



TECHNOLOGY
RESEARCH
COMMITTEE

2007 – 2008 Grant Project Report

Project Title: Integrating Interactive Technology Across the Curriculum in Kindergarten

Project Creator(s): Lynn Gilyard

School District: Union Endicott CSD

Grant Award: \$2500.00

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Integrating Interactive Technology Across the Curriculum in Kindergarten Project Report

1. Project Description

This project will integrate the use of an Interactive White Board across English Language Arts and Mathematics curriculum in kindergarten. Universal Design promotes inclusion through access, participation and achievement for all students, those with and without disabilities. Integration of best practices using Fountas & Pinnell's, Phonics Lessons, Letters, Words and How They Work; Fountas & Pinnell's, Guided Reading, Good First Teaching for All Children; Six Traits Writing Practices; and Kid Writing, by Feldgus & Cardonick; will develop and improve comprehensive literacy in kindergarten students.. Extending technology access throughout the Mathematics curriculum using Everyday Mathematics, University of Chicago School Mathematics Project; Scott Foresman – Addison Wesley Math; AFT-ER & D Thinking Mathematics Foundations, Growing with Mathematics by Creative Publications; NYS Content and Process Strands in Mathematics and best practices in teaching mathematics will develop and enhance early number sense and problem solving skills for a comprehensive curriculum in kindergarten. In addition, integration of interactive technologies such as a SMART Board into daily classroom instruction and routine will increase student's abilities to successfully meet the appropriate New York State standards, as well as district graduation requirements. Including technology, like the interactive white board in the kindergarten classroom, will provide motivation and opportunity to develop necessary life skills.

Implementing this project has been an exciting challenge for me this past school year. I am fortunate to have benefited from many diverse educational experiences over my career of twenty five years. Through the award of this grant I have been able to effectively implement practical use of an interactive white board throughout my kindergarten curriculum. In addition, I believe I have maintained practice of the principles of universal design within my class to create an inclusive and collaborative environment for all students. Providing access to adaptive hardware and software use of new technologies such as interactive white boards, switches, digital images and desk top note takers, allows opportunities for the successes of my students over the school year. My students, nineteen in number, nine girls and ten boys, ranging in cognitive functioning from non readers to fluent readers above grade level; writers ranging from emergent to conversational levels have been successful in making noted gains in English language Arts areas as well as in Mathematics this school year. I feel my initial objectives have been met and look forward to implementing established practices in the years to come.; I am motivated to further develop my skills in order to enhance those of my students to meet graduation goals of becoming life long learners.

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A. Objectives

The purpose of this grant proposal is to:

- apply Universal Design principles by integrating the SMART Board applications to increase student participation and success.
- increase student motivation, independence in reading and writing using the interactive white board,
- increase higher level thinking and problem solving skills by integrating the use of the SMART Board and best practices in teaching mathematics
- improve written work of students with fine motor deficits using the interactive white board
- improve listening and comprehension skills providing opportunities for guest authors to read aloud within the classroom environment

This proposal is aligned directly to New York State Learning Standards in the areas of:

- **English Language Arts**
 1. Read, write, listen and speak for information and understanding.
 2. Read, write, listen and speak for literary response and expression.
 3. Read, write, listen and speak for critical analysis and evaluation.
 - 4.** Read, write, listen and speak for social interaction.

- **Mathematics, Science and Technology**
 2. Access, generate process and transfer information using appropriate technologies.
 3. Understand mathematics and become mathematically confident by communicating and reasoning mathematically, by applying mathematics in real world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability and trigonometry.
 5. Apply technological knowledge and skills to design, construct, use and evaluate products and systems to satisfy human and environmental needs.
 7. Apply the knowledge and thinking skills of mathematics, science and technology to address real life problems and make informed decisions.

B. Activities (revised)

- *Morning Message* created and presented using Interactive White Board, Microsoft Word and Smart Notebook for instruction
- *Interactive Math Journal* created and presented using Interactive White Board, Board maker 7.0 , Microsoft Word and Smart Notebook for developing problem solving skills/ strategies

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- *Guided Reading Mini Lessons* incorporating *games* and *manipulatives* presented using Microsoft Word, Kidspiration, Smart Notebook and the Interactive White Board
- *Journal Writing / Word Processing* using Interactive White Board , classroom computers, Microsoft Word, Kidspiration and Smart Notebook

The initially proposed activities were adjusted slightly as the year progressed and the abilities of the children in the class developed. It was a pleasure to implement the activities in a class of “older” kindergarten students, those with experience in a pre school or early kindergarten class or those who turned six years of age this school year. The “more mature” kindergarten student made a definite difference in their ability to learn and use the interactive white board and follow direction and procedure. Many of the activities were applicable in both small and whole group situations focusing on both heterogeneous and homogeneous groupings of abilities. In addition, my skills as their teacher were also developed by taking several courses in the use of interactive white boards as well as individual lessons from colleagues, our librarian and the computer personnel at Union Endicott. Instruction and “hands on” experience provided the necessary support I needed to be successful in teaching my students and implementing these applications into my class routine. Finally, my professional goal statement for the school year was written to include the TRC grant, EERC classes and the inclusive classroom. Approaching the school year with this plan enabled successes for all of my students as well as for me.

C. Evaluation

- Student Work/ Journal Writing samples collected monthly
Each student compiled a monthly collection of journal topics in a single folder. The folders were used to assess monthly progress in writing skills. Student samples were collected each progress quarter for the 2007– 2008 school year. It was interesting to view individual student samples from the beginning of the month throughout the end of the month in order to note progress over that time span. Thumb drives added to the project by allowing student portfolio storage for data collection and evaluation.
- Literacy and Writing Assessments
The required assessments have been completed to date and are included in the attached class profile graph.
- Writing Portfolio Assignments
The required assignments demonstrating a sample of each ELA Writing Standard have been completed and collected to date for each student. Thumb drives added to the project by allowing student portfolio storage for data collection and evaluation.

