2007–2008 Summaries

Challenge Grant for the Gifted

Collaborative Curriculum Projects

This is one of many publications available through the Bureau of Exceptional Education and Student Services, Florida Department of Education, designed to assist school districts, state agencies that support educational programs, and parents in the provision of special programs for exceptional students. For additional information on this publication, or for a list of available publications, contact:

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Bureau of Exceptional Education and Student Services
Florida Department of Education
2008

Florida Department of Education
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Introduction

The Challenge Grant Program for the Gifted was established in 1981 to encourage public schools and districts to implement exemplary programs that appropriately challenge gifted students. Projects funded under this program are designed to improve the quality of existing programs, initiate a model or demonstration program, or expand student participation in existing programs. Project activities support the improvement and further development of provisions for enhanced and more rigorous curriculum and services for gifted students in a school, district, or group of districts.

Since 1981, funds for the Challenge Grant have been awarded on a competitive basis for local district projects that address identified priority areas. The purpose of this funding project was to support innovation to meet the instructional needs of gifted students.

The Sunshine State Standards identify complex classroom objectives for all students that likely require a redesign of instruction to ensure that the needs of the gifted learner are being met. Furthermore, gifted students often have deeper interest in a topic that may go beyond traditional classroom instruction or resources.

The Collaborative Curriculum Projects are intended to enhance the academic achievement of gifted students through the innovative redesign of instruction and collaboration. Collaboration is defined by the Merriam Webster On-line Dictionary as working jointly with others or together in an intellectual endeavor. This requires intellectual engagement beyond audience participation. It is expected that this collaboration will enhance instruction and thus the academic performance of the students by introducing new information, skills, talents, and perspectives to the instruction. It is expected that collaboration will go beyond traditional classroom methodologies such as pairing gifted students for research projects.

Collaboration may be coordinated with

- general education classrooms
- classrooms for students with disabilities
- other schools or school districts
- professionals in a particular field who are willing to become mentors and share expertise
- colleges or universities
- museums
- laboratories

These collaborative projects may involve face-to-face interaction or coordination through the use of technology, such as the Internet.

Funds are provided primarily for curriculum development, instructional planning, and the implementation of redesigned curriculum. However, funds may also be used for professional development (including release time for planning or training in an innovative or exemplary program) and resources not currently provided by the school district that are necessary to meet instructional objectives.

Grants of up to $10,000 were awarded for eight projects for the 2007-08 school year. Participation in this project is open to all school districts in the state of Florida. Funding is competitive and based on the recommendations of a review team. Consideration was given to geographical distribution throughout the state, with 20 percent of the funds allocated to school districts served by the Institute for Small and Rural Districts (ISRD) Project.

The purposes of this publication are to provide information to Florida school district administrators and teachers about the grant opportunity and share information about the grant projects that have been funded in the past.

Information about each project was submitted by the project director and is presented in the following format:

Project Rationale and Goals

Describe the need for the program

Project Implementation

What was taught? How was it taught? What learning experiences were provided? Clarify how this was a redesign on instruction.

A. Project Activities
B. Curriculum Content Focus
C. Sunshine State Standards Addressed
D. Instructional Methodology Used
E. Nature of the Collaboration

Describe the collaborative activities and their purpose and a roster of participants and personnel involved. Clearly describe the student population in terms of how many met gifted eligibility and at what grade levels. How many students took part? Describe the role of other participants.

Evaluation

How were students assessed? What were the results? What was the impact on participants? How was the project evaluated? What were the results? Identify why or why not outcomes were achieved. Describe any continuation plans.

A. Assessment of Student Performance
B. Project Evaluation

Dissemination

How was information about the project and the results disseminated? What was the audience?

Budget

Specify items in the program budget and how it was used.

Contact Information

For further information about the Collaborative Curriculum Challenge Grants Projects, please contact the Florida Department of Education, Bureau of Exceptional Education and Student Services, Program Development and Services, 601 Turlington Building, 325 West Gaines Street, Tallahassee, Florida 32399, Phone: (850) 245-0475, Fax (850) 245-0955.

Broward County School District

Project Title: *Meeting the Needs of Gifted Students and Their Teachers*

I. Project Rationale and Goals

A. Project Rationale

1. Teachers of the gifted in Broward County Public Schools (BCPS) have long expressed the need for assistance with management and application of differentiated instruction for their students who are gifted.
2. There is a critical shortage of gifted endorsed teachers with approximately 14 percent of gifted classrooms staffed by teachers who are not appropriately endorsed.

B. Project Goals

1. This project will deliver eight Learning Contracts designed by teachers of students who are gifted that can easily be integrated into a classroom with diverse student needs. Designed to be completed by the gifted student via a mixture of independent learning and instructional assistance, these Learning Contracts would be tailored to the Educational Plan (EP) of the student and serve to assist the teacher with the planning of the differentiated instruction required by the EP. The Learning Contracts provide students who are gifted with opportunities for advanced levels of achievement in an area of personal interest and are tailored to their EP. The Learning Contracts would require in-depth exploration of content, higher level thinking, and above-grade level content acquisition.
2. This project is intended to provide free gifted endorsement instruction and mentorship to five teachers at Arthur Ashe Middle School, a Broward County Public School (BCPS) that, at the beginning of this project, had no gifted endorsed teachers on staff.

II. Project Implementation

A. Project Activities

The program was originally designed to recruit teachers-in-training from Broward Community College's Educational Preparedness Institute (EPI) to become teachers of students who are gifted and work as mentors with underrepresented gifted students participating in the project while satisfying their field experience requirements. Free gifted endorsement courses were offered to all EPI participants in August and again in January. Unfortunately, no EPI participants were interested in participating in the project. The offer of free gifted endorsement and field experience in the gifted classroom will continue for all EPI participants. It is anticipated that two EPI participants may take part in the fall. As an alternative, this project provided free gifted endorsement instruction and mentorship to five teachers at Arthur Ashe Middle School, a BCPS school that, at beginning of this project, had no gifted endorsed teachers on staff.

B. Curriculum Content Focus

BCPS created four fourth-grade Learning Contracts and four fifth-grade Learning Contracts. Each interdisciplinary contract contains a library of projects (a minimum of 20 per learning contract) for students who are gifted and are designed around a central theme using an award-winning novel. Learning Contracts include projects incorporating authentic tasks, technology, higher-level thinking skills, student reflection/metacognition, and a variety of student products. Projects in each contract

are grouped according to the domains on the EP and are cross-referenced to academic content and the Florida Sunshine State Standards (SSS). Assessments for each project in each of the Learning Contracts are included. The curricula were piloted in 1 third-, 1 fourth- and 2 fifth-grade classrooms, impacting 4 *teachers* of students who are gifted and 38 *students* who are gifted (including 3 who are also twice exceptional and 2 who are also Limited English Proficient [LEP]) and 68 general education, high achieving students (3 who are also LEP). In addition, curricula were posted on the District's Broward Enterprise Education Portal (BEEP) for use by other teachers.

C. Sunshine State Standards Addressed

Sunshine State Standards addressed are listed within each Learning Contract. The standards encompass all core curricular areas in grades four and five.

At a minimum, however, each contract always addressed the following standards regardless of student choice of projects:

Language Arts

LA.A.1.2	uses the reading process effectively
LA.A.2.2	constructs meaning from a wide range of texts
LA.B.1.2	uses writing processes effectively
LA.B.2.2	writes to communicate ideas and information effectively
LA.D.1.2	understands the nature of language
LA.D.2.2	understands the power of language
LA.E.2.2	responds critically to fiction, nonfiction, poetry, and drama

D. Instructional Methodology Used

All curricula produced were piloted and revised according to student and teacher feedback. The final product met the project goal. Four integrated Learning Contracts appropriate for fourth-grade gifted students and four integrated Learning Contracts appropriate for fifth-grade gifted students were produced. Each of the eight Learning Contracts contains:

- 3-4 Language Arts Projects
- 3-4 Science Projects
- 3-4 Math Projects
- 3-4 Social Studies Projects
- 3 Social/Emotional Behavior Projects
- 3 Independent Functioning Projects
- A set of Assessments (to accompany each project)
- Correlation to Florida Sunshine State Standards for each project
- General Teacher Guidelines

E. Nature of the Collaboration

Other than those students and teachers listed on the table that follows, it is estimated that 200 teachers (some teachers of students who are gifted and some general education teachers) have downloaded the curricula. Student participation with the curricula is estimated to be in the thousands.

Participants	Number
Gifted students (includes 3 students with disabilities*)	38
General education students	68
*Students with disabilities (also included in gifted count)	[3]
Teachers of students who are gifted	7
General education teachers	5
Total number of participants	**118**

Curricular units were piloted with:

Third-grade gifted students	(10, including 2 twice exceptional)
Fourth-grade gifted students	(8)
Fifth-grade gifted students	(20, including 3 LEP)
Third-grade general education students	(10)
Fifth-grade general education students	(40)
Fourth-grade general education students	(18)

Personnel

Project Coordinator and Curriculum Writer	(2)
Curriculum writer/grade 5 teacher of gifted	(2)
Curriculum writer/grade 3 teacher of gifted	(1)
Curriculum writer/grade 2 teacher of gifted	(1)
Curriculum writer/grade 4 teacher of gifted	(1)
General education teachers recruited for gifted endorsement	(5)

III. Evaluation

A. Assessment of Student Performance

To infer the effectiveness of the Learning Contracts in facilitating gifted student achievement across demographics, EP progress of students participating in the pilot sample of fourth- and fifth-grade Learning Contracts was measured against student goals as outlined in the EP. All 38 students met their EP goals.

In addition, project students' FCAT reading achievement scores from the 2006–07 administration were compared to FCAT reading achievement scores from the 2007–08 administration to determine measurable growth in reading achievement that may have occurred as a result of exposure to the Learning Contracts. Only fourth- and fifth-grade pilot students were used for the analysis, as third-grade students do not have a previous year's FCAT score for comparison. Project students' reading achievement score growth was compared to demographically similar comparison gifted students who were not exposed to the Learning Contracts. While increases in Reading Developmental SSS scores were higher for the project students at both the fourth-and fifth-grade levels, results were not significant.

	Mean Reading SSS Developmental Scale Score 2006–07	Mean Reading SSS Developmental Scale Score 2007–08	Mean Increase Reading SSS Developmental Scale Score
Grade 4 Learning Contract students (n=26)	1623	1703	80
Grade 4 non-Learning Contract students (n=26)	1526	1602	76
Grade 5 Learning Contract students (n=60)	1872	1895	23
Grade 5 non-Learning Contract students (n=60)	1761	1782	21

All aspects of the project were frequently assessed on an ongoing basis via biweekly meetings of project personnel. Teachers utilizing the Learning Contracts participated in phone conferences (approximately biweekly) to provide feedback and solicit support when necessary. Arthur Ashe Middle School teachers received mentorship and support on an as needed basis.

B. Project Evaluation

All curricula produced were piloted and revised according to student and teacher feedback. The final product met the project goal. Four integrated Learning Contracts appropriate for fourth-grade gifted students, and four Learning Contracts for fifth-grade gifted students were produced.

Currently it is estimated that approximately 200 teachers have downloaded the curricula for their classroom use. Ultimately, the curricula products will impact teachers of the gifted and their students statewide, as the products are now available at no charge upon request and are being distributed to gifted coordinators in all Florida counties. The original project design called for feedback on the Learning Contracts by EPI mentors working toward gifted endorsement. This portion of the project was not completed since no EPI participants were interested in participating in the project.

In addition to the Learning Contracts described above and as a result of the feedback and evaluation process, a rubric for jurying future developed Learning Contracts was created to ensure quality products and to serve as a guide for teachers who develop their own Learning Contracts. The final product curricula package will be available via download to teachers statewide on the Broward County Public Schools' Web site. For a copy of the Learning Contracts and Jurying Rubric, contact information is provided under section IV on the following page.

Teachers from Arthur Ashe Middle School (a school with no gifted endorsed teachers) were encouraged to become teachers of the students who are gifted and were offered access to the district's gifted endorsement courses at no cost as well as the materials required to complete those courses and mentorship. Five Arthur Ashe Middle School teachers took advantage of the offer. Three of these teachers have since completed all five endorsement courses. Two of these teachers have been selected to teach in the district's premier, all gifted CITY Academy.

The original project design called for Broward Community College's EPI participants who were to join in the project (including a post-project focus group) to provide feedback regarding the curricula produced by the project, to hear a recruitment talk regarding becoming a gifted endorsed teacher, and

to schedule their free gifted endorsement courses. Individual reports of each teacher and his/her post-project (a) employment status related to gifted education and (b) enrollment in BCPS gifted endorsement coursework was to be reported. These items were not completed, as Arthur Ashe Middle School teachers were used in substitution for the EPI participants.

