

Leaving a Legacy

Eileen Tramontana, Education and Volunteer Supervisor
St. Johns River Water Management District
4049 Reid Street, Palatka, FL 32177
etramontana@sjrwmd.com

Abstract

The Legacy program is a cooperative educational venture between the St. Johns River Water Management District and area schools. The program enlists educators and their students to help District staff make public lands more accessible while serving as living laboratories and classrooms. The Legacy program provides students unique opportunities to (1) assist with managing District lands, (2) participate in service learning, (3) increase environmental awareness, and (4) based on teacher observations, increase their school performance.

In turn, the District benefits because students remove exotic invasive plants, design and build trails and other amenities, post signs, pick up trash, provide tours, develop interpretive and educational materials, inventory natural resources, and test water.

The Legacy program began in 1993. Currently, 13 schools in 10 counties participate in Legacy programs. Although there are many similarities between Legacy programs, each program has unique, individualized teaching strategies and the programs are structured to fit the needs of students, schools, and the natural resource site.

Two evaluations, conducted in 2000 and 2003, have shown that participation in the Legacy program has assisted in improving students' grades, raised their awareness of water resource issues, and helped them develop leadership skills that benefit them, their schools, and their communities.

Introduction

The Legacy program began in 1993. Currently, 13 schools in 10 counties participate in Legacy programs. Although there are many similarities between Legacy programs, each program has unique, individualized teaching strategies and the programs are structured to fit the needs of students, schools, and the natural resource site.

The Legacy program is a cooperative educational venture between the St.

2002-03 Annual Legacy Statistics

Schools Participating – 13
School Districts Involved – 10
Number of Students Involved – 3,094
Number of Adults Involved – 205
Student Service Hours – 12,073
Adult Service Hours – 1,725

2003-04 First Quarter Legacy Statistics

Student Service Hours – 5,231
Adult Service Hours - 531

Johns River Water Management District and area schools. The program enlists educators and their students to help District staff make public lands more accessible while serving as living laboratories and classrooms.

Legacy is implemented differently by each program and is structured to meet the individual needs of the students and school. Elementary, middle and high schools have participated in the Legacy program, which may involve students for multiple years or for only a single year. Students with some programs receive all of their classroom instruction through the Legacy program. And some programs have students take part in periodic site visits and only parts of their classroom instruction takes place through Legacy. There is a wide variety of implementation strategies and practices used.

Through its Legacy program, the District gives students an opportunity to assist in managing public lands and to participate in service-learning projects within the District's jurisdiction. The Legacy program provides students a unique opportunity to (1) assist with managing district lands,(2) participate in service learning, (3) increase environmental awareness, and (4) based on teacher observations, increase their school performance.

Two evaluations, conducted in 2000 and 2003, by different independent consultants have shown that participation in the Legacy program has assisted in improving students' grades, raised their awareness of water resource issues, and helped them develop leadership skills that benefit them, their schools, and their communities. Participation in the Legacy program for one year yielded significant changes in skills and attitudes by students, even with schools that only held monthly on-site activities.

2000 Evaluation

In 2000, the District contracted with Elise Cassie to conduct an evaluation of all Legacy programs in existence for more than one year. Thirteen program contacts were provided. Thirteen teachers were contacted by phone, and interviews were conducted. Interviews lasted from 10 to 30 minutes, with teachers responding to five questions. Four of the five questions were observational, and the last question required specific data from the teachers.

Question 1: In general, rank the student's environmental awareness as a result of participating in the Legacy Program.

No Increase	Moderate Increase	Significant Increase
0	2	11

All teachers felt, without hesitation, that participating students had increased their environmental awareness as a direct result of the Legacy program.

Question 2: Based on your observation, rank the student’s overall environmental behavior (i.e. picking up trash, recycling, etc.) as a result of participating in the Legacy Program.

