRom has an easy to use

main menu screen with five different activities for the kids to choose.

There is a nature environment to investigate, a weather area, a movie theater that works on sequencing, a construction area, and a sorting area.

This software was good for problem-solving skills and very popular with the class.

Me and My Dad living book – This CDRom was ok. Each child listened to the story once and enjoyed finding the interactive areas within the story.

However, this program did not have many children returning to it and those who did only were playing with the interactive areas. It needed an additional activity with it like having each child draw their favorite part of the book or make their own story about their dad.

Alphabet Sesame Street – This CDRom was very popular, especially with one child who always went to the same area. It had many different areas to explore and primarily was for learning and practicing the alphabet. The children enjoyed the television that showed songs about the alphabet so much that we left it on at snack a few times for them to listen to it.

The children learned to take turns on the computers and we started a name checklist to make sure everyone gets a turn on each program. We also used a

timer to help more than one child get a turn each day. Children are being encouraged to work alone but will ask for help from others in the class. The author has noticed that a few children like to go to the computers everyday and others rarely take a turn.

(Nov. 14) Putt Putt Goes to the Moon - This problem-solving CDROM was very popular, but difficult for some children to know what to do. One child in the class liked to help the other students because he had the program at home. He often played for them instead of helping. This program did not have saving capabilities and that was frustrating for children who worked so hard to save Putt Putt but were not able to finish during center time. Children were allowed to work with a partner on this program as long as they took turns.

Putt Putt and Fatty Bear - This CDROM contained several different games including checkers, hangman, and tic tac toe. There was also a coloring area and an area that practiced beginning sounds. Children enjoyed this program and though it did not have much educational value it was a good experience to practice mouse skills.

Alphabet Express - This program was very simple and meant for low-level alphabet skills. It had a few activities dealing with the alphabet but was difficult to navigate through. It did contain alphabet pages that had a

section for writing the alphabet letters and a picture beginning with that sound, which could be printed for use in the classroom.

(Jan. 9) Bailey's Book House - This CD Rom contained five sections for the children to explore. The areas worked on reading skills, rhyming, beginning and ending sounds, and nursery rhymes. This program was popular and many children could use it at their level. We had this program on all three computers so it was interesting to see the interaction between children when they did something on their computer and wanted to show the person next to them working on the same program.

(Feb. 6) Huggly's Sleep-Over - This CD Rom was very popular and had saving capabilities so children could continue working on the problem for several days. The problem the child needed to solve was to find or earn different items that Huggly needed for his sleep-over. Each room in the house had a different activity for the child to accomplish. Children worked together in pairs on this program and sometimes others would gather around to get some hints for what to do when they played. This program sparked lots of conversation and problem-solving and was enjoyed by the students.

There were a wide range of CD Roms used in the classroom and the most popular seemed to be the ones that needed the most thinking power on the students' part.

The problem solving involved in the Mixed-Up Mother Goose CD Rom and Huggly's Sleep-Over made these two programs very popular as well as making

the children think and work together. This was supported by the NAEYC (1996) when they wrote that children engage in high levels of spoken communication and cooperation at the computer. The computer activities that were completed in the classroom showed a great deal of student interaction and opportunities for students to help each other.

Conclusion

Testing the “Kindergarten Technology Activities” this school year has been very beneficial for this author’s use of technology in the classroom. It has also given the opportunity to witness how important integrating technology is and how it is supported by the research on technology use with children. Children are motivated by technology and want to use it. Watching the children and how much they enjoyed the activities and stayed on task showed how motivating technology can be. Children are interested because they can make things happen on a computer and if developmentally appropriate software is used they will be fully engaged in the activity (NAEYC, 1996). This author often observed children helping each other and discussing what was happening on the computer screen. This interaction may take place during regular classroom activities but when the computer is involved it gives one child a chance to be the technology expert and strengthen their self-concept. Clements (1994) and Haugland (1999) agree when they state that children using computers share leadership roles more frequently and develop positive attitudes toward learning. The cooperation and helping that

goes on is also important. Children will seek help from one another and seem to prefer to receive help from peers instead of help from a teacher (Nastasi & Clements, 1993). Overall, this proves the importance of having technology as part of a kindergarten curriculum. The students grow academically as well as socially using the technology and begin to see technology as a tool to enhance their learning.