IV. Dissemination

The final curricular projects will be posted on the BCPS Web site. A presentation of the project and its results will be given at the annual Florida Association for the Gifted conference in 2008. CDs containing the narrative of the project and the curricula products will be distributed to district gifted program coordinators statewide via US mail by July 30, 2008. Gifted coordinators can then duplicate the materials for their districts or post the materials on their local Web sites. The narrative of the project and the curricula products will be provided to the State for consideration of inclusion in one of the state endorsement courses.

V. Budget

One hundred percent of the $10,000 project award was used to offset the salaries for teachers of the gifted who created the Learning Contracts. Each Learning Contract required an average of 100 hours of teacher research and writing. Teachers were paid their hourly rate. Estimated cost of producing the Learning Contracts was $49,600. Broward County Public Schools funded approximately $39,600 of the development of the Learning Contracts.

Gifted endorsement courses and required materials for those courses were offered to the teachers of Arthur Ashe Middle School. The value of the donated courses and materials, which were provided by the Department of Advanced Academic Programs of BCPS, was estimated to be $2,500.00.

VI. Contact Information

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Escambia County School District
PATS Center – Brentwood Middle School

Project Title: *Just Imagine: Gardening by Students (JIGS)*

I. Project Rationale and Goals

A. Project Rationale

The intent of this project is to broaden students' knowledge about global agriculture, foods, nutrition, energy, water, diversity, careers, and economics by creating gardens that are ecologically diverse, biologically sustainable, and economically productive. The project expects students to be engaged in learning life skills of communication, critical thinking, interpersonal intelligence, and leadership. Students will become researchers, engineers, designers, architects, scientists, and users of this multidisciplinary, multisensory learning experience.

Three pieces of evidence support the need for this project. First, students who are gifted, particularly students at the Program for Academically Talented Students (PATS) Center, are interested in the economic growth of Florida. Next to tourism, Florida's second largest industry is agriculture. According to the office of the Division of Agriculture, agriculture is changing from an industry based on production of a few major commodities for interstate trade to a diversified and responsive industry serving local needs as well as interstate and international markets. Current agricultural endeavors include flowers, vegetables and crops, nursery and greenhouse plants, landscape and turf management, eggs and livestock production, brush and grazing land management, and other related businesses. Therefore, to broaden students' knowledge of global agriculture and other areas in this industry, the Challenge Grant will pave the way for students to create school gardens through the *Just Imagine: Gardening by Students* (JIGS) project. This school garden (in and outside the classroom) will be a learning laboratory and a tool that can provide hands-on activities in a therapeutic environment.

Second, through the JIGS project, students will expand their scientific knowledge, use accelerated and advanced vocabulary, and create an ideal environment to connect with the community through different means—from growing tomato plants to creating a community composting site and from basic gardening to understanding how to interface technology in the study of horticulture. Science has been added in the Florida Comprehensive Assessment Test. Therefore, goal four of the PATS Center's School Improvement Plan calls for students to participate in science reinforcement activities in Earth and Life Science. The general education curriculum offers basic concepts in Life and Earth Science.

Finally, results of the latest student survey conducted by the PATS Center Student Steering Committee shows a strong interest in school gardening as a community and outreach program. The JIGS project will be a bridge between the school and the community. The community will view the PATS students as leaders, researchers, and compassionate young adults.

B. Project Goals

1. Ninety-five percent of participating students will increase their knowledge in Global agricultural endeavors through gardening. Agricultural endeavors include the production of flowers, vegetables, crops, nursery and greenhouse plants, and other businesses that support agriculture.

2. One hundred percent of participating students will conduct research, and discuss and implement their findings in a comprehensive and scientific manner. Students will be given opportunities to explore research, and to discuss and implement their findings about agriculture and school gardens.
3. Eighty-five percent of participating students will write proficiently in the technical writing format. The JIGS program will provide stimulating activities to capture students' interest in informational reading and technical writing**.**
4. Eighty percent of participating students will respect diversity. The project will develop respect and understanding of self and others, and through gardening will be the avenue to develop an appreciation for diversity.
5. One hundred percent of participating students will seek opportunities to participate in the arts. Gardening is an art, a means of expression, and a never-ending journey of discovery. JIGS is a combination of visual, graphic, and performing arts. The project provides opportunities to improve creative abilities in visual, graphic, and performing arts by becoming more familiar with the elements of creativity.

II. Project Implementation

A. Project Activities

Students were provided opportunities to:

- Conduct an independent study of plants, agricultural endeavors, or other topics of interest on gardening and biology
- Conduct a self-inventory of previous knowledge of agriculture, agricultural endeavors, and gardening
- Access technology in the PATS Center computer lab and in the classroom
- Exercise leadership opportunities through group work and learning interactions
- Apply the elements of creativity in garden art
- Identify their strengths and giftedness through their knowledge of multiple intelligences
- Connect with other schools engaged in school gardening
- Plan, design, build, and grow a school garden (organic, hydroponic, and regular gardening)
- Test and analyze soil for nutrition content; germinate seeds; plant seedlings
- Participate in field trips to gardens of master gardeners and 4-H gardens: observe the layout of gardens and types of gardens; observe, take notes, and record observations of plants, flowers, crops, etc.
- Interview master gardeners; record and report the interview
- Sketch, draw, and/or photograph plants, butterflies, etc.
- Produce note cards and posters
- Diagram and label life cycle of a butterfly; teach a friend
- Produce a video diary of student/class activities using digital cameras and other technology tools
- Start hydroponics gardening
- Study herbs: kinds, historic uses, country of origin
- Create, grow, and plant through hydroponics gardening in the GrowLab®
- Create and produce a simple newsletter
- Grow indoor/outdoor garden plants
- Design and build hanging plant baskets
- Engage in social, political, and environmental issues—advocacy, leadership, and gardening as a service learning and community project

- Celebrate success
- Write “thank you” notes to donors and supporters

The PATS Center offers courses of instruction, such as Florida in the Wild, Health and Wellness, Energy, and Design, at different time blocks every three years. A yearly student survey indicated that students’ interest in the economic growth of Florida and students’ interest in school gardening were a result of the survey of the PATS Student Steering Committee. Therefore, the JIGS project was conceived to differentiate and redesign instruction. The project used gardening as a tool to teach scientific terms and process; to improve students’ disposition toward agriculture, farming, and good foods and nutrition, especially eating fresh fruit and vegetables; and to strengthen established relationships with the community, organizations, and the school (affective domain). The idle land behind Mr. Rohan’s portable was transformed into a school garden where students learned to successfully raise plants and flowers, to improve academic achievement, and enjoy the beauty of nature.

A. Curriculum Content Focus

The JIGS project differentiated and redesigned curriculum activities using the Parallel Curriculum model and aligned curricula with the Florida Sunshine Standards, Just Read, Florida! and Florida State Board of Education 2004–2005 Strategic Plan to meet specified outcomes.

B. Sunshine State Standards Addressed

Science

SC.B.1.2.4	knows the many ways in which energy can be transformed from one type to another
SC.D.1.2.4	knows that the surface of the Earth is in a continuous state of change as waves, weather, and shifts of the land constantly change and produce many new features
SC.D.2.3	understands the need for protection of the natural systems on Earth
SC.F.1.2.3	knows that living things are different but share similar structures
SC.F.1.2.4	knows that similar cells form different kinds of structures
SC.F.1.3.6	knows that the cells with similar functions have similar structures, whereas those with different structures have different functions
SC.F.1.3.7	knows that behavior is a response to the environment and influences growth, development, maintenance, and reproduction
SC.F.1.4.8	knows that cell behavior can be affected by molecules from other parts of the organism or even from other organisms
SC.G.1.2.6	knows that organisms are growing, dying, and decaying and that new organisms are being produced from the materials of dead organisms
SC.H.1.2.5	knows that a model of something is different from the real thing but can be used to learn something about the real thing
SC.H.3.2.4	knows that through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas
S.C.H.3.3	understands that science, technology, and society are interwoven and interdependent

Mathematics

MA.B.3.2.1	solves real world problems involving estimates of measurements, including length, time, weight, temperature, money, perimeter, area, and volume

MA.B.4.3.1 uses estimation strategies to predict results and to check the reasonableness of results

MA.E.1.2.1 solves problems by generating, collecting, organizing, displaying, and analyzing data using histograms, bar graphs, circle graphs, line graphs, pictographs, and charts; create and use graphs, tables, and charts

MA.E.1.3.1 collects, organizes, and displays data in a variety or forms, including tables, line graphs, charts, and bar graphs, to determine how different ways of presenting data can lead to different interpretations

Language Arts

LA.A.1.2.3 uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships

LA.A.2.2.7 recognizes the use of comparison and contrast in a text

LA.D.2.3 understands the power of language

Social Studies

SS.B.2.3 understands the interactions of people and the physical environment

D. Instructional Methodology Used

The project was one of the courses offered at the PATS Center every twelve weeks. It blended many disciplines, such as mathematics, science, reading, business, economics, language arts, art education, career education, social studies, and history. The project utilized technology to develop advanced skills in reading, writing, creativity, and critical thinking. The enriched and challenging activities in the JIGS project provided avenues for students to acquire content, process ideas, and develop products. JIGS is a creative pursuit and an innovative approach to learning that will nurture and constantly arouse students' curiosity and will encourage discovery, exploration, and reflection of their learning to ultimately improve academic achievement

E. Nature of the Collaboration

The JIGS project was created in collaboration with the PATS Center, the University of Florida Extension Service, the National Gardening Association, the Manna Food Bank, the Bellingrath Garden Education Center, and the Home Depot Garden Center. All partners of the JIGS Project worked together in a joint intellectual effort in writing the curriculum; planning the calendar for implementation of activities and events; conducting training for teachers in the areas of technology; agriculture; and foods and nutrition by providing expanded activities during students' visits to the gardens of master gardeners; and by providing advice and expertise with regard to the project.

The University of Florida/Escambia Extension Service met and worked with Mr. Rohan on foods and nutrition education and provided him with teaching resources to use in the classroom.

The National Gardening Association (NGA) education and grant director provided consulting services by phone and was available for consultation as we implemented our gardening adventure, JIGS. The NGA has also offered classroom resources and networking opportunities with successful school gardening educators and experts in the field. The NGA director helped the Project Director to navigate the NGA Web site where resources for the project are located.

The Home Depot Gardening Center provided resources to the project at cost.

The Manna Food Bank's CEO is a master gardener. The student gardeners visited his organic garden and he personally took time to teach students all concepts about organic gardening, including advanced vocabulary. After the visit to his organic garden, we then proceeded to another site/garden where students applied their knowledge of setting up garden plots and urban gardening.

The PATS School Advisory Committee recognized the accomplishments of the project in its meetings.

The Office of Gifted Services of the Exceptional Students Education Department through the office of the gifted specialist monitored the progress of the project and was always available for consultation, if needed.

The Principal of Brentwood Middle School/PATS Center was very supportive of innovative ideas to enhance life skills and inculcate community service into the minds of young students. This project was an avenue to meet one of her priorities. However, there were major changes in the school district. Brentwood Middle School was closed and on its site now is Brown Barge Middle School. The principal of Brentwood Middle School/PATS is now the principal of a new middle school, the Woodham Middle School. The Principal of Brown Barge Middle School/PATS Center endorsed the project.

The Bellingrath Gardens in Theodore, Alabama made staff members available to provide various learning opportunities for PATS students through hands-on activities. Students analyzed soil composition, performed experiments, learned to identify and analyze types of plants, diagrammed the plant kingdom, and observed plant life in several greenhouses.

Personnel

There were unexpected changes in personnel due to closure and consolidation of schools for the 2007–2008 school year. Brentwood Middle School closed and the principal of Brentwood Middle School, at the time of the grant application, was assigned to a new school, Woodham Middle School. Brown Barge Middle School was relocated to the Brentwood Middle School facility. Staff involved in this project included the two project teachers, the project director, a gifted specialist, the newly relocated principal, the assistant principal, and the bookkeeper. Community members involved were the volunteer office of the Navy; Staff Sargeant Jay Seals and his team; master organic gardener and CEO of the Manna Food Bank, Mr. Evans; Education Outreach Coordinator of Bellingrath Gardens; School Advisory members; and numerous parents.

III. Evaluation

A. Assessment of Student Performance

Quantitative and Qualitative measurements

The project teacher together with his students developed these criteria for assessment of student performance: leadership, class participation, communication of information, creativity, and application of learned information and concepts. On the third time block, these criteria were correlated to the Sunshine State Standards and the Florida Curriculum Frameworks for Gifted Education. Eighty-seven percent of participating students showed improvements in levels of proficiencies within the traits of the goals.