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- Mathematics Assessments

The required assessments have been completed to date and are included in the attached class profile graph. Thumb drives added to the project by allowing student portfolio storage for data collection and evaluation.

D. Executive Summary

Using the principles of Universal Design combined with today's best practices in reading; writing and mathematics early learners will develop and increase basic literacy and mathematics skills using comprehensive approaches to promote literacy and mathematics in kindergarten. Software applications paired with the interactive white board provide adaptations that make curriculum accessible to all students. Using the interactive white board and integrating its use throughout the kindergarten curriculum will provide young learners with opportunities for “hands on” interactive education. Integrating Universal Design principles into daily classroom instruction will increase student's abilities to meet New York State standards and district requirements. Including technology will provide motivation and opportunity to develop life skills.

By researching the Principles of Universal Design through articles and implementing classroom strategies learning has been enhanced in my inclusive kindergarten classroom. Presently the kindergarten curriculum has been designed to expose students and provide a strong base of experiences for future learning situations. By including best practices with the support of technology applications and adaptive materials such as the interactive white board, Boardmaker and Writing w/ Symbols 2000 has provided opportunities for all students to excel this school year. The interactive white board has provided motivation and excitement for learning and in our lesson structure as a teaching tool, to enhance learning for my students as well as colleagues. Lessons using Smart Notebook software coupled with imbedded tools and access to clip art and graphics has brought each lesson to life, including movement and manipulation of pieces making learning truly an interactive, “hands on” experience. Installation of a ceiling mounted projector and desk top scanner have made access an unbelievable convenience for what I would call “no excuse use” of the available technology. We are able to project onto the interactive white board at a moments notice to allow for whole class presentation of lessons, worksheets and other materials. The doors have been opened and internet access is also directly available; my challenge is time to research and incorporate it further into my lessons for use on the interactive white board.

The emergent readers and writers have continued to benefit greatly from the visual cues, graphic organizers, desk top computers and use of technology to motivate and inspire their learning. Visual Schedules created daily with Boardmaker provide

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organization and structured routine for the entire class; as well as the autistic children who require this adaptation to function independently. Task analysis created using Writing w/Symbols 2000 provided pictures and words to follow examples of ideas and role plays for social situations like playing in housekeeping or with blocks. Autistic children benefit from these “social stories” to learn appropriate social skills. Using the NEO for letter and word practice as well as writing sentences provided students with the exposure to the keyboard needed to be successful on the classroom computers. The student with fine motor issues benefits by the exact letter formation and visual representation of these letters, words and sentences to continually be exposed to correct examples in text. Using the interactive white board to enhance fine motor skills and body position for those children challenged with postural control has been beneficial for writing practice as well. Providing ready to use manipulatives on the interactive white board has contributed positively to our Mathematics lessons as well as enriched our classroom discussion and individual student outcomes.

Lessons and materials created with Microsoft Power Point and Kidsppiration coupled with the use of interactive white boards and switches not only motivates all students but benefits children who are challenged with visual concerns as well as spatial organizational tasks. Using the NEO to provide initial computer instruction and create writing samples has allowed all students to become authors and illustrators in creating their very own books. Students who have excelled in reading and writing have created many books, those who are emergent readers and writers have also demonstrated their success in one book. A digital camera has captured many memories of special activities and events in our classroom this year. Photo albums have been created using Print Shop as well as Microsoft Power Point. Children have selected their favorite memory to comment on and share using a power point report, those children with language concerns can flip pages in the photo album and retell their favorite experiences using the visual cues to assist in sequencing and long term memory skills. Many more examples can be described to document the Principles of Universal Design as well as the use of the adaptive technology not only to enhance learning for special needs children but all the children in my inclusive class setting this school year. I am looking forward to sharing my results and developing additional lessons and materials to continue work in this area to develop a model classroom.

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2. Budget (revised)

A. Supplies/ Equipment

<i>Quantity</i>	<i>Item</i>	<i>Source</i>	<i>Cost</i>	<i>Total</i>
1	64" SMART Board – SB640	SMART Technologies Inc.	\$ 959.00	\$ 959.00
1	Wall Mount Rail System RS670	SMART Technologies Inc.	\$ 349.00	\$ 349.00
1	NEC Video Projector 2000 Lumens NEC VT470	SMART Technologies Inc.	\$ 875.00	\$ 875.00
1	Ceiling Projector Mount	Visual Technologies Inc.	\$ 121.00	\$ 121.00
1	Boardmaker 7.0 Win. M125 (update)	Mayer Johnson LLC	\$ 99.00	\$ 99.00
1	Writing with Symbols	Mayer Johnson LLC	\$19,00	\$19,00
12	Thumb Drive , 1Gb	CDW-G	\$6.40	\$76.80
				\$2498.80

B. Travel

No travel expenses were incurred for this project.

C. In-kind Contributions

- Classroom computers
- Printers/ printer supplies
- Microsoft Office suite 2000
- SMART Notebook software
- Kidspiration
- The Print Shop
- BOCES Copy Center
- Paper, pencils, crayons, markers
- Professional Development Resources
- Collegial support

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- EERC Coursework

7. Miscellaneous

3. Reporting Methods

A. Written Report

- Curriculum outline w/ lesson plans
- Data collection summary of evaluation methods
- Research articles
- Student work samples

B. Presentation

- Power Point
- Work Stations displaying activities outlined
- Student products