Recommendations

After integrating the “Kindergarten Technology Activities” and observing how successful they can be in a kindergarten classroom, it is important that they be shared with the rest of the kindergarten team. Many early childhood teachers do not feel capable of teaching technology and it can be seen now that their students are missing out on a lot of experiences if they do not integrate them into the curriculum. This author recommends that the kindergarten teachers have the opportunity to use these activities with their own classes with some additional staff development to help them feel comfortable teaching with technology.

Several activities can be modeled for the teachers just as they would be for the class. This could happen during a monthly team planning meeting and it would also give the opportunity to share additional ideas. As the kindergarten team feels comfortable with their successes, they could share some projects with the first grade teachers to be sure the technology skills continue to develop as the children move through school. This is mentioned by the NAEYC also in their professional

development plan. It says, “as teachers try out their new knowledge in the classroom, there should be opportunities to share experiences and insights, problems and challenges with other educators” (NAEYC, 1996, p.5).

It is also essential for the teachers to know the research and how important it is to keep the technology integrated into the regular curriculum. This integration can be maintained by discussing what activities are taking place, using technology and making sure they are driven by the curriculum not by the technology. The appropriate and beneficial use of technology with young children is ultimately the responsibility of the early childhood educator, working in collaboration with parents (NAEYC, 1996). How technology is being used in the classroom should be shared with parents so they know what is happening in the classroom. Teachers can also make sure they are using technology appropriately at home by giving them suggestions for developmentally appropriate software to use. Children will use the technology with given the chance, this will ensure that their use is a positive learning experience in the classroom and at home.

References

Clements, D., Nastasi, B., & Swaminathan, S. (1993). Young children and computers: Crossroads and directions from research. *Young Children* 48 (2), 56-64.

Clements, D. (1994). The uniqueness of the computer as a learning tool: Insights from research. J. Wright & D. Shade (Eds.), Young children: Active learners in a technological age (31-50). Washington, DC: NAEYC.

Davis, B. & Shade, D. (1994). Integrating technology into the early childhood classroom: The case of literacy learning. *Information Technology in Childhood Education*. Charlottesville, NC: Association for the Advancement of Computing in Education.

Feldman, D. (2000). Technology and early literacy: A recipe for success. Retrieved February 3, 2001 from the World Wide Web: http://www.childrenandcomputers.com/Articles/technology_and_early_literacy.htm

Haugland, S. (1999). What role should technology play in young children's learning? Part One. *Young Children* 54 (6), 26-31.

Haugland, S. (2000). What role should technology play in young children's learning? Part Two. Early childhood classrooms in the 21st century: Using computers to maximize learning. *Young Children* 55 (1), 12-18.

Haugland, S. (2001). Selecting developmentally appropriate software. Retrieved March 17, 2001 from the World Wide Web: http://www.childrenandcomputers.com/Articles/selecting_developmentally_approp.htm

Nastasi, B. & Clements, D. (1993). Motivational and social outcomes of cooperative education environments. *Journal of Computing in Childhood Education* 4 (1), 15-43.

National Association for the Education of Young Children (NAEYC). (1996). Technology and young children - ages 3-8. Washington, DC: Author. Retrieved February 3, 2001 from the World Wide Web:
http://www.naeyc.org/resources/position_statements/position_statement1.htm

Panel on Educational Technology. (1997). *Report to the President on the use of Technology to Strengthen K-12 Education in the United States*. Published by the President's Committee of Advisors on Science and Technology: Executive Office of the President of the United States, Washington, D.C.

Scoter, J., Ellis, D., & Railsback, J. (2001). How technology can enhance early childhood learning. Northwest Educational Technology Consortium (NETC). Retrieved February 3, 2001 from the World Wide Web:
<http://www.netc.org/earlyconnections/>

Yost, N. (2000). Emerging literacy: Crayons, markers, pencils and computer experiences. Retrieved February 3, 2001 from the World Wide Web:
http://www.childrenandcomputers.com/Articles/emerging_literacy.htm

Appendix A

Technology Parent Survey

Parent and child's name:

Child's age:

Do you have a computer at home? YES NO

Is your child allowed to play on it? YES NO

If yes, what programs do they use?