Students interviewed their classmates about their favorite gardening activities, their least favorite activities, what they would have liked to do differently, and if they would like to recommend that gardening be offered again in the 2008–2009 school year. Their favorite gardening activities are (in ascending order) stock market simulation, sowing seeds, hydroponics gardening, using the internet for research, growing and studying herbs, planning and designing the garden, and field trips. The least favorite activities are watering plants in the heat, independent study, and sorting seeds. Some of the students' recommendations for improvement re more field trips, longer time for the class, and allowing a plot for each child to plant his/her favorite plant. They recommend continuation or expansion of gardening by students in the 2008–09 school year.

Students maintained reflective electronic and traditional journals recording their growth in knowledge, skills, and dispositions. The students used their reflective journals to make improvements in their daily tasks. One hundred percent of participating students improved their understanding of the plant kingdom; agricultural endeavors; hydroponics; organic gardening; traditional gardening; stock market; investments; mathematical concepts; and advanced vocabulary related to agriculture, gardening, economics, leadership, and teamwork.

Here are some of the comments from the journals:

> *It's sunny and about 40 degrees. There is little wind and pretty cold, too. We are planting sweet potatoes and carnations. I wonder if I would like to work outside in the cold to raise crops and to garden. We buy corn, tomatoes, roses, carnations, and other products which are important to the people's existence or to live.*
>
> *We made hanging flower baskets and planted impatience. We potted these plants and hung them on the fence. They grow in groups. We also planted them in mushroom compost. I do not have this opportunity in my regular school. I like to work and get dirty. It is fun.*
>
> *We planted the gourd seed by digging holes with my popsicle stick. Gourd is in the squash family. We planted them by the fence. They are warm weather plants. When they are grown, they are going to be apple green. Good information. I enjoyed planting and knowing how seeds germinate.*
>
> *We would have liked to have harvested the corn and the squash.*

B. Project Evaluation

Quantitative Measurements

Ninety-five percent of the students who registered for the class actively participated in the JIGS project based on teacher observation, class record, and journal entries. Students made significant progress in FCAT reading scores. A notable number of participating students progressed from level 3 to level 4 while others maintained their reading levels. Ninety-five percent of participating students increased their knowledge in global agricultural endeavors through gardening**.** One hundred percent of participating students who conducted research discussed and wrote their findings using an independent study guide and format. Eighty-five percent wrote plant and garden process directions using the technical writing format. Eighty percent of participating students showed respect for diversity by respecting their peers and group members, and one hundred percent participated in the arts through a poster design contest and garden art illustrations depicting the elements of creativity.

Participating students and teachers rated the project a success, 4 on the scale of 1–5.

Qualitative Measurements

The teacher conducted post assessments through tests that were designed by the teacher to determine the growth in knowledge of the concepts and principles. In advanced vocabulary,

75 percent of students showed improvements. The project teacher developed a rubric to assess students' progress using their work samples. The percent of students who scored on the satisfactory level was 86, while 10 percent scored on the satisfactory + level, and 4 percent scored on the excellent level.

The concepts are related to technology literacy, gardening, agriculture, agricultural endeavors, and mathematical concepts. A Garden Fair was planned in the original proposal; however, because of family medical problems that affected the project instructor, the fair was not held. Instead, a photographic bulletin board exhibition of project activities was posted in the hallways of the PATS Center. The bulletin and hallway exhibits attracted parents and students to the accomplishments of the project.

The students and the teachers maintained reflective journals about their weekly activities and discussed their concerns, such as outside temperature, group assignments, and ground preparation. The students maintained a reflective journal to record their growth in knowledge, skills, and dispositions. The students used their reflective data to make improvements in their daily tasks. The participating teacher surveyed their parents, teachers, students, and staff to determine the success of the project, the accomplishments of the goals and objectives, and suggestions on how subsequent programs can be improved. Parents rated the project a success; students would like to hold the garden fair next school year; teachers and staff would like to involve more parent and community volunteers to assist in weeding the garden.

IV. Dissemination

The project director sent a press release to all newspapers, TV stations, and the District's Public Relations Department about the PATS Center Challenge Grant award. The article was published in the Pensacola News Journal and in the PATS NEWS. Activities were posted on the National Gardening Association Web page. Photographs of activities were published in the newsletters sent home to parents and project partners. Students designed note cards and posters.

The project results were shared with parents, School Advisory Committee members, and the project partners, through projects, completed reports, and a month-long hallway bulletin board photo exhibition. Since the FLAG Conference for 2008 has been cancelled due to the National Association for Gifted conference in Tampa, brochures of the project will be available to attendees. The project director is in the process of writing an article and a viewpoint about the project for publication in the *Florida Education Association News* and *Pensacola News Journal*.

V. Budget

ITEMS	***COST***
Supplies to plan, design, plant, etc.	$ 300.00
Books and reference materials such as GrowLab series, seed collection, peanut bush kit, herb gardening kit, etc.	$ 800.00
Registration fee for stock market program	$ 300.00
Field Trips	$1,191.00
Curriculum planning	$ 686.32
Printing	$ 900.00
Postage	$ 400.00

Dissemination plan implementation	$ 844.00
Equipment, fixtures such as 3-tier garden, greenhouse, shelves, storing pots, composting kit, seed starter kit	$3,731.27
TOTAL	**$9,152.59**

VI. Contact Information

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Flagler County School District
Flagler Palm Coast High School

Project Title: Dig It: *A Quest in Archeological Findings*

I. Project Rationale and Goals

A. Project Rationale

This collaborative curriculum project, Dig It!, provided gifted students in grades 3-5, high school students, and archaeology students a hands-on approach in exploring, researching, and documenting archaeological finds through the use of the scientific method. Teachers used text sets developed by teachers of students who are gifted, an archaeologist, a scientist, parents, reading coaches, and other community mentors to implement pre-dig, during-dig, and post-dig cooperative learning activities, research activities, and lessons on the scientific method. Using the law of superposition, excavation units containing artifacts from a specific culture, or cultures that lived in a particular area of the world, were placed in a 27 x 50 foot dig box. Working in groups of 4 or 5, students used tools and methods to discover, record, and formulate hypotheses using the scientific method at each level of strata in a given unit.

B. Project Goals

The main goal of the project was to provide hands-on learning for students to explore, research, and document archaeological finds through the use of the scientific method. Students would develop collaborative and cooperative learning skills between themselves and community resources as well as foster cultural understanding and appreciation for cultures. Through the authentic archaeological tasks and projects, students engaged in critical and creative thinking, problem solving, and higher-order thinking skills.

II. Project Implementation

A. Project Activities

1. Developed text sets focused on the theme of archaeology that included fiction and non-fiction text representing a range of levels, genres, and cultures.
2. Implemented pre-dig curriculum and activities in the classrooms in collaboration with community experts, high school students, and mentors.
3. Prepared site for dig, which included dig box, relics, artifact, computer lab, microscopes, technology, etc.
4. Excavated of dig site, which included recording and journaling of artifacts by students.
5. Implemented culminating assessment projects/products generated by students with support from teachers, community mentors, parents, etc., which included project based learning, inquiry strategies, Socratic Seminars, portfolio assessment, and other authentic assessments.
6. Disseminated and marketed information about the project to other educators and the community through district and school newsletters, local newspapers, radio stations, school board meeting, archaeological journal, and school and community meetings.
7. Made text sets/units, lesson plans, materials, and dig site available to all elementary school teachers of grades 3–5, both gifted and general/special educational programs.
8. Curriculum Content Focus

Several standards in social studies, science, visual arts, mathematics, and language arts were addressed. Specific Objectives: Skills for Gifted Learners were also addressed with this project.

C. Sunshine State Standards Addressed

Social Studies

SS.A.1.2.1	understands how individuals, ideas, decisions, and events can influence history
SS.A.1.2.2	uses a variety of methods and sources to understand history (such as interpreting diaries, letters, newspapers; and reading maps and graphs) and knows the difference between primary and secondary sources
SS.A.1.2.3	understands broad categories of time in years, decades, and centuries
SS.A.2.2.1	knows the significant scientific and technological achievements of various societies (e.g., Mayan calendars)
SS.A.2.2.3	understands various aspects of family life, structures, and roles in different cultures and in many eras (e.g., pastoral and agrarian families of early civilizations, families of ancient times, and medieval families)
SS.B.1.2.1	uses maps, globes, charts, graphs, and other geographic tools including map keys and symbols to gather and interpret data and to draw conclusions about physical patterns
SS.B.1.2.2	knows how regions are constructed according to physical criteria and human criteria
SS.B.1.2.5	knows ways in which people view and relate to places and regions differently
SS.B.2.2.2	understands how the physical environment supports and constrains human activities
SS.B.2.2.3	understands how human activity affects the physical environment
SS.C.2.2.2	understands why personal responsibility (e.g., taking advantage of the opportunity to be educated) and civic responsibility (e.g., obeying the law and respecting the rights of others) are important

Science

SC.G.1.2.2	knows that living things compete in a climatic region with other living things and that structural adaptations make them fit for an environment
SC.G.2.2.2	knows that the size of a population is dependent upon the available resources within its community
SC.H.1.2.1	knows that it is important to keep accurate records and descriptions to provide information and clues on causes of discrepancies in repeated experiments
SC.H.1.2.2	knows that a successful method to explore the natural world is to observe and record, and then analyze and communicate the results
SC.H.1.2.3	knows that to work collaboratively, all team members should be free to reach, explain, and justify their own individual conclusions
SC.H.1.2.5	knows that a model of something is different from the real thing, but can be used to learn something about the real thing
SC.H.2.2.1	knows that natural events are often predictable and logical
SC.H.3.2.1	understands that people, alone or in groups, invent new tools to solve problems and do work that affects aspects of life outside of science

Visual Arts

VA.A.1.2.1	uses and organizes two-dimensional and three-dimensional media, techniques, tools, and processes to produce works of art that are derived from personal experience, observation, or imagination
VA.A.1.2.2	uses control in handling tools and materials in a safe and responsible manner
VA.B.1.2.1	understands that subject matter used to create unique works of art can come from personal experience, observation, imagination, and themes
VA.B.1.2.2	understands what makes different art media, techniques, and processes effective or ineffective in communicating various ideas
VA.C.1.2.1	understands the similarities and differences in works of art from a variety of sources
VA.C.1.2.2	understands how artists have used visual languages and symbol systems through time and across cultures
VA.D.1.2.2	uses different approaches to respond to and to judge various works of art
VA.E.1.2.3	understands the similarities and differences and the various contributions of galleries, studios, and museums

Mathematics

MA.A. 1.3.3	understands concrete and symbolic representations of whole numbers, fractions, decimals and percents in real world situations
MA.A.3.2.3	adds, subtracts, and multiplies whole numbers, decimals, and fractions, including mixed numbers, and divides whole numbers to solve real-world problems, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator
MA.A.4.2.1	uses and justifies different estimation strategies in a real-world problem situation and determines the reasonableness of results of calculations in a given problem situation
MA.B.1.2.1	uses concrete and graphic models to develop procedures for solving problems related to measurement, including length, weight, time, temperature, perimeter, area, volume, and angle
MA.B.1.2.2	solves real-world problems involving length, weight, perimeter, area, capacity, volume, time, temperature, and angles
MA.B.2.2.2	selects and uses appropriate standard and nonstandard units of measurement, according to type and size
MA.B.3.2.1	solves real-world problems involving estimates of measurements, including length, time, weight, temperature, money, perimeter, area, and volume
MA.B.4.2.1	determines which units of measurement, such as seconds, square inches, to use with answers to real-world problems
MA.B.4.2.2	selects and uses appropriate instruments and technology, including scales, rulers, thermometers, measuring cups, protractors, and gauges, to measure in real-world situations
MA.C.1.2.1	given a verbal description, draws and/or models two- and three-dimensional shapes and uses appropriate geometric vocabulary to write a description of a figure or a picture composed of geometric figures
MA.C.2.2.2	predicts, illustrates, and verifies which figures could result from a flip, slide, or turn of a given figure
MA.C.3.2.1	represents and applies a variety of strategies and geometric properties and formulas for two- and three-dimensional shapes to solve real-world and mathematical problems
MA.C.3.2.2	identifies and plots positive ordered pairs (whole numbers) in a rectangular coordinate system (graph)

MA.D.1.2.1 describes a wide variety of patterns and relationships through models, such as manipulatives, tables, graphs, and rules, using algebraic symbols.