Poor (exhibits no positive behavior)	Satisfactory	Good	Excellent (always exhibits positive environmental behavior)
0	0	5	8

Although this scale appears vague and obviously subjective, all teachers provided at least one example of a student or students exhibiting positive environmental behavior on their own time (not associated with a grade). Examples of student action (behavior) include the following, which resulted from students’ increased environmental awareness from participating in Legacy programs:

- A group of students initiated a recycling program at their school where they collect recyclables from teachers.
- Students have actively pursued and participated in environmentally related internships.
- A student told a teacher about spending a day on the beach with her family and picking up trash on the beach.
- Students now recycle at home with the assistance of their families.
- Students have asked to organize field trips where they perform water testing. (Students have become empowered by Legacy and have assumed leadership roles.)
- Students told a teacher they have gotten together on weekends to pick up trash and remove exotic plants from the District site they are involved with through the Legacy Program.
- During spring break, students got together to spray-paint “no dumping” signs on storm water drains, explaining to parents why their actions were important.
- Students willingly visit the District site they are involved with on their own time, bringing trash bags for litter cleanups.
- Students who have not been successful with mainstream education take pride in providing guided tours of the District lands they are involved with to classmates and visitors.
- During the fires in 1998, students volunteered to assist the firefighters after understanding the value of their participation in the Legacy program.
- Students “pack out what they pack in” while camping.
- Students who, before participating in the Legacy program would discard fishing line in the water, have been observed refraining from throwing the line in the water at the end of the year. These same students now use oil recycling facilities for discarding used motor oil.

The environmental implications of specific student action examples provide justification for the value of Legacy-type programs.

The educational premise that hands-on learning stimulates interest and often increases motivation has been in place for a century. Studies are beginning to emerge which validate the concept of environmental, specifically outdoor, education as a means to improve student performance (Leiberman, 1998).

Question 3: On average, what can you say about the student’s grades as a result of participating in the Legacy Program?

Not Enough Data	Decreased	Remained the Same	Increased
1	0	0	12

One teacher noted that the students who benefited the most from Legacy program education are those students not “classroom oriented.” Another teacher noticed an increase in grades among the dropout prevention students in particular. One teacher said that the Learn and Serve grant she received has documented grade-increase data.

Another teacher went beyond observational data and documents GPAs and student standardized test scores over time. Students were tracked for consecutive years and as a group within the school. The following table illustrates an increase in GPA scores over a three year period.

Legacy Students’ GPAs	1996–1997	1997–1998	1998–1999
Overall	2.95	2.86	3.15
At risk	1.26	1.84	2.09

The GPA for Legacy participants is, on average, 0.34 higher than that of all students in the school. In addition to GPA information, the FCAT Writing scores for at-risk students participating in the Legacy program increased from 3.0 in 1997 to 3.5 in 1998. The teacher attributes the increase in both GPA and test scores to participation in the Legacy program.

Question 4: On average, what can you say about the student’s attendance as a result of participating in the Legacy Program?

Not Applicable	Decreased	Remained the Same	Increased
3	0	2	8

Teachers who responded “not applicable” stated the following reasons:

- ♦ Legacy program involves AP classes, which is a group of advanced students not likely to have attendance issues
- ♦ They could not participate in Legacy field trips if they missed school classes.

The final question (5) asked if the teachers had comparative data examining participating and non-participating students in terms of dropout rate.

None of the teachers maintained data investigating this question.

Findings and Recommendations

Based on telephone interviews with Legacy participants, the Legacy program is a valuable tool, acting as a catalyst for environmental attitude and behavior change in young people. The majority of the teachers feel that the District has played a significant role benefiting both the students and the environment. Preliminary findings revealed through teacher observations are that the Legacy program has a positive impact on participating students, communities, and the environment in general. One teacher noted a major improvement in the educational attitude of students.

The benefits to District-acquired lands are obvious, with trash and exotic plants removed, trails built, signs posted, tours provided, and water tested, in addition to other multi-use benefits for schools and the general public. Students have increased their environmental awareness and sensitivity, environmental behavior, grades, and attendance.