Does your child use computers elsewhere (grandparent's home, day care, etc.)?

YES NO

Appendix B

April's alphabet

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj

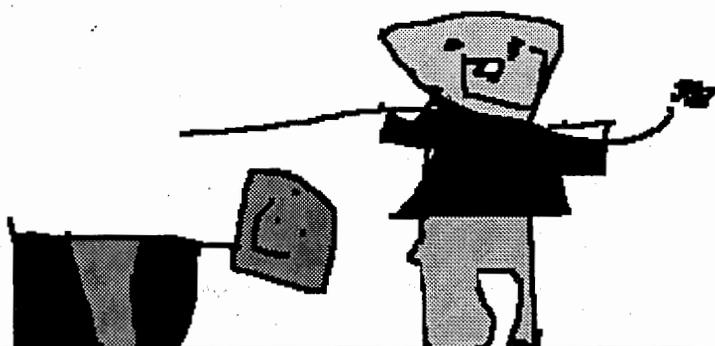
Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt

Uu Vv Ww Xx Yy Zz

Journal Page – What makes me happy?

collin

I am happy when I play with my cat , throwing the ball
and he chases it.



Journal Page: Draw a snowman and write a sentence

JAN 09

I Like To Build Snowmans

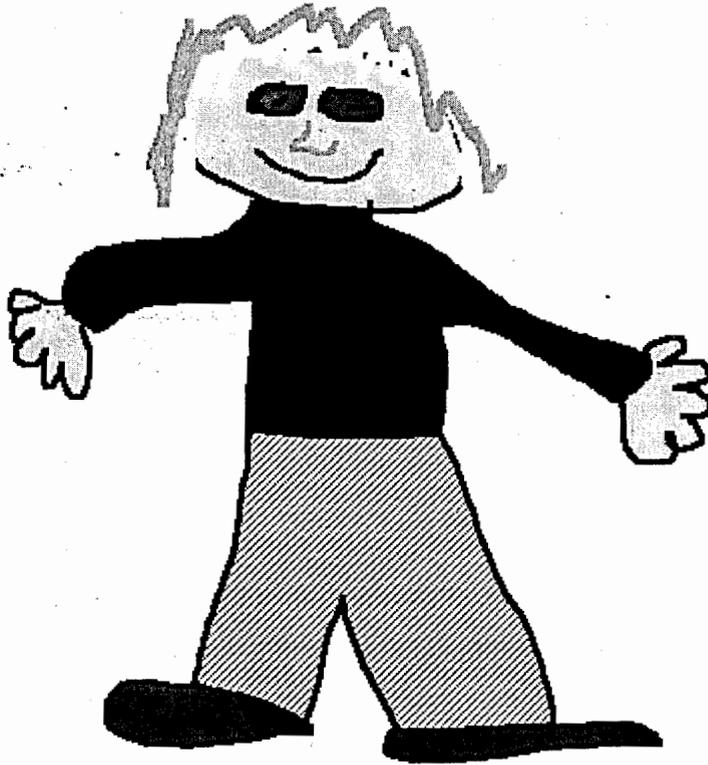


Brooke Stauffer

Self-portraits with I sentences

Mrs. Johnson
I am a kindergarten teacher at
Coolidge Elementary.

1-23-01



Number sentences using dice paintbrush

$$\begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} + \begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} = 10$$

Brooke

$$\begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} + \begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} = 6$$

$$\begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} + \begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} = 4$$

$$\begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} + \begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} = 9$$

$$\begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} + \begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} = 11$$

$$\begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} + \begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} = 5$$

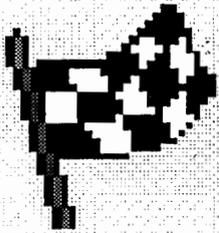
$$\begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} + \begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} = 8$$

$$\begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} + \begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} = 9$$

$$\begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} + \begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} = 9$$

$$\begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} + \begin{array}{|c|} \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \cdot \\ \hline \end{array} = 12$$