MA.D.2.2.1 represents a given simple problem situation using diagrams, models, and symbolic expressions translated from verbal phrases, or verbal phrases translated from symbolic expressions, etc.

MA.E.1.2.1 solves problems by generating, collecting, organizing, displaying, and analyzing data using histograms, bar graphs, circle graphs, line graphs, pictographs, and charts

MA.E.1.2.3 analyzes real-world data to recognize patterns and relationships of the measures of central tendency using tables, charts, histograms, bar graphs, line graphs, pictographs, and circle graphs generated by appropriate technology, including calculators and computers

MA.E.2.2.1 uses models, such as tree diagrams, to display possible outcomes and to predict events

MA.E.3.2.1 designs experiments to answer class or personal questions, collects information, and interprets the results using statistics (range, mean, median, and mode) and pictographs, charts, bar graphs, circle graphs, and line graphs

MA.E.3.2.2 makes predictions and justifies reasoning

Language Arts

LA.A.1.2.1 uses a table of contents, index, headings, captions, illustrations, and major words to anticipate or predict content and purpose of a reading selection

LA.A.1.2.2 selects from a variety of simple strategies, including the use of phonics, word structure, context clues, self-questioning, confirming simple predictions, retelling, and using visual cues to identify words and construct meaning from various texts, illustrations, graphics, and charts

LA.A.1.2.4 clarifies understanding by rereading, self-correction, summarizing, checking other sources, and class or group discussion

LA.A.2.2.1 reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order

LA.A.2.2.5 reads and organizes information for a variety of purposes, including making a report, conducting interviews, taking a test, and performing an authentic task

LA.A.2.2.8 selects and uses a variety of appropriate reference materials, including multiple representations of information, such as maps, charts, and photos, to gather information for research projects

LA.B.1.2.1 prepares for writing by recording thoughts, focusing on a central idea, grouping related ideas, and identifying the purpose for writing

LA.B.2.2.4 uses electronic technology, including word-processing software and electronic encyclopedias, to create, revise, retrieve, and verify information

LA.B.2.2.5 creates narratives in which ideas, details and events are in logical order and relevant to the storyline

LA.B.2.2.5 creates narratives in which ideas, details, and events are in logical order and are relevant to the storyline

LA.C.1.2.1 listens and responds to a variety of oral presentations, such as stories, poems, skits, songs, personal accounts, informational speeches

LA.C.3.2.3 speaks for specific occasions, audiences, and purposes, including conversations, discussions, projects, and informational or imaginative presentations

LA.D.2.2.4 selects and uses appropriate technologies to enhance efficiency and effectiveness of communication

LA.E.2.2.5 forms his or her own ideas about what has been read in a literary text and uses specific information from the text to support these ideas

D. Instructional Methodology Used

Specific Objectives: Skills for Gifted Learners

Creativity

1.1. Demonstrate understanding of characteristics of the processes and results of creative thinking (e.g., fluency, flexibility, originality, elaboration)

1.3. Use creative-thinking processes effectively in initiating, carrying out, and completing tasks and projects

Higher-order Thinking

1.4. Demonstrate understanding of characteristics of the processes and results of higher-order thinking. Specify: analysis—whole to part; synthesis—part to whole; evaluation—comparing result; identifying patterns and trends; identifying relationships—causes and correlations

1.6. Use higher-order thinking processes effectively in initiating, carrying out, and completing tasks and projects

Problem Solving

1.7. Demonstrate understanding of characteristics of problem-solving strategies. Specify: brainstorming—identifying all solutions that come to mind, identifying steps—when a complicated process is involved, estimating—when numbers are involved, analyzing probability—when making predictions, matching consequences to actions—for cause and effect, troubleshooting—finding problems within a process, creative thinking—when multiple solutions are acceptable

1.8. Apply a general model for solving problems when completing tasks and projects (e.g., identify the problem, identify alternatives, evaluate alternative solutions, choose appropriately from a variety of techniques, implement solutions, evaluate results)

1.10. Analyze a problem, identifying its component elements, when completing tasks and projects (e.g., causes; effects; social culture; expectations; availability of time, space, and resources)

1.11. Differentiate between problems individuals can solve by themselves and those that require assistance from others; specify: determine the scope of the problem; determine the severity of the problem; evaluate how to accomplish a solution; determine if individual has the necessary knowledge, skills, and tools; seek assistance, if necessary

1.12. Select and use effective problem-solving strategies based on requirements of the situation

Identifying Solutions

1.15. Establish criteria for evaluating possible solutions to a problem to determine the likelihood of improving the situation when completing tasks and projects

1.16. Evaluate the possible solutions, using identified evaluation criteria, and determine preferred course of action when completing tasks and projects

Implementing a Solution

1.17. Choose to implement a preferred solution to a problem when completing tasks and projects

1.18. Establish and follow a procedure to monitor own progress in solving a problem and make adjustments as circumstances require.

1.19. Reflect on the problem-solving process when completing tasks and projects to analyze what worked, why it worked, what could be improved, and how the problem-solving process could be improved

Convey information, concepts, and ideas using appropriate and/or advanced language graphics, representations, styles, organization, and format

2.1. Use vocabulary that is specific to the discipline and topic to convey information, concepts, and ideas effectively

2.2. Use graphics to convey information, concepts, and ideas effectively (e.g., pictures, diagrams, models, concept maps, flow charts, organizational charts, tables, graphs, symbols, icons)

2.3. Use a style of communication that effectively reflects the content and purpose of the information, concepts, and ideas conveyed (e.g., narrative, descriptive, expository persuasive, dramatic, poetic)

2.5. Use an organizational structure that effectively represents the content and supports the intended purpose of the information, concepts, and ideas conveyed, specify: chronological, importance (most to least, least to most), categorical cause-effect

2.6. Use formatting that emphasizes the essential nature and the purpose of the information, concepts, and ideas conveyed (e.g., layout, use of illustrations, type, and size of fonts)

2.7 Use electronic tools to prepare written text and visuals (e.g., word processor, presentation software, desktop publishing software, printer)

Use effective leadership skills in specific situations (e.g., community service, school project)

4.1. Demonstrate understanding of knowledge and skills required for effective and successful participation in leadership roles (e.g., understanding the purpose and intent of the project, using strategies for effective management and organization, using conflict resolution and negotiation strategies, accessing broad and deep knowledge base, using effective speaking and listening skills, using self-control, exhibiting mutual respect, motivating and persuading members of the group, facilitating decision making)

4.2. Demonstrate understanding of different leadership styles and the impact of each style on group behavior and accomplishments

4.4. Demonstrate respect for the ideas, feelings, and abilities of others by ensuring opportunities for active participation by each member of the group when initiating, organizing, and carrying out tasks and projects

4.5. Demonstrate knowledge and understanding of the needs of diverse social, ethnic, economic, and gender groups when initiating, organizing, and carrying out tasks and projects

4.6. Establish reasonable group goals related to completion of project (e.g., set deadlines for each step in the process, assign roles to each member of the group, revise schedule as needed)

4.7. Use skills to keep group on task when initiating, organizing, and carrying out tasks and projects (e.g., establishing ground rules collaboratively, setting goals, planning to achieve goals according to a timeline, continuously monitoring progress toward goals, exchanging information, processing information, adhering to time schedules, staying on task, revising plans as needed)

4.8. Use skills to maintain group efforts when initiating, organizing, and carrying out tasks and projects (e.g., maintaining open communication, managing conflict, providing resources of time and supplies, being enthusiastic and positive complimenting contributions of others, sharing power, sharing resources)

4.11. Implement steps for group problem solving when initiating, organizing, and carrying out activities and projects

Setting Personal, Academic, and Career Goals

5. Set personal, academic, and career goals by developing realistic and systematic plans for achievement and make progress toward achieving these goals

5.3. Identify alternatives and choices available to reach personal, academic, or career goals (e.g., careers in technology, the arts, science, archaeology, technology)
5.6. Identify educational and experiential requirements for preferred career(s)

Operational Planning

6.3. Demonstrate understanding of purposes and benefits of planning tasks and projects (e.g., clarifying what is required, helping to stay on task, identify needed time and resources)
6.5. Identify, prioritize, and schedule task and project responsibilities (e.g., make a to-do list, list all tasks…)
6.7. Use appropriate technology to plan, monitor, and evaluate a task or project

Self-actualization

7.8. Identify understanding of own accomplishments and achievements
7.9 Express personal points of view, even when those opinions are contrary to the accepted ideas expressed by others
7.10. Respond receptively and critically to ideas that are new or divergent from one's own
7.11. Use coping skills to deal effectively with change (e.g., flexibility, openness, willingness to risk, tolerance of the unknown

E. Nature of the Collaboration

Community experts and members, parents, students, and school personnel collaborated to create lessons, activities, and the excavation site simulation/experience and mentoring. The support system for this project was remarkable. Experts in the field of archaeology, technology, parks and recreation, Mayan culture, and content areas came together to support the development and implementation of activities, goals accomplished, and program effectiveness. Listed are participants and collaborators:

Participants	Number
Gifted students	73
General education students	25
Secondary students	25
Administration	4
Faculty	3
Parents	20
Community mentors	4
Community experts	4
Total number of participants	**158**

III. Evaluation

A. Assessment of Student Performance

Teachers designed quizzes and tests, rubrics, charts, and spreadsheets with data based on the lessons and activities associated with the archaeological unit. Authentic Assessments included notebooks/journals of the dig, scientific method, protocol of dig site, classroom instruction, sketches of finds, reflections of exaction work/daily, team and individual portfolios, narrative writing, creative stories, poetry, writings, and songs, and technology created products. Students created oral presentations and publications using PowerPoint, Pod-Casts, I-movies and Digital Storytelling for presentations and dissemination of information on site and findings to community and parents.

B. Project Evaluation

The effectiveness of the project was determined by the reflections submitted by students, accuracy in culture identification based upon exaction site and findings using cross referencing, and acceptance or rejection of hypothesis based on the scientific method as recorded in daily journals and project summary forms.

Students completed an evaluation form (created by the site manager, archaeologists) on the project. The responses are compiled for future reference and documentation that will promote perpetuity of the project.

IV. Dissemination

The audience for the project was the community: parents, teachers, students and their families, and the community at large. A presentation was held in the auditorium complete with displays of artifacts discovered in the dig. Students put together presentations for the community. High School students documented this project and took it to Michigan State University as part of the Future Problem Solving Program, International Community Problem Solving component, and were ranked second internationally for this Dig It project.

V. Budget

ITEMS	***COST***
Archaeological tools, equipment, and supplies	$2,809.04
Archaeological cultural relics	$5,111.24
Curriculum materials (CD ROMS, videos, text sets)	$2,079.90
Miscellaneous classroom dig supplies	$607.70
TOTAL	**$10,607.88**

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Hillsborough County School District
Stewart Middle Magnet School

Project Title:
Project CRUISE: Curriculum Revision Using Integrated Student Exploration

I. Project Rationale and Goals

A. Project Rationale

Current legislation requires that no child be left behind. However, No Child Left Behind (NCLB 2001) is focused on closing the achievement gap for students who are one or more grade levels behind. Researchers have expressed great concern for what this legislation will do for students who are academically gifted (Mendoza, 2006). According to Grey (2004) over three million students who are gifted in the United States are underserved and underfunded. This leaves researchers inquiring about the accountability for education of gifted students (Mendoza). Mendoza conducted a qualitative study in the state of Colorado across four different school districts and found that gifted students are being ignored and overlooked. Furthermore, Mendoza found that teachers are being told to concentrate more on the students who are behind academically, thus leaving behind the students who are gifted. DeLacy (2004) noted that gifted children are not being provided with challenging materials, are missing accelerated courses, and that classroom instruction is focused on the average or below average students. The national movement toward closing the achievement gap leaves behind the students who are gifted, especially in funding initiatives.

Stewart Middle Magnet School, part of Hillsborough County Public Schools, is a Title 1 science, math and technology magnet located in the inner city of Tampa. Students who are gifted receive gifted services only in math and science even though they are scheduled together into the geography classroom. Essentially they use the same materials as regular education students for their geography class. The instructional delivery is text-based in the geography class. CRUISE provides gifted students with opportunities for advanced levels of achievement.

B. Project Goals

Four goals frame the project and align with the purpose of developing potential in our students who are gifted:

1. Students will improve their understanding of science and geography by combining information obtained from technology resources and interactions with scientists.
2. Students will improve their understanding of the world by combining information obtained from resources with higher level thinking skills to obtain a conceptual understanding of the world's geography.
3. Students will enhance reading and comprehension skills, research skills, written and oral communication skills, and student self-confidence.
4. Students will improve technology literacy in order to study the Earth from the unique perspective of space. Authentic learning experiences provide the means to goal attainment.