Recommendations for Legacy programs include the following:

- ♦ Continue monetary and personnel support for teachers and schools participating in Legacy programs. [The District can provide limited monetary support but assists all programs in developing funding partners, grant application, and donations.]
- ♦ Provide support for teachers to track student performance by creating a simple tracking form for GPAs and test scores from year to year to examine trends. [Note: This has been attempted by the District with varying levels of success. Florida has experienced drastic education accountability changes in recent years; the District is outside the traditional education system and is not allowed access to some data.]
- ♦ Determine specific information the District needs on a yearly basis and provide a simple reporting form for numbers of participants, etc. (Since financial support is not always from the same funding agency, the District needs to track information consistently.) [Annual Legacy reports have been developed by the District and are provided to all partners, school district superintendents and boards, the Department of Education, and the Governor's office. Current and past reports can be found on the District's Web site at <http://www.sjrwmd.com/>.
- ♦ All participating teachers/schools need to model reporting of GPAs and test scores after Winter Springs High School. The WSHS Legacy teacher has carefully tracked this information since the beginning of the program. [Note: This has been attempted by the District with varying levels of success. Florida has experienced drastic education accountability changes in recent years; the District is outside the traditional education system and is not allowed access to some data.]
- ♦ Encourage teachers to provide tours by students of the lands they are involved with, modeled after Princess Place. [This has been accomplished by all programs and

expanded to include Legacy participating in most District water festivals, special events, and other programs. Legacy students serve as educators and interpreters.]

2003 Assessment

In August 2003, the District contracted with Mary Marsters of Marsters & Associates (Marsters) to conduct an assessment of the District's public education programming, of which Legacy is a major component. The expertise of this contractor is to provide program assessment that looks at program outcomes and determines the impact of a program on its targeted customers: Were the customers satisfied with "the product" (in this case, the core education programs including Legacy offered by District education staff) and did the product have a sustainable impact on customer behavior. This information is then used to improve overall program management and performance.

The Legacy component of this assessment provided the District feedback and guidance on the Legacy program as presently implemented by District education staff.

Regularly used District Legacy delivery mechanisms and information were the source of information for this assessment and included the following:

- Workshops (both educator and student)
- Education presentations
- Water festivals, special events, and Legacy celebrations
- Publications
- Existing evaluation reports
- Program-related documents and reports

Also considered in this assessment is "education partner" satisfaction with District programs. This assessment is a strong and inclusive sample review at audit standards that allows for probability assertions on program accomplishment and the impact to be drawn.

The intended use of these assessment findings is to assist District staff to better understand present levels of program performance and from them, to be able to discern measures they can take to strengthen and improve program results. These findings can assist education staff in addressing a question related to program performance and management: Are we achieving the results we want, and what can we do to gain a greater return on our program-related investment?

Information-gathering was done to balance, to the greatest extent possible, its look at the breadth and depth of program impact. That is, for each core program area, the attempt was made to include numerous District counties or groups with active programs (breadth) and at the same time, to explore program impact through as many customer levels as served by a Legacy program (depth).

Findings were presented on the effectiveness of the overall Legacy program and its implementation along with recommendations for improvement and to gain a greater return on their program time and resource investments.

Methods

Methods used to assess the Legacy program included an observation of two Legacy student events; an on-site visit to a Legacy-participating school; on-site interviews with participating teachers/professional volunteers; on-site interviews with participating students; informal interviews with parents of participating students; telephone interviews with teacher-coordinators from seven additional Legacy programs; a review of existing Legacy program documents; and a review of earlier Legacy evaluation findings.