Making Quilts



Brown



Rainbows for R week

Dylan :

red



yellow



orange



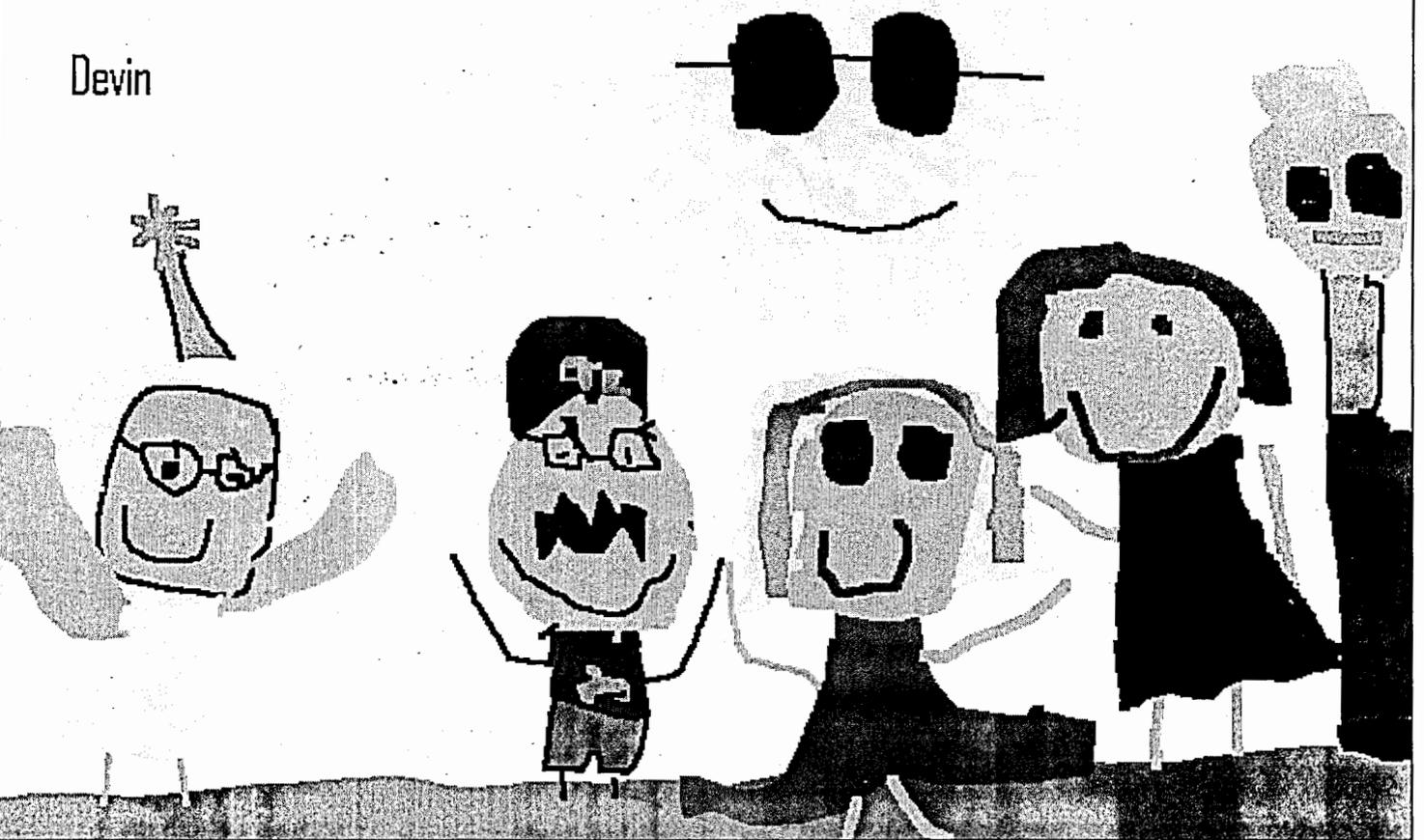
green



Draw family and write sentence

My Famaley Is Going To Taco Bal.

Devin



Fancy fish

Kylie