II. Project Implementation

This school-based project is to expand the revision of gifted curriculum to encompass grade six science, mathematics, and geography in an integrated exploration of authentic learning strategies.

Built upon the foundation of "Unlocking Earth's Secrets from Space," a funded 2005–2006 Challenge Grant Collaboration Curriculum Project, the outcomes of this initiative are to promote innovative instruction and improve the academic performance of students who are gifted, and to introduce new perspectives, technologies, information skills, and communication skills in the fields of science and geography.

Project CRUISE opens the portal to the scientific learning community and provides students who are gifted with opportunities for advanced levels of achievement. The theoretical basis for the project lies in the concept that the gifted classroom must be different from the regular classroom. If not, we risk losing those students.

A. Project Activities

Four activity components provided cohesion for the learning experiences not currently available to these students:

Component 1 - video conferencing, provided an opportunity for the gifted learners to interact with experts from all parts of the nation with NASA's Digital Learning Network as a focal point.
Component 2 - field studies, provided students with authentic learning experiences with advanced technology including the Global Positioning System (GPS), geologic landform models, photography, and ground-truthing using satellite images.
Component 3 - academic mentoring, presented the students with the opportunity to interact with professional adults (career leaders) who are experts in their field of geosciences. These experts lead teams of students in a research project on issues in science or geography. The students then mentored a grade-five gifted/advanced class at Dunbar Magnet Elementary School on the same topics.
Component 4 - colloquium participation, enabled outreach to our community and sharing of team research issues and results.

In the Earth Science Colloquium students and their career leaders merged at the Museum of Science and Industry (MOSI) to present their projects. Their projects were shared with students who are their grade five partners, parents, and the community.

Accelerated curriculum and authentic learning are the two theoretical approaches that form the foundation for the project design. Mentoring is one component of accelerated learning that is embedded in CRUISE. Students worked with professionals in specialized fields to provide advanced or rapid pacing and realistic application of instruction. Students were able to become mentors as they worked with younger students, providing multiple learning opportunities. CRUISE provided hands-on, minds-on authentic problem-solving activities as students participated in experiential learning to enable students to participate in an inquiry, resource-based, collaborative problem-solving environment.

Activities and content helped students visualize the world and see the interaction of the components. Students viewed Earth by studying aerial photographs, space shuttle photographs, and satellite images. They learned how remote sensing could help them identify ways in which people have changed the physical environment. Students were first taught about the difference between aerial photographs and digital images and the different technologies used to obtain digital images from space. Then aerial and digital images were compared to the actual topography of the land surrounding our school and at Crystal Springs.

Students were able to see where changes have occurred and also how to monitor future changes by use of the same tools. One form of change studies was in water bodies of Earth. The presence

of water in solid, liquid, and gaseous form is one of the primary characteristics that distinguish Earth from its neighbors in the Solar System. Students compared the amount of land and water on Earth, defined and located water bodies found on Earth, and identified changes that occur in these water bodies. An additional aspect of change was volcanic study. Students explored two ways volcanoes affect Earth: by directly threatening people and the environments adjacent to them, and by ejecting aerosols into the atmosphere. This concept was taught through three investigations where students explored issues of volcano hazards at different scales: from their local environment to the global effects of volcanic hazards at different scales and from their local environment to the global effects of volcanic aerosols on climate and aircraft safety.

B. Curriculum Content Focus

The study of human habitat selection was introduced through examining satellite images, identifying geographic landforms, and reading population density maps. Students were able to understand that the topography, landforms, and location of certain areas influence where people choose to live. Students studied satellite images to learn that the world's population is unevenly distributed, and they began to understand the environmental factors that influence this distribution. Roads and pathways were studied to determine movement of the populations. Students analyzed different kinds of paths and considered why paths are where they are and how they look from space. Students were taught that the human footprint on Earth's surface is barely perceptible in some areas, whereas its presence is very intense and highly noticeable in other areas. Through study of images from space, students were taught to look for significant environmental changes—such as deforestation—in different parts of the world.

Beyond the specifics of the content taught, students learned the availability and use of new tools for exploration; how current professionals use methods, such as remote sensing, to answer questions; and how to view data in terms of global issues. Some of the tools used were GPS devices, NASA satellite data, weather images, and EarthKAM (Earth Knowledge Acquired by Middle school students) imagery from the International Space Station.

C. Sunshine State Standards Addressed

Social Studies

SS.B.1.3.1	uses various map forms (including thematic maps) and other geographic representations, tools, and technologies to acquire, process, and report geographic information including patterns of land use, connections between places, and patterns and processes of migration and diffusion
SS.B.2.3.2	knows the human and physical characteristic of different places in the world and how these characteristics change over time
SS.B.2.3.6	understands the environmental consequences of people changing the physical environment in various world locations
SS.B.1.3.4	understands how factors such as culture and technology influence the perception of places and regions

Science

SC.D.1.3.1	knows that mechanical and chemical activities shape and reshape the Earth's land surface by eroding rock and soil in some areas and depositing them in other areas, sometimes in seasonal layers
SC.H.1.3.6	recognizes the scientific contributions that are made by individuals of diverse backgrounds, interests, talents, and motivations

SC.H.3.3.7 knows that computers speed up and extend peoples' ability to collect, sort, and analyze data; prepare research reports, and share data and ideas with others

Reading

LA.A.1.3.3 demonstrates consistent and effective use of interpersonal and academic vocabularies in reading, writing, listening, and speaking
LA.A.1.3.4 uses strategies to clarify meaning, such as re-reading, note taking, summarizing outlining, and writing a grade level-appropriate report
LA.A.2.1 constructs meaning from a wide range of texts
LA.A. 2.3.5 locates, organizes, and interprets written information for a variety of purposes, including classroom research, collaborative decision making, and performing a school or real-world task

Writing

LA.B.2.3 writes to communicate ideas and information effectively
LA.B.2.3.4 uses electronic technology, including databases and software to gather information and communicate new knowledge

Listening, Viewing, and Speaking

LA.C.1.3 uses listening strategies effectively
LA.C.1.3.1 listens and uses information gained for a variety of purposes, such as gaining information from interviews, following directions, and pursuing a personal interest
LA.C.1.3.4 uses responsive listening skills, including paraphrasing, summarizing, and asking questions for elaboration and clarification
LA.C.3.3 uses speaking strategies effectively
LA.C.3.3.2 asks questions and makes comments and observations that reflect understanding and application of content, processes, and experiences
LA.C.3.3.2 speaks for various occasions, audiences, and purposes, including conversations; discussions; projects; and informational, persuasive, or technical presentations

In addition to the Florida Sunshine State Standards, CRUISE addresses the **National Association of Gifted Children (NAGC) Gifted Program Standards**. The following are aligned principles and standards:

Guided Principle 2 – Gifted learners must be provided with career guidance services especially designed for their unique needs.
2.0 Exemplary Standard – Gifted learners should be provided with college and career guidance that is appropriately different and delivered earlier than typical programs.

Guided Principle 4 – Requisite resources and materials must be provided to support the efforts of gifted education programming.
4.0 Exemplary Standard – A diversity of resources (e.g., parent, community, vocational, etc.) should be available to support program operations.

Gifted Principle 5 – Learning opportunities for gifted learners must consist of a continuum of differentiated curricular options, instructional approaches, and resource materials.
5.1 Exemplary Standard – Differentiated educational program curricula for students pre-K–12 should be modified to provide learning experiences matched to students' interests, readiness, and learning style.

D. Instructional Methodology Used

Collaboration was used to increase academic achievement of students who are gifted. By partnering with the talents of government (National Oceanic and Atmospheric Association [NOAA], academia (University of South Florida's Institute for Marine Remote Sensing & University of Florida's Department of Astronomy), nonprofits (Earth Force, Crystal Springs, MOSI, and NASA enterprises), we were able to offer gifted learners authentic intellectual interaction and learning opportunities. These partnerships could inspire students to pursue career paths in STEM professions to which they might not otherwise have been exposed.

Representatives of this scientific community agreed to serve as career leaders for groups of students. These career leaders are accomplished professionals in their specific field of Earth science. Using their state-of-the-art technology, each career leader, along with the students, developed a topic of research. Each group and its career leader worked together to study and resolve a real world problem they had defined. In this scenario, students learned more information than could be presented in the regular classroom and then demonstrated integration of many skills.

E. Nature of the Collaboration

Our primary strategy was to foster collaboration between scientists and students to create activities that joined NASA content with emerging technologies and innovative use of those technologies to explore the Earth's geography with a perspective of looking down on Earth from space. This approach is a departure from the traditional method of teaching geography. The mentors were the keystones to the implementation of this program. Students worked with mentors throughout the school year. Mentor activities included the following:

1. NASA–An aerospace education specialist from NASA's Kennedy Space Center taught the students about remote sensing and compared and contrasted images of other regions of the world to Tampa.
2. NOAA–A NOAA flight director, whose specialty is El Nino, involved students with research and predictions of the global implications of El Nino as well as how El Nino affects us locally and regionally.
3. University of South Florida (USF)–Research associates of marine science led students in the study of how oceans affect geographic areas and the collection and analysis of data collected through various remote-sensing tools.
4. University of Florida (UF)–A UF associate professor of astronomy led students in an exploration of the universe and how technologies used to study the earth can be tests for technologies used to study the solar system.

Participants	Number
Sixth-grade gifted students	38
Sixth-grade general education students	40
Sixth-grade ESE students (also gifted)	5
Fifth-grade students (3 classes)	74
Gifted teachers	1
General education teachers (grade 6)	3
General education teachers (grade 5)	2
Career leaders	4
Total number of participants	**167**

Personnel:

Malcolm Gibbs, Project Director/Gifted Teacher
Heather Frost, Collaborating Teacher
Christina Williams, Collaborating Teacher

III. Evaluation

A. Assessment of Student Performance

Students were evaluated on their academic performance at the onset of the project using teacher-designed pretests to determine their knowledge of world geography, their knowledge of current technology used in the study of world geography, and their written communications skills in nonfiction writing. Periodic assessments were used to evaluate cooperative learning, data collection skills, and comprehension of world geography. These interim evaluations were used to improve skills of individual students and to evaluate the project as it progressed. After completion of the field studies, the students' skills were assessed using a posttest. Technology and communication skills were assessed with observational checklists during the course of the program with ongoing feedback from the teacher. Students used the same checklists for self-assessment.

At the conclusion of the project, the demonstration and presentation of their research project at the colloquium was used to assess and evaluate students' academic performance.

B. Project Evaluation

At the conclusion of the project, students' academic performance was evaluated by the demonstration and presentation of their research project at a colloquium. Student presentations were evidence of the academic growth and mastery of knowledge of world geography, knowledge related to the problem they researched in their Career Leader groups, and knowledge of current technology used in the study of world geography. In addition, student presentations at the colloquium evidenced growth in their written and verbal communication skills in non-fiction writing and speaking.

IV. Dissemination

Students presented their research project at a colloquium (see above).

V. Budget

The total program budget was $10,000, which was used for professional and technical services, transportation, supplies, equipment, dues, and fees.

VI. Contact Information

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Miami-Dade County School District
Sunset Elementary School

Project Title: *Outdoor Science Classroom*

I. Project Rationale and Goals

A. Project Rationale

Sunset Elementary School's project builds on schoolwide interest sparked by volunteer gardens to create an Outdoor Science Classroom that serves as a living laboratory for exploring science concepts related to environmental science and life science at the K–5 level. Comprising a series of separate project areas for each grade level, the Outdoor Science Classroom provides in-depth learning experiences for the school's children who are gifted while extending learning opportunities to the entire student population.

B. Project Goals

The overall goal of the project is to provide enhanced science learning experiences for students at Sunset Elementary School, in support of school-wide efforts to achieve and maintain excellence in all core academic areas. Specific objectives are:

1. To engage students enrolled in Sunset's integrated science and mathematics gifted program in deep, inquiry-based, age appropriate science learning opportunities
2. To extend the benefits of the Outdoor Science Classroom resource to all Sunset students
3. To use the Outdoor Science Classroom as a vehicle for engaging the broader community, including parents and children from other schools, in learning experiences that celebrate Sunset students' achievements

II. Project Implementation

A. Project Activities

Students were able to use advanced research skills, explore ideas, and express their newfound understanding through a variety of formats while solving real-world problems. For example, students developed and applied math skills through estimating the numbers of plants and species; they measured plant growth and graphed results. They developed science skills through defining and investigating research problems, observing and predicting, using reasoning skills, and drawing conclusions. They experimented with strawberries to extract their DNA; observed the effects of worms on soil; recorded mealworm and caterpillar populations; dissected flowers and plants; tested bird beaks; and analyzed pond water, soil, and composting alternatives.