Findings and Recommendations

1. ***Legacy provides a first-time opportunity for many students to directly interact with the environment.*** As one teacher stated, “[before Legacy] the students’ idea of the environment was going to the beach.” One key change in students that most interviewees noted was their significantly increased concern about protecting and conserving their environment, including and focusing on water resources, as a result of their involvement in the Legacy program. This makes it a strong program that is clearly helping SJRWMD achieve their educational goals.
2. ***Across the board, teachers stated that they noticed a significant decrease in behavioral problems among students participating in the Legacy program.*** In many cases, teachers stated that these behavioral changes were because students had to maintain a clear behavioral record in order to continue to participate in the program. For example, one teacher noted, “The kids are totally different when out in the field, doing something real.” Students want so much to be in the program that they monitor their own behavior closely to avoid missing a Legacy session.
3. ***Teachers identify a dramatic impact on student academic performance and FCAT scores, which, again, they attribute to participation in Legacy.*** In some cases, teachers require students to maintain a certain grade point average in order to continue their participation. But overall, teachers find that students, when working in a real setting outside the school, engage in real learning. They apply academic concepts to their work in the field (such as science, math, language arts, literature, foreign languages, history, and social studies) and translate that learning into higher test scores and grade point averages.
4. ***Each Legacy program directly impacts a large number of students on an annual basis.*** At one observed site visit, 80 high school students were preparing for the arrival of 400 elementary students, whom they would educate about various aspects of the preserve habitat in which they were working. Across Legacy programs, literally thousands of students and adults on an annual basis visit Legacy program sites and receive guided tours of the natural environment,

learning from Legacy students the theory and practice of water and natural resource preservation.

5. ***Notable is teachers' praise of the program for its impact on at-risk students.*** Many teachers stated that students who would otherwise become drop-out statistics have not only remained in school but have flourished academically solely because of the Legacy program. Other impacts are significant. To a person, teachers indicated that the program has encouraged some students to enter environmentally related fields for college study and career. Further, at-risk students have become so engaged in learning that they are able to identify and pursue career paths. As one teacher stated, "They will be gainfully employed and functioning citizens rather than out standing on a street corner causing problems."
6. ***Legacy students interviewed during this project reflected on their own changes as a result of participating in the program.*** Many happily discussed their career goals, and have become more dedicated to their own education. One of the most common comments heard from students and teachers was that they (the students) became more responsible, because the program required that they take more responsibility for their actions and for the environment. As one teacher noted, "[Legacy allows students] to show people they can do something." Students take the program, and their role within the program, very seriously, and that responsible behavior carries over to other aspects of their lives.
7. ***For some teachers, this program has rejuvenated their own careers and rekindled their enthusiasm for teaching.*** A few teachers were explicit that Legacy was responsible for keeping them from becoming "drop-outs" from their profession. Interviews with teachers found that they are deeply committed to the Legacy program and have put in hundreds of hours over and above their regular teaching hours in order to make their programs a success. Yet it has energized them unlike any other education program they had encountered and given them a new realization of what education can do to change young lives.
8. ***SJRWMD is praised for its support and oversight of the program.*** Legacy program teachers find the technical support they receive to be positive and encouraging, and value-adding in terms of the skills and knowledge staff bring to the development of their individual programs. Teachers particularly note that SJRWMD staff are adept in critical areas that they, the teachers, are not: negotiations with county representatives, finding available grant money, suggesting program directions that mesh with school and school district guidelines, and gaining administrative support and encouragement for the program. Project WET lessons and training are seen as invaluable in moving student knowledge forward in the field.
9. ***Program cost has not been a stumbling block to those teachers interviewed in this project.*** In some cases, teachers have become creative in their methods to fund their program, including student fundraisers or charging students a small

participation fee (which they indicated parents were more than happy to contribute). Transportation to the environmental worksites was stated to be the most costly item for most programs. Many funded their programs by securing grants from state monies, for example, the Learn and Serve program. But they do state that the search for dollars is never-ending.

