

PROJECT EXPLORATION

YOUTH PROGRAMS EVALUATION

EXECUTIVE SUMMARY



August 2006



**Copies of the full Youth Programs Evaluation
can be downloaded from www.projectexploration.org**

COVER PHOTOS

Left: Junior Paleontologists Marco Mendez and Shureice Kornegay Photo P. Sereno.

Center: All Girls Expedition Photo C. Barnes.

Right: Laurie Parker with Sisters4Science students Photo A. Patel.

All photos © Project Exploration

EXECUTIVE SUMMARY

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Project Exploration is a nonprofit science education organization that works to make science accessible to the public—especially minority youth and girls—through personalized experiences with science and scientists. We believe learning is rooted in relationships, and our youth programs are designed to develop in-depth, long-term relationships. Our youth programs are devoted to students in Chicago Public Schools (CPS); they target students who may not do well in school, but who are curious and open-minded.

Despite wide acknowledgement of an alarming shortfall of Americans qualified in science and technology, and the dramatic under-representation of women and minorities in this workforce, little is known about the ability of educational programming or recruitment strategies – either in or out of school – to impact a student’s choice of major in college. Furthermore, lack of longitudinal data for college enrollment in Chicago – i.e., school based data that outlines who goes to college and majors in science – adds a significant hurdle to interpreting program impact.

Given this context, there are three remarkable findings from this Youth Programs Evaluation regarding students engaged in Project Exploration’s flagship science field programs:

- 1) 92% graduate high school
- 2) 57% enroll in a four-year college
- 3) 25% of all students and 35% of females major in science

The net impact of participating in a Project Exploration field experience is a dramatic increase in the likelihood that a given student will attain an undergraduate degree in science. Although lack of rigorous school-based college enrollment data from Chicago Public Schools means that the following calculation is somewhat tentative, **putting it all together, a Project Exploration student is approximately 10 times more likely to graduate from high school, go to college and major in science than a typical Chicago Public School student from the same school.**

PURPOSE

To evaluate Project Exploration’s youth programs and determine the extent to which these programs have achieved their objectives.

Project Exploration’s youth programs remain aligned with its mission of making science accessible to minority youth and girls. Through strong management practices, close attention to participant needs, and continual refinement of program activities, Project Exploration has built a suite of three youth programs that are highly complementary. Each program offers unique experiences customized to meet the needs of a particular subgroup

YOUTH PROGRAMS BY THE NUMBERS

- Project Exploration served over 500 students ages 12-17 from 45 communities across Chicago between 1999-2005.
- Approximately 85% of students are from low-income families.
- Programs serve a diverse group that reflects Chicago Public Schools demographics: 65% of students are African American, 25% are Latino, 10% are Caucasian.
- 73% of students are girls; 27% are boys.
- 81% of students maintain a relationship with Project Exploration after their first field experience.
- Junior Paleontologists to date: 84
- Dinosaur Giants to date: 150, compiling over 3,000 community service hours
- Sisters4Science to date: 274
- Over 60 women scientists are regularly assisting with Sisters4Science sessions.
- An average of 80 7th-9th grade girls participate in the Girls’ Health and Science Day conference annually.

within the target audience.

As a result of this evaluation, Project Exploration has made significant progress towards establishing desired outcomes and identifying performance measures capable of capturing progress towards its goals. Evaluation and improvement of programs is a serious concern at Project Exploration. In addition to staff involvement, a board-level program evaluation committee has been established in order to maintain attention to and forward progress on this work.

METHODOLOGY

We used:

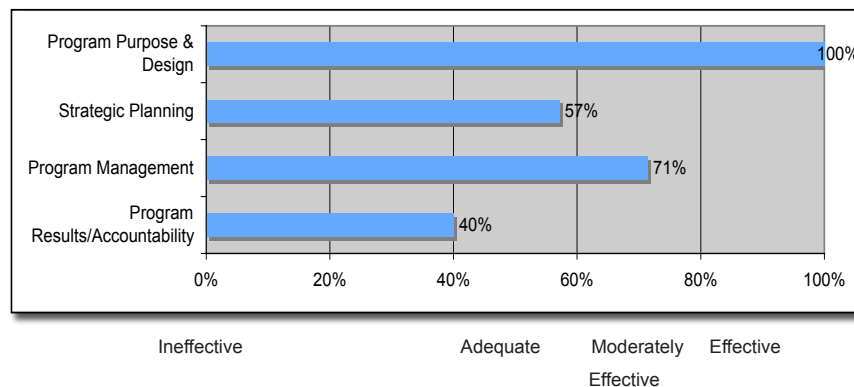
1) **Qualitative techniques.** A third-party evaluation consultant worked with Project Exploration staff to convene two focus groups of student participants. In addition, five current students interviewed a Project Exploration alumnus of their choosing. In this way the organization was able to capture the thoughts, reflections, and reactions to students' experiences with Project Exploration. Students' perspectives on what was important in the programs allowed the organization to establish meaningful benchmarks and begin to establish measurable objectives that reflect program design and intentionality.

2) **U.S. Federal Office of Management and Budget's Program Assessment Rating Tool (PART).** PART emphasizes four areas: program purpose and design, strategic planning, program management, and program results/accountability. PART was selected as the most appropriate tool for conducting the evaluation because it conforms to governmental and academic evaluation standards, permits rapid high-level assessment of multi-faceted programs, and allows for a degree of customization.

GENERAL PART FINDINGS

Results strongly indicate that Project Exploration's programs are well designed and implemented. In comparison to other, more well-established informal education programs that utilized the PART evaluation tool, Project Exploration performs very competitively. Lack of clear outcomes and baseline data is problematic for many agencies regardless of size or budget. Although these factors also play a role in a young organization such as Project Exploration, preliminary analysis clearly indicates that Project Exploration has a substantial positive impact on youth participants. Key strengths, weaknesses, and opportunities for program improvement as identified by an external evaluator, are outlined below:

Project Exploration Overall PART Ratings



STRENGTHS

- Project Exploration youth programs have a unique and consistent approach to addressing the demonstrated need among female, minority, and low-income students for science education.
- Programming is built on strong interpersonal relationships with peers and adults.

- Project Exploration’s executive staff proactively anticipates problems and takes concrete, tangible steps to address known deficiencies in areas of planning and evaluation.
- Project Exploration’s PART rating compares favorably to much larger programs such as NASA’s Office of Education and the Department of Education’s 21st Century Community Learning Centers, both of which also received overall ratings of “Adequate.”

WEAKNESSES

- Despite a strong purpose at the agency level, Project Exploration’s youth programs have historically lacked clearly defined performance goals, measures, and targets.
- Measurable performance goals, where they do exist, tended to focus on *outputs* such as participant counts rather than *outcomes* such as improved academic performance or growth in the science industry.
- Limited baseline data is available, and data was collected inconsistently.

GOALS AND OUTCOMES

As a result of the evaluation, Project Exploration worked to define an appropriate set of outcomes and measurements for its youth programs. Two types of goals were developed: *strategic goals* are statements of

purpose that create a clear connection between program activities and the broader mission, and *performance goals* are statements of desired outcomes that include *measurable objectives* against which baseline data can be collected and, over time, achievement compared.

Three draft performance goals were developed through the course of the year-long evaluation process; however, program staff began to feel that goals should be more closely aligned to the program design model of “*getting* kids interested in science, *keeping* them interested in science, and *equipping* them with what they need to graduate high school and consider college—and science—as career options.”

Beginning in fall 2006 Project Exploration staff will begin to collect baseline data and develop performance targets in an attempt to improve programs, align activities with longitudinal benchmarks, and see an improvement in the overall PART rating.

FIELD ALUMNI IMPACT DATA

To date, Junior Paleontologists is the only one of Project Exploration’s three youth programs that has a baseline of outcome-driven evaluation data; in addition, data was kept for other “field alumni,” such as Advanced Paleontologists. This data provided the primary source for this evaluation. Even taking into account uncertainty caused by inconsistent data collection, preliminary findings show that **Project Exploration field alumni graduate from high school, enroll in college, and choose to major in science at rates significantly above the expected average for their peers.** The following findings are particularly notable given the fact that few models exist for creating programs with a demonstrated capacity to significantly impact collegiate and career choice.

“I already feel successful. [Participating in Project Exploration] feels like an accomplishment already. If I can do this, what else can I do? I think I have a future in science. Before, I didn’t really think much about it.”