Each grade level was given responsibility for developing and maintaining a specific area of the Outdoor Science Classroom. For example, kindergarten and first-grade students who are gifted were responsible for three raised-bed vegetable gardens. They planted and harvested carrots, peas, cabbage, lettuce, tomato, scallions, strawberries, peppers and squash. Second-grade students who are gifted researched and created a butterfly garden with host plants, which allowed them to witness the states of metamorphosis and explore the concept of life cycle development. Third-grade students who are gifted planted a sensory garden consisting of a variety of herbs, such as basil, lavender, peppermint, dill, lemon grass, rosemary, parsley, and cilantro. Fourth- and fifth-grade students who are gifted planted a native hardwood hammock area that included endangered species.

B. Curriculum Content Focus

The Outdoor Science Classroom provided a rich context for integrating science, mathematics, language arts, and social studies skills, deepening the quality of instruction and student engagement while developing students' critical thinking and reasoning skills in an ongoing basis. Engaging students through auditory, visual, tactile, and kinesthetic means, the Outdoor Science Classroom provided rich hands-on experiences that facilitated the communication of abstract concepts and ideas.

Math and science standards were covered by maintaining data logs on watering the vegetable garden, measuring weekly and monthly rates of growth of the different vegetables, and analyzing data to determine patterns. These data were displayed on an outdoor bulletin board so that all students, parents, and community members would see the rate of growth of the vegetables.

Language arts objectives were incorporated by reading stories related to vegetables and researching types of vegetables grown in Florida. Language arts skills were integrated throughout the project through research, related stories, student logs and journals, and oral presentations to classmates and the broader student body.

Social studies objectives were met by exploring distributions of plants and animals, comparing local species and climates to those in other cities and countries, and connecting with the students' diverse cultural backgrounds and the school's overall international studies theme. The incorporation of a weather station allowed the students to learn about weather changes from day to day and month to month, weather's effects on our daily lives, and its influence on plants and animals in the Outdoor Science Classroom.

The Outdoor Science Classroom has provided and will continue to provide opportunities of redesign of instruction by encouraging scientific reasoning, discovery and questioning of assumptions, acquisition of scientific concepts, collaborative learning, dialogical thinking, critical thinking and listening, independence of thought, intellectual curiosity, and perseverance among Sunset students.

C. Sunshine State Standards Addressed

Science

SC.B.1.2	recognizes that energy may be changed in form with varying efficiency
SC.B.2.2	understands the interaction of matter and energy
SC.F.1.2	describes patterns of structure and function in living things
SC.F.2.2	understands the process and importance of genetic diversity
SC.G.1.2	understands the competitive, interdependent, cyclic nature of living things in the environment
SC.G.2.2	understands the consequences of using limited natural resources
SC.H.3.2	understands that science, technology, and society are interwoven and interdependent

Mathematics

MA.B.1.2	measures quantities in the real world and uses the measures to solve problems
MA.B.2.2	compares, contrasts, and converts within systems of measurement (both standard/nonstandard and metric/customary)
MA.B.3.2	estimates measurements in real-world problem situations
MA.E.1.2	understands and uses the tools of data analysis for managing information

D. Instructional Methodology Used

Together, we all contributed to the construction and eco-balance of a natural pond, which is home to fish, aquatic plants, coral rock, tadpoles, dragonflies, a turtle, and water striders. We used a hands-on science curriculum resource developed under a grant from the National Science Foundation and aimed at enhancing science learning opportunities for students in grades 3–5 in after school settings.

E. Nature of the Collaboration

Our partners in collaboration were our parent volunteers, SEED (Sunset Elementary Enrichment Drive Foundation), Sunset's PTA, the Miami Museum of Science and MAST (Maritime and Science Technology) Academy. Together, our teachers of students who are gifted and our parent volunteers brainstormed solutions to obstacles that surfaced throughout the project. They worked with us and provided hands-on knowledge and expertise to our project. SEED and the PTA worked with us to create opportunities for donations for additional funds needed to complete the project. Teachers of students who are gifted attended a workshop at the Miami Museum of Science to work collaboratively in the implementation of the Museum of Science's APEX Science Curriculum Modules. These modules were donated to the Outdoor Science Classroom Project to engage our students in interwoven concepts based on real-life situations, imagery, and application, and to deepen our students' environmental awareness. The teaching team participated in in-depth discussions and planned lessons, activities, and field trips. MAST Academy organized field trips that directly related to the Outdoor Science Classroom Project for gifted third, fourth and fifth graders, such as Miami River Run, Birds of the Everglades, WOW (Weather on Wheels), and Land SHARC (Science Hands-On And Related Careers).

Participants

Participants	Number
Gifted students	375
General education students	40
ESE students	5
Administrators	3
*Community members	8
Gifted teachers	7
General education teachers (grade 5)	1
ESE teachers	1
Parents: volunteer day	40
Other participants, alumni volunteers, and speaker	3
Total number of participants	**483**

* Community members are several members from the following eight organizations: Shell Lumber, D-sign Shop, South Florida Garden Center, Miami Museum of Science, SEED Foundation, PTA, MAST Academy, and Fairchild Tropical Gardens.

Three hundred seventy-five first- through fifth-grade gifted students participated in the design and construction of the Outdoor Science Classroom. In addition, forty-five students from the general student body actively participated in the project. Our students who are gifted guided them through our trail to explore the natural wonders of the Outside Science Classroom.

Personnel

Sunset's teachers of students who are gifted have been involved in the project at various levels. Maria Sandoval, the project director, led the deployment of the Outdoor Science Classroom project, managing all tasks, making purchases and coordinating volunteer days. Teachers of students who are gifted—Maria Sandoval, Diana Millares, Berna Hoytink, Martha Pou, Joan Soltz, Odalys Rodriguez, and Lisett Ramirez—created and planted one section of the garden with students in each of their classrooms. In addition, they all worked collaboratively in designing, clearing, laying out, and maintaining the Outdoor Science Classroom.

Outdoor Science Classroom components assigned to each member of the teacher team:

Outdoor Component	Teacher of Students who are Gifted
Raised vegetable bed, herb garden, bulletin board	Diana Millares, Berna Hoytink, Maria Sandoval, Lisett Ramirez
Butterfly garden	Diana Millares, Martha Pou, Berna Hoytink, Joan Soltz
Weather station, Web page, morning announcements	Maria Sandoval, Odalys Rodríguez,
Pond	Maria Sandoval, Diana Millares
Composting station	Maria Sandoval, Joan Soltz
Hardwood hammocks	Maria Sandoval, Odalys Rodríguez, Joan Soltz, Martha Pou

III. Evaluation

A. Assessment of Student Performance

Quantitative assessment

The students were assessed using a variety of instruments: teacher created pre- and posttests, math and science FCAT and SAT results, and observational assessments.

- Gifted students involved in the study and creation of the Outdoor Science Classroom completed a pretest to diagnose their environmental awareness and a posttest at the end of the school year. The results showed a 94 percent increase when comparing pre and post results.
- Gifted students were also given a pre- and posttest that focused on the concept of ecosystems. The results showed an increase in knowledge of 76 percent when comparing the pre and post results.
- Fifth-grade gifted students' science achievement level based on the FCAT, for students scoring three and above increased from 68 percent in 2007 to 77 percent for 2008.
- First- and second-grade gifted students' average percentile for the SAT-10 was 89.
- Third-grade gifted students' average FCAT score was a level 5, with a score of 409 on a scale from 100 to 500.
- Fourth-grade gifted students' math FCAT scores showed an average increase of 36 points from 2007 to 2008.
- Fifth-grade gifted students' math FCAT scores showed an average of 131 point increase from 2007 to 2008.

Observational assessment

The observations recorded during performance-based activities reflecteded a positive impact on student learning. The most significant observations were situations initiated by students, which describe a positive awareness of the environment and lifelong learning.

Some examples follow:

- Students discussing the food chain while observing pond life
- Students educating students about wildlife etiquette
- Students bringing family members to share their experiences and their pride
- Students expressing amazement as they count tadpoles in the pond and caterpillars in the garden
- Students exchanging viewpoints on processes
- Students picking up trash in an effort to preserve the Outdoor Science Classroom
- Students creating their own vegetable and butterfly gardens at home, inspired by their experiences in the Outdoor Science Classroom

The impact on student learning is apparent by the rise in our gifted students' SAT and FCAT scores collectively. We observed the most significant impact in the pre and post Environmental Awareness test, which yielded a 94 percent increase, as well as in the observational assessments performed on a continuous basis during student engagement and performance in the Outdoor Science Classroom.

B. Project Evaluation

The project was evaluated based on the impact it had on our students' academic achievement, environmental awareness, and our own ongoing observational assessments throughout the development of the project, as they learned and performed inquiries in a variety of settings. The evaluation results are listed under Program Evaluation.

It is the continuous goal of Sunset's teachers of students who are gifted and the students themselves to incorporate the Outdoor Science Classroom as a central component of integrated math and science learning. As immediate next steps, we will complete the greenhouse and create activity/inquiry centers at each outdoor component to invite neighboring schools to tour, explore, and learn in the Outdoor Science Classroom. Sunset will continue to enhance the gardens and pond while growing vegetables and composting and preserving our natural environment. In this way, Sunset will continue to create opportunities of redesigned instruction, collaborative learning, and environmental awareness for generations to come.

IV. Dissemination

An important outcome achieved by the Outdoor Science Classroom project was our entry in the Fairchild Challenge 2008 Pilot Program for Elementary Schools. The Fairchild Challenge is an environmental education outreach program designed to increase students' knowledge of and interest in the environment through a series of multidisciplinary challenges. The Fairchild Challenge options are environmental, project-based competitions and activities. These activities take place at the school, and then the best student entries are submitted to Fairchild Tropical Gardens to compete against outstanding student entries from other schools. Sunset won third place overall and received honorable mention for our Outdoor Science Classroom, along with a cash price of $250.00 to apply toward the Outdoor Science Classroom.

Furthermore, Sunset was recognized by Mayor Donald Slesnick of Coral Gables during the Arbor Day Celebration at Ingraham Park for the creation of our Outdoor Science Classroom.

V. Budget

The total program budget was $10,000.00. The allocation of funds was as follows:

ITEMS	***COST***
Labor: clearing of land and hole for pond	$1,200.00
Pond liner, stones, and pavers	$1,800.00
Native trees, plants, soil, and sand	$2,500.00
Gardening equipment	$ 700.00
Storage shed	$ 370.00
Infrastructure, tools, and lab equipment	$1,230.00
Weather station, composting, and benches	$1,600.00
Travel expenses for initial grant meeting	$ 600.00
Greenhouse and supplies	Donation
TOTAL	**$10,000.00**

VI. Contact Information

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Pinellas County School District
Walsingham Elementary School

Project Title: The WALDEN Pond Project
(Walsingham's Diverse Environmental Network)

I. Project Rationale and Goals

A. Project Rationale

Walsingham Elementary School is a Title I school providing PreK–5 general education and exceptional education (specific learning disabilities, varying exceptionalities, ESOL, speech/language, physical and occupational therapy). For the first time in 30 years, the resource program for students who are gifted was placed at Walsingham and designed to serve gifted students from 4 elementary schools. As a result, these students were often perceived as "outsiders" by the pre-existing school population. Additionally, due to a lack of exposure to gifted programming, many of the school's teachers and students had a limited understanding and appreciation for the needs of students who are gifted in terms of their social and emotional interactions with peers who are not gifted. This project addressed student interactions through many collaborative activities.

Research suggests that gifted students learn best in a receptive, nonjudgmental, student-centered environment that encourages inquiry and independence; includes a wide variety of materials; provides some physical movement; is generally complex; and connects the school experience with the greater world (Berger, ERIC Digest, 1991). This project provided the real-world, hands-on, problem-solving experience that marks the characteristic needs of gifted learners and underscores best practices for science learning, i.e., that which is learner-centered, not teacher-centered.

B. Project Goals

Project goals were:
- To increase literacy skills among participating students
- To develop competence among participating students as collaborative learners
- To improve scientific skills among participating students
- To develop competence among participating students as technology users

II. Project Implementation

A. Project Activities

Through the creation of student learning packets aligned to the Sunshine State Standards, students cycled through the different environmental stages of the outdoor classroom and explored Florida wildlife, pond activities on water quality and habitats, native plants, and butterfly gardens. Students were provided various tools (binoculars, field guides, test kits, GPS devices) to map locations and engage learners within this cooperative/collaborative instructional model.

