

Schools That Can: A Validation Study

DISCOVERY CHARTER SCHOOL

NEWARK, NJ

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July 19, 2006

Discovery Charter School

History and Mission. The Discovery Charter School, located in Newark, New Jersey, was established in 1999 to provide parents and 75 fourth through eighth grade students a dynamic community-centered public educational alternative. The purpose of the educational program is to enable students to develop and learn to apply skills that enable them to become lifelong learners, critical and creative thinkers, effective communicators and good citizens.

The school's current physical space is attractive but cramped, which may be why it is seeking new space. It occupies 6,000 square feet in downtown Newark. Upon entering the building, the visitor is greeted by an array of colors, e.g., desks painted in different colors, flowers, plants, carpeting, tapestries hanging from the walls, and recessed lighting, filling a large no-interior wall space. Each student has his or her own assigned desk within that space. Students do most of their independent work at their desk, but they move during scheduled transition times, or when directed, to go to a particular teacher's instructional area. Depending upon the subject and the lesson, grouping may be by grade level, as for a math lesson I observed, or it may be a multi-age grouping.

The school's stated mission is to use the process of living to build on students' natural curiosities and develop their workplace readiness skills. Using the "discovery" approach to teaching and learning, each child uncovers his or her own unique talents and abilities through a hands-on, interactive, problem solving exploratory learning process. The school believes that one of the greatest strengths of the discovery approach is that it develops the whole person, respecting the learning styles, interests, and abilities of each student, and helping each to determine his or her role and responsibility within the learning community.

In addition to the traditional academic objectives of the school, several non-academic goals, or character based objectives, guide the school's program. These include:

- Students will become productive citizens and workers
- Students will take ownership of their learning
- Students will learn and display good sportsmanship behaviors as an observer and participant
- Students will develop the competencies and skills necessary to work on a team, teach others, and appreciate and respect diversity

Like all public charter schools in New Jersey, Discovery Charter school must satisfy New Jersey Core Curriculum Content Standards. The manner in which the school accommodates the curriculum standards is unique, however. Discovery Charter School provides an inter-disciplinary curriculum that incorporates coursework in mechanical engineering, physics, historical research and environmental science. Students are

encouraged, indeed required, to maintain a journal record of their work and progress in their daily engineering activities, much as is done in a real-life laboratory. Students truly learn by discovering the physical principles governing their work and an awareness of their own strengths and learning styles.

Although Discovery charter school performs very well on the required battery of State assessments, outcomes that will be displayed later in the report, it is not satisfied with the linear grade level approach to assessment that is mandated under No Child Left behind (NCLB) federal legislation. As students progress through lessons, classes and grade levels, they are required to develop a portfolio that reflects what they are learning. Assisted by their instructors and guest artists, students combine artwork, poetry, and various journal exercises to complete a completely unique resume of their accomplishments.

In addition to traditional academic content, students are exposed to laptop computers (the entire school operates on a wireless network) weaving, dancing and physical education activities, although the school does not have its own interior gym space.

The length of the school day is 7 hours and 30 minutes, and the typical instructional time allocated daily is seven hours. However, the school is open for students from as early as 7:30 AM until as late as 5:00 PM. On average, the school is open on a daily basis one hour and 20 minutes more than the State average. The student teacher ratio is currently 11:1.

Because Discovery Charter School is a public entity it has little if any control over the student body that enrolls. Each year the school accepts about 30 students and currently has a waiting list of about 200. Despite its prowess as an academic institution, the school has had only modest fund-raising success during the past three years, averaging about \$20,000 annually. In an effort to improve its fund raising, this year the school hired a development director.

Students . The school currently serves 75 students, 15 at each grade from from fourth through eighth inclusive. Of these, 20% are special needs students who have IEPs, a high percentage. The majority of students are poor, with an average of 80% qualifying for the free or reduced price lunch program during the past three years. This school year (SY 2006-207), about 90% are eligible for that program. Attendance has been stable at about 95% for the past three years. During School Year SY 2004-2005, the most recent year that data are available, Discovery Charter School's attendance rate was 1.3% higher than the state average. Finally, the 8.0% mobility rate for students at Discovery Charter is considerably lower than the state average of 11.9% during SY 2005-2006. On the other hand, during SY 2004-2005, the school's mobility rate of 18.7% was considerably higher than the state average of 12.3%. Additional detail about the students appears in Table 1 below.

Table 1
Demographics for Discovery Charter School (2005-2006)

Students enrolled	75
Pre K	0
Grades 4-5	32
Grades 6-8	43
Percent Caucasian	0
Percent African American	90
Percent Hispanic	.06
Percent Asian	