10. ***One major program stumbling block, particularly for low-performing schools, is the correlation of Legacy program activity to Sunshine State Standards and FCAT preparation.*** Administrators in some schools have given lower priority to the program because their school has received a low grade from the Department of Education and, as a result, they look only for the “skill-and-drill” of readying students for the tests. Legacy’s acceptance and ability to substantively grow is incumbent upon its ability to be keyed to these requirements that every teacher faces, and particularly teachers in schools that are struggling to improve.
11. ***Legacy needs an FTE coordinator to build the program.*** The demand for the program, either with new start-ups or support for present Legacy programs, is beyond what a part-time staff person can handle. The program cannot achieve maximum return on SJRWMD’s investment by limiting it to a part-time service. It costs SJRWMD very little other than the coordinator’s time, and for it to grow, it needs to have a dedicated full-time staff position.

Observations and Suggestions

1. ***The Legacy program leads to some of the most profound impacts of any environmental education program I’ve observed or assessed over the last decade.*** Participating in this program has been truly and dramatically life-changing for many students, particularly those considered “at-risk” and who would otherwise drop out of school. These same students now not only have perfect attendance records because of Legacy, but have dramatically improved their grades and perceive their lives filled with hope rather than without it. Similarly, it has literally brought teachers who had become jaded and exhausted by teaching back to life and injected energy and enthusiasm into their work.
2. ***Staff need to organize a summer session of some key Legacy teachers to do curriculum development for the program to make it SSS and FCAT-compatible.*** Some teachers have already begun to do this on their own, and because enthusiasm for the program is so high, it would be relatively easy to get a group of 4–5 teachers willing to take on this task during the summer of 2004.
3. ***The land approved for the students to use as their worksite needs to be as free of owner resumption issues as possible.*** Three programs in particular mentioned that their students had constructed environmental projects, only to have them disrupted by the landowners. While there are no guarantees in life, gaining owner buy-in toward preserving student work on the property may be a necessary prerequisite step before launching a Legacy program.

4. ***The Board of SJRWMD needs to be informed of Legacy program outcomes and impact.*** While many of those interviewed talked about their need for receiving communication from the Board in terms of mission, goals, and educational priorities, Legacy teachers felt the SJRWMD Board was quite unaware of the impact their own program is having on these schools and students, and therefore, it needed to receive information from its own customers about the power of the Legacy program. Legacy student presentations at Board meetings are a key way to inform Board members about how well-spent their dollars are in funding this program.

Conclusion

The educational premise that hands-on learning stimulates interest and often increases motivation has been in place for a century. Studies are beginning to emerge which validate the concept of environmental, specifically outdoor, education as a means to improve student performance (Leiberman, 1998).

Legacy is a program that has been shown over time to significantly contribute to student learning and, in some case, to teacher rejuvenation or retention. Education standards and objectives have changed in Florida to address the Florida Sunshine State Standards and to the Florida Comprehensive Assessment Test (FCAT). Legacy has improved critical thinking skills and hands-on application of knowledge, which are key components of the FCAT; and has led to behavior change. Students have implemented waterways cleanups, reduced their personal littering and water use, and changed buying habits. They have taken the initiative to start programs to protect the environment and volunteered with different groups to protect and improve the environment (Athman, 2003).

Legacy is a program that can be duplicated in many different schools, counties, and venues. Key to its success is the involvement of a passionate teacher, a knowledgeable and interested agency or partner staff, empowerment by school district and administration, and program support, both monetary and in-kind. Although each program has similar elements, all Legacy programs are unique and designed to address the individual needs for each school and to evolve over time to meet changing needs and opportunities.

References

- Athman, Julie Ann. 2003. *The Effects of Environment-Based Education on Students' Critical Thinking and Achievement Motivation*: St. Johns River Water Management District, Palatka, FL.
- Marsters, Mary. December, 2003. *Public Education Assessment of Program Impacts*: St. Johns River Water Management District, Palatka, FL.

Lieberman, Gerald A. & Hoody, Linda L. 1998. *Closing the Achievement Gap, Using the Environment as an Integrating Context for Learning: State Education and Environmental Roundtable*, pp 19-28.