-Hasson, 16, current student, one year with Project Exploration

“Project Exploration was one of the main points in my college essays. I went to this college summit and we were told to focus on something important. And even though I was moving around a lot, I always kept coming back to [Project Exploration,] one of the only places that I kept on going to. I kept on changing schools, but I always came back.... There is a sense of family here.”

-Charlita, 17, alum, five years with Project Exploration

“The stuff that I have learned in biology and anatomy, I learned [at Project Exploration] first. We learn more here than what they teach us in school. We get more in-depth and hands-on.”

-Angie, 21, alum, two years with Project Exploration

Students Graduating from High School

Ninety-two percent of students who participate in Project Exploration field experiences graduate high school. When compared to the graduation rate of students attending the same schools, Project Exploration field alumni graduate high school at a rate 18% higher than their peers. Because academic achievement is not a requirement for selection into Project Exploration programs, students have a wide variety of academic success levels. Therefore, it is not known whether the students are exactly representative of their respective schools. Additional data is needed to increase confidence in this measure.

Students Enrolling in College

Fifty-seven percent of the graduating seniors who participated in at least one Project Exploration field experience are known to have enrolled in a four-year college. An additional 22% also enrolled in college, although it is not currently known whether they entered two- or four-year degree programs. In 2004, the only year for which Chicago Public Schools data exists, only 27% of public high school graduates went on to enroll in four-year colleges. Taking into account that a Project Exploration student is both more likely to graduate from high school and more likely to enroll in a four-year college, the net impact is that **a Project Exploration student is 3.4 times more likely to enroll in a four-year college degree program than a typical CPS student.**

Both graduation and college enrollment rates vary depending on which high school a student attends. Whereas the CPS graduation rates used were adjusted for the specific schools that PE students attended, college enrollment rates were not adjusted due to lack of available data.

Students Majoring in Science

Twenty-five percent of all students and 34.8% of all girls who graduate from high school as Project Exploration field expedition alumni will go on to major in science in college. Although no comparison data is available, those numbers are certainly well above expected norms. Looking only at those students who later attend four-year colleges, Project Exploration alumni are three times more likely to choose a science major than a typical college student. The results are more pronounced for girls than for boys. Girls from Project Exploration's programs choose science majors at 5.3 times the national average rate, whereas boys choose science at 2.2 times the national rate.

The net impact of participating in a Project Exploration field experience is a dramatic increase in the likelihood that a given student will attain an undergraduate degree in science. Although lack of rigorous school-based college enrollment data from Chicago Public Schools means that the following calculation is somewhat tentative, **putting it all together, a Project Exploration student is approximately 10 times more likely to graduate from high school, go to college and major in science than a typical Chicago Public School student from the same school.**

RECOMMENDATIONS AND OPPORTUNITIES FOR IMPROVEMENT

A full-scale, longitudinal assessment of the programs' impact is the logical next step in the evaluation process, pending the availability of appropriate funds. Little precedent exists for much of what Project Exploration aims to accomplish. If Project Exploration can sustain a longitudinal evaluation effort and produce compelling evidence of impact, the organization will be in a unique position to contribute to the national dialogue on two critical issues: (1) out-of-school-time program development and (2) advancement initiatives in science, technology, engineering, and math. The following recommendations are to be considered if Project Exploration to become a voice at a national level:

- Conduct PART evaluations annually or bi-annually.
- Establish systematic data collection and analyses procedures using defined measurable targets.
- Invest in database software and information architecture.
- Analyze whether incoming students are representative of Chicago Public Schools with respect to socioeconomic and academic characteristics.
- Strengthen record-keeping related to recruitment practices and incoming student characteristics.
- Develop and execute baseline-performance-measure evaluations for all three youth programs.
- Use baseline results from performance measures to create both short- and long-term targets for all three youth programs.
- Develop efficiency measures appropriate to strategic planning needs (efficiency measures are designed to capture the *cost* of achieving particular goal).

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For more information about Project Exploration's Youth Programs, visit www.projectexploration.org



PROJECT EXPLORATION
950 East 61st Street
Chicago, Illinois 60637
Phone: 773.834.7614
Fax: 773.834.7625
www.projectexploration.org