B. Curriculum Content Focus

Content focused on language arts, mathematics, and science.
Lesson Titles:

- Plants I: Main Idea/Details
- Plants II: Main Idea/Details
- Butterflies: Main Idea/Details
- Bats: Main Idea/Details
- Pollinator Pals: Why Do Plants Have Flowers?
- Can Your Tell? Author's Purpose
- Plants: Fact or Opinion
- Butterflies: Fact or Opinion
- Frogs: Fact or Opinion
- Moth and Butterfly
- Insects
- Amphibians and Adaptations
- Using Reference Materials: Diagrams
- Bats and Reptiles and Moths…Oh My!
- Writing an "Origin Story"
- Testing! Testing! Finding the Answers
- Plants: Cause and Effect
- Estimation Strategies: Can You Do It?
- Measurement: Learning Metric, Area, and Tally Tables
- Addition, Subtraction, and Multiplication Too!
- Graphing: Why Is It Important?
- Pond Life
- Hurricanes and Tornadoes
- Records and Descriptions
- Observations
- Pond Science
- Plants
- Changing Earth
- Recycling
- Comparisons

C. Sunshine State Standards Addressed

Language Arts

LA.A.2.2.1	reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order
LA.A.2.2.2	identifies the author's purpose in a simple text
LA.A.2.2.5	reads and organizes information for a variety of purposes, including making a report, conducting interviews, taking a test, and performing an authentic task
LA.A.2.2.6	recognizes the difference between fact and opinion presented in a text
LA.A.2.2.7	recognizes the use of comparison and contrast in a text
LA.A.2.2.8	selects and uses a variety of appropriate reference materials, including multiple representations of information, such as maps, charts and photos, to gather information for research projects
LA.E.2.2.1	recognizes cause-and-effect relationships in literary texts

Mathematics

MA.A.3.2.2	selects the appropriate operation to solve specific problems involving addition, subtraction, and multiplication of whole numbers, decimals, and fractions, and division of whole numbers
MA.A.4.2.1	uses and justifies different estimation strategies in a real-world problem situation and determines the reasonableness of results of calculations in a given problem situation
MA.B.3.2.1	solves real-world problems involving estimates of measurements including length, time, weight, temperature, money, perimeter, area, and volume
MA.D.2.2.2	uses informal methods, such as physical models and graphs, to solve real-world problems involving equations and inequalities

Science

SC.A.1.2.1	determines that the properties of materials (e.g., density and volume) can be compared and measured (e.g., using rulers, balances, and thermometers)
SC.D.1.2.4	knows that the surface of the Earth is in a continuous state of change as waves, weather, and shifts of the land constantly change and produce many new features
SC.D.2.2.1	knows that using, recycling, and reducing the use of natural resources improve and protect the quality of life
SC.G.1.2.3	knows that green plants use carbon dioxide, water, and sunlight to turn minerals and nutrients into food for growth, maintenance, and reproduction
SC.H.1.2.1	knows that it is important to keep accurate records and descriptions to provide information and clues on causes of discrepancies in repeated experiments
SC.H.1.2.2	knows that a successful method to explore the natural world is to observe and record, and then analyze and communicate the results
SC.H.1.2.3	knows that to work collaboratively, all team members should be free to reach, explain, and justify their own individual conclusions

D. Instructional Methodology Used

A school-based team of four teachers, using a backward design (instructional frameworks) model, identified key skills that were used in the field, then developed and disseminated these activity packs.

E. Nature of the Collaboration

1. Expert/mentor to learner: through field study, 4-H curriculum, speakers, and material resources
2. Expert/mentor to faculty: through professional development training, and project advisory group
3. Teacher to teacher: through curriculum design and social interaction needs for students who are gifted and students who are not gifted
4. Peer mentor to learner: through students who are gifted introducing research and technology to general education groups

Participants:

Participants	Number
Gifted students	77
General education students	230
ESE students	19
Administrators	2
*Community members (see Community personnel below)	8
Gifted teachers	1
General education teachers (grade 5)	12
ESE teachers besides gifted	4
Parents	6
Other participants	3
Total number of participants	**362**

Fifty-one students who are gifted were originally targeted to be involved in the project. These students spanned grades 3 through 5. An additional 26 students (grades 1–5) met eligibility in the 2007–08 school year and were included in the project as well. General education students (grades K–5) were included in the outdoor field activities.

School personnel

- Four-teacher team redesigned the science curriculum to create student packets for field use.
- Primary lead teacher was responsible for project expenditures, evaluation, and implementation.
- Co-lead teacher was responsible for project activities in maintaining garden and scheduling classes.
- School administrators supervised project activities for alignment with district policies and procedures.

***Community personnel**

- Florida Cooperative Extension Service provided 4-H curriculum and field trips.
- Florida Bat Conservancy provided speakers, bat house design, and site plan.
- Brooker Creek Environmental Center provided training and served as a community resource.

III. Evaluation

A. Assessment of Student Performance

Initial student assessment for this project was measured in science pre- and posttest results. For intermediate students, grades 3 through 5 district science assessment tests reflected the format and content of an FCAT Science test with multiple-choice, short response, and extended response items. The cycle one summative assessment compared to the cycle three assessment revealed 100 percent of the students meeting expectations, and 13 percent of that group exceeding science expectations. Thirty-three percent of students at the fifth-grade level who are gifted earned a level 4 or 5 on the science portion of the 2007–08 state FCAT test, while forty-two percent scored at a level 3. As science and reading assessments are administered throughout the school year, we can anticipate improvement and increases in the number of high performing students.

B. Project Evaluation

WALDEN Pond was a successful project that had a positive effect on the overall school climate. It sparked students' interest in environmental issues as measured by teacher utilization of student activity packs and teacher feedback. Student-made recycling projects were displayed throughout the school's media center. Technology was enhanced through the use of the Renzulli Learning Program, logging in over 1266 resources visited. Geochaching activities, with the use of the handheld student Global Positioning Systems (GPS) devices, increased gifted students' skills in using these devices to understand latitude and longitude by student mapping products and pond site integration. Plans are to continue using the outdoor classroom and seek additional community funding to help develop boardwalks and various structures within the enclosed acreage.

IV. Dissemination

The audience was composed of the school faculty, parents, and district-wide personnel for students who are gifted. The WALDEN Pond project shared two tangible products with the school faculty and others district-wide at faculty meetings and through a Web-based newsletter:

- A manual was written on the collaborative efforts of a four-member team in the redesign of the environmental curriculum. This exhibit is central to teacher access and use. Nineteen reproducible activities are included.
- A color brochure depicting photographs and project information is provided at the school site. This same brochure was electronically provided to community partners in the project. Parents and visitors may elect to pick up a brochure during any visit.

V. Budget

ITEMS	***COST***
Non-capitalized equipment and audiovisuals (picnic tables, signs, 10 handheld GPS, camcorder)	$3,282.25
Shed facility	$2,645.00
Supplies (books, field guides, day packs, binoculars, test kits, office supplies)	$1,789.70
Curriculum stipends for teachers (4) (redesign of science curriculum)	$1,466.37
Technology training and travel	$ 509.64
Student field trips (3)	$ 278.00
TOTAL	**$9,970.96**

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St. Lucie County School District
Lincoln Park Academy

Project Title: *A Tech-No Adventure*

I. Project Rationale and Goals

A. Project Rationale

The Challenge Grant project, "A Tech-No Adventure," served to broaden the instructional experiences in the use of technology for seventh graders who are gifted. The project provided authentic hands-on instruction using state-of-the-art technology at Indian River Community College (IRCC). Through teamwork, students produced a DVD to serve as an advertising and recruitment tool for their school, Lincoln Park Academy. Because it's an older school, it is not sufficiently wired for technology and advanced equipment and computer software. The project also served to expand the students' knowledge of careers in advertising and video production, which was of great interest to many of them.

B. Project Goals

Students will demonstrate knowledge of the following tasks with at least 90 percent mastery as measured by teacher-made tests, teacher observation, and a posttest:

- Analyze and discuss the history and purpose of advertising, and compare and contrast today's advertising to advertising in the past.
- Demonstrate an understanding of basic vocabulary and language regularly used in advertising.

Students will demonstrate knowledge of the following tasks with at least 90 percent mastery as measured by teacher-made tests, teacher observation, and a posttest:

- Use critical thinking and analysis to demonstrate an understanding of consumers' perceptions of advertising.
- Plan and design a media campaign as a team.
- Apply technology skills to research, gather, and organize information that will be of interest to their target audience.
- Write clear and concise language that ensures understanding of the message to be conveyed to the target audience.

Students will demonstrate knowledge of the following tasks with at least 90 percent mastery as measured by teacher-made tests, teacher observation, and a posttest:

- Demonstrate proficiency in the use of technology, software and equipment used in professional advertising.
- Use technology to problem-solve, research, gather, and produce a storyboard.
- Demonstrate an understanding of "marketing mix," and develop a budget for marketing their product.
- Develop an advertising and marketing campaign by designing a series of promotional information spots and strategically placing them to present a unified informational message.

Students will edit and present a final advertising product of eight minutes or less.

II. Project Implementation

A. Project Activities

- Creating and following a syllabus from the college, which gave students the breakdown of the project and timelines
- Establishing collaboration between school district and the college
- Providing hands-on activities as the students developed their projects
- Coordinating a training and meeting with the teachers from the school and IRCC professors
- Providing students with training in using Microsoft® products: MovieMaker and PowerPoint®
- Providing students opportunities to learn how to use the digital cameras to get the pictures they wanted for their ending product
- Providing instruction for seventh graders on a college campus with state-of-the-art digital tools
- Providing classes taught by college professors
- Enabling blogs between professors and students
- Enabling blogs between students to plan and put together project
- Providing parent portal to get feedback from parents throughout the project
- Enabling students to work in teams to complete the project
- Enabling students who were team leaders and the other students to learn about leadership skills throughout the project

B. Curriculum Content Focus

The focus for the project was on developing state-of-the-art technology skills.

C. Sunshine State Standards Addressed

Language Arts

LA.D.2.3.1	selects language that shapes reactions, perceptions, and beliefs
LA.D.2.3.4	understands how the multiple media tools of graphics, pictures, color, motion, and music can enhance communication in television, film, radio, and advertising
LA.D.2.3.5	incorporates audiovisual aids in presentations
LA.D.2.3.6	understands specific ways that mass media can potentially enhance or manipulate information

D. Instructional Methodology Used

The project involved speaking, oral communication, writing, composing, reading interpreting and analyzing. This project was developed to enhance many of the reading initiatives as the students moved through the project and developed their finished product. To do the research for their group section of the project the students had to read and sift through information to gain the needed facts and data for their section of the project. The students were constantly doing rewrites to edit their projects. They were forced to interpret the information from many different viewpoints to make sure their audience had a clear understanding of the information they were presenting. Teams had to analyze the data continually to make sure information was accurate and relevant to their overall section of the presentation. During previews of each section of the project, students from each team were asked to defend their section of the project in front of the group. Students increased their technology literacy throughout the implementation of this project.

E. Nature of the Collaboration

Participants

Participants	Number
Gifted students (grade 7)	94
Administrators	2
Community members	2
Gifted teachers	4
General education teachers	1
Other participants	4
Total number of participants	**107**

Personnel

Candace Stone, Assistant Principal in charge of Middle School Curriculum
Lane Johnson, Math Instructor for seventh grade
Joseph Grazioli, Science Instructor (gifted endorsed)
Gloria Bentley, Exceptional Education Department Chair
Alan Mathison, Computer Science Instructor
Carol Kuhn, Social Studies Instructor
Ryan Weed, Language Arts Instructor (gifted endorsed)
Chuck Kitzmiller, IRCC Professor
Mike Peliteria, IRCC Instructor

III. Evaluation

A. Assessment of Student Performance

Students were given a pretest and posttest and improved their knowledge 100 percent from the pretest to the posttest. Students achieved between 90 and 100 percent student mastery of the project goals. Each part of the project was graded using a rubric.

B. Project Evaluation

The students are to be commended for their work on this project. They gained an awareness of the need to always present their best work and that synergy really works in team dynamics. All students were very engaged in this project and proud of their accomplishments. The evaluations of the students and their teams were very high.

Another grant was written by IRCC to continue this project as a summer program, which would allow the students the opportunity to learn about various careers available that are immersed in technology. This grant was not approved. However, as they transition into eighth grade, students will be able to apply the skills they learned and use the information in their new classes. Through training they received, the eighth grade teachers at the school are well aware of the skills the students have developed, and they will expect students to use those skills as they present information in their classes during the coming school year.

IV. Dissemination

Information about the project and its results were disseminated by the following ways and means:

- Holding a closing event with the parents and school personnel in attendance
- Playing the ending ceremony on channel 13 (we are currently working on editing the ending)
- Inviting new media to the closing ceremony
- Making discs of the project to be shared with school choice office
- Placing the presentation on the school's Web site
- Securing an article in the newspaper
- Securing an article in the ESE newsletter
- Presenting the project as a "best practice" at the State of Florida Career and Technical Education conference
- Presenting the project, which was selected as a "best practice," at the National Career and Technical Education Conference in the fall
- Sharing the final product with business partners who were community sponsors of the grant

V. Budget

ITEMS	***COST***
Dues and fees to IRCC	$ 9,182.00
Supplies	$ 86.98
Travel	$ 220.22
Non-capitalized funds	$ 510.00
TOTAL	**$10,000.00**

(Note: two students didn't meet residency requirements for IRCC and had to pay out-of-state fees.)

VI. Contact Information

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Suwannee County School District
Suwannee Middle School

Project Title: *Bullpup Enterprises*

I. Project Rationale and Goals

A. Project Rationale

In the past, there was no prescribed curriculum for middle school students who were gifted in Suwannee County. Gifted instruction was limited to individual activities designed to strengthen cognitive skills, with no clearly stated goals, objectives, or stated outcomes. This project's intent was to provide a redesigned gifted curriculum that required students who are gifted to use higher level thinking and problem-solving skills to meet clearly stated outcomes and objectives while learning authentic business skills.

B. Project Goals

The main purpose of this grant for students who are gifted was to increase their understanding of various careers while gaining real-life business experiences.

Other goals included:

- Gifted students will use higher-level thinking and problem-solving skills to meet clearly stated outcomes and objectives.
- Gifted students will learn authentic business skills and will use these skills to publish the school newspaper, the *Bullpup Press.*
- Gifted students will show an improvement in their journalistic writing skills.
- Students will improve their organizational skills in order to meet newspaper deadlines.

II. Project Implementation

A. Project Activities

- Students took a field trip to the local newspaper where they were given a first-hand look at what it takes to publish a newspaper. They were taken through each department—from reporting and advertising sales, to the distribution of the finished paper.
- Students wrote resumes and filled out job applications for the desired positions with the *Bullpup Press*. They created persuasive PowerPoint presentations to convince peers that they were the best person for the position.
- A local photographer provided instruction in photography. Students learned techniques for taking good photographs for publication and kept a portfolio of their work.
- Students completed a unit on journalism and writing for publication. Students developed sets of questions and helped with face-to-face and online interviews. Students then used the journalistic techniques they had learned to convert the interviews into interesting articles for publication.
- Students researched political cartoons and conducted an online interview with a professional cartoonist. They then created cartoons to publish in the newspaper.
- Students created brainstorming techniques to form a list of topics to include in the paper. They worked in cooperative groups to determine and develop the sections that the *Bullpup Press* would include.

- A local printing company provided instructional material and assistance in advertising sales and ad layout. The students created ads for the *Bullpup Press* and earned enough money from the project to continue the project in the 2008–09 school year. Ads were saved in a file for use next year if the same companies were to advertise in the future.
- The local newspaper and the high school journalism teacher instructed and assisted the students in the use of Adobe® InDesign to complete the layout of the newspaper. Students collected entries from the entire student body through the use of USB drives that were distributed to the participating teachers. The students selected the entries for each issue and placed them in the student-developed template.
- Students received instruction in effective editing techniques. They then used these techniques to edit the entries submitted for publication as well as the writing of their peers in the gifted class. Group editing using an LCD projector was done on class projects, giving the students an opportunity to brainstorm additions and corrections.
- The local bank provided instructional materials and support in the instruction of basic bookkeeping skills. Students managed the *Bullpup Press* business account, keeping track of all credits and debits. Students wrote receipts for all money collected and sent advertisers a receipt and a thank-you letter for supporting the *Bullpup Press*. The letter encouraged advertisers to place ads again next year.
- The *Bullpup Press* was included in the local newspaper as an insert. The gifted class received their newspapers the day before they were to be published in the community paper. The students sold the papers on campus for twenty-five cents per issue to generate additional funds for next year's publications.

B. Curriculum Content Focus

Varied sources, forms, and themes were incorporated to develop the curriculum for this project. The curriculum included field trips, student research, teacher instruction, and instruction and materials provided by local business partners. The main focus of the curriculum was to encourage students to experience the connection between academic and real-world disciplines, while getting first–hand experience provided by our business partners. Students worked to meet set goals that were part of the curriculum design, culminating in the publication and distribution of three issues of the school newspaper.

C. Sunshine State Standards Addressed

Language Arts

LA.A.1.3.3	demonstrates consistent and effective use of interpersonal and academic vocabularies in reading, writing, listening, and speaking
LA.A.1.3.4	uses strategies to clarify meaning, such as rereading, note taking, summarizing, outlining, and writing a grade level-appropriate report
LA.A.2.3.1	determines the main idea or essential message in a text and identifies relevant details and facts and patterns of organization
LA.A.2.3.3	recognizes logical, ethical, and emotional appeals in texts
LA.A.2.3.6	uses a variety of reference materials, including indexes, magazines, newspapers, and journals; and tools, including card catalogs and computer catalogs, to gather information for research topics

Writing

LA.B.1.3.1	organizes information before writing according to the type and purpose of writing
LA.B.2.3.1	writes text, notes, outlines, comments, and observations that demonstrate comprehension of content and experiences from a variety of media
LA.B.2.3.2	organizes information using alphabetical, chronological, and numerical systems
LA.B.2.3.3	selects and uses appropriate formats for writing, including narrative, persuasive, and expository formats, according to the intended audience, purpose, and occasion
LA.B.2.3.4	uses electronic technology, including databases and software, to gather information and communicate new knowledge

Listening, Viewing, and Speaking

LA.C.1.3.1	listens and uses information gained for a variety of purposes, such as gaining information from interviews, following directions, and pursuing personal interest
LA.C.1.3.3	uses responsive listening skills, including paraphrasing, summarizing, and asking questions for elaboration and clarification
LA.C.2.3.2	uses movement, placement, juxtaposition, gestures, silent periods, facial expressions, and other nonverbal cues to convey meaning to an audience
LA.C.3.3.1	understands how volume, stress, pacing, and pronunciation can positively or negatively affect an oral presentation
LA.C.3.3.2	asks questions and makes comments and observations that reflect understanding and application of content, processes, and experiences
LA.C.3.3.3	speaks for various occasions, audiences, and purposes, including conversations, discussions, projects, and informational, persuasive, or technical presentations

Language

LA.D.1.3.3	demonstrates an awareness of the difference between the use of English in formal and informal settings
LA.D.2.3.4	understands how the multiple media tools of graphics, pictures, color, motion, and music can enhance communication in television, film, radio, and advertising

Mathematics

MA.B.3.3.1	solves real-world and mathematical problems involving estimates of measurements, including length, time, weight/mass, temperature, money, perimeter, area, and volume, in either customary or metric units

International Society for Technology in Education (ISTE) National Technology Foundation Standards for Students

Standard 1.1	students demonstrate a sound understanding of the nature and operation of technology systems
Standard 1.2	students are proficient in the use of technology
Standard 2.3	students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity
Standard 3.1	students use technology tools to enhance learning, increase productivity, and promote creativity
Standard 4.2	students use a variety of media and formats to communicate information and ideas effectively to multiple audiences
Standard 5.2	students use technology tools to process data and report results

D. Instructional Methodology Used

- Differentiated Instruction
- Hands-on authentic learning
- Student-centered instruction
- Problem-based learning
- Inquiry approaches
- Independent research
- Cooperative learning groups
- Ongoing authentic assessment

E. Nature of the Collaboration

Collaboration was an essential component of this project. Professional development was conducted with the writing teachers to ensure consistency in the journalism curriculum. These teachers, in turn, assigned journalism projects to their students throughout the year to submit for publication. Students who are gifted worked closely with these teachers to collect, approve, and edit the material for publication. Community business partners (*Suwannee Democrat*, Suwannee Printing, Melissa Cameron Photography, First Federal Savings Bank, and Edward Jones Financial Services) provided instruction and support in the development of authentic workplace skills.

Skills included:

- Bookkeeping
- Photography
- Advertising sales
- Ad layout
- Graphic arts
- Interviewing and reporting
- Newspaper layout
- Creating cartoons
- Making investments

Participants	Number
Administrators	2
Gifted students (grades 6–8)	14
General education students (grades 6–8)	1,060
ESE students (grades 6–8)	128
Teachers of gifted students	1
General education teachers	5
Community members	7
High school teachers	1
Total number of participants	**1,218**

Personnel

- Five regular education language arts teachers who participated in the professional development and had their students contribute to the newspapers: two sixth-grade teachers, two seventh-grade teachers, and one eighth-grade teacher

- The teacher of students who are gifted who served as the project facilitator
- Two administrators who helped support the project and gave final content approval before the newspapers went to press.

III. Evaluation

A. Assessment of Student Performance

This project used various authentic and traditional assessments, providing both quantitative and qualitative data. Students who are gifted were evaluated on their academic performance using teacher-designed pretests and posttests. These tests provided measurable data to quantitatively assess the units (i.e., journalism, bookkeeping, advertising, photography, newspaper layout, and editing techniques) taught within the project.

Rubrics, used for teacher evaluations and student self-evaluations, measured group participation and cooperation, presentation skills, interviewing techniques, organizational skills, cartoon creation, and story content.

Students set learning goals at the onset of the project and kept portfolios of pretests and posttests, rubrics, and performance-based products. These portfolios allowed both students and the teacher to monitor progress toward their goals.

TEST RESULTS

Topic tested	Pretest	Post-test
Journalism	57	87
Bookkeeping	74	93
Advertising	70	98
Photography	67	98
Layout	48	94
Editing	87	89

All students who are gifted showed substantial gains in all areas tested after instruction and first-hand experiences provided by our business partners. These scores indicate measurable mastery of the following project goals:

- Gifted students will learn authentic business skills and will use these skills to publish the school newspaper, the *Bullpup Press.*
- Gifted students will show an improvement in their journalistic writing skills.

The group participation rubric was used after each group activity during the course of the project and indicated that group interaction and interpersonal skills increased substantially. The rating scale rubric was from one to five. The mean rating on the group participation rubric at the beginning of the project was 3.43 and increased by the end of the project to 4.36. The repeated use of the organizational skill rubric allowed students to see their weaknesses and work on improving those skills. By the end of the project, the mean rating had increased from 2.93 to 4.3, indicating mastery of the following goal:

- Students will improve their organizational skills in order to meet newspaper deadlines.

The story content rubric was used with each article that was written for the paper and was used as a self-improvement tool during both independent and group editing. The rubrics for presentation skills, interview techniques, and cartoon creativity were used to evaluate the culminating project at the end of each unit of study and reflected mastery for all participating students.

B. Project Evaluation

The success of the Bullpup Enterprises project was indicated by the successful publication of three issues of the *Bullpup Press* newspaper and generating enough funds through advertising and newspaper sales to continue the project next year. Student test scores and rubric ratings reflect a quantitative evaluation of success. However, the greatest success can be seen in the positive effect that the project had on the overall school climate. Writing for publication became a schoolwide incentive to write. It began with five participating teachers, and by the end of the project, we had to purchase additional USB (universal serial bus) drives to accommodate the entire student body. Students were proud of their work. They were taking home the publication containing their writing, thereby increasing family literacy as the students shared the newspaper with their families. We received positive feedback from staff, students, parents, and the community.

Using the funds generated this year, and with the continued commitment of our business partners, we are looking forward to continuing the project next year.

IV. Dissemination

Information about the project and its results were presented to the following:

- School Advisory Committee
- Faculty of Suwannee Middle School
- *Suwannee Democrat*, the local newspaper

V. Budget

ITEMS	***COST***
Instructional Inservice (to develop journalism curriculum and train participating teachers)	$ 670.52
Publishing (cost for publishing 3 issues of the paper)	$4,500.00
Adobe InDesign software (for newspaper layout and publication)	$ 208.99
2 LCD projectors (used for group editing and student presentations)	$1,158.00
Document reader (used for group editing of hand written submissions and student presentations)	$ 525.00
8 Digital cameras with memory cards (for photography and journalism)	$1,625.69
Flash drives (for students who are gifted and not gifted to save and submit articles for publication in the school paper)	$1,106.93
General office supplies	$ 170.00
TOTAL	**$9,965.83**

VI. Contact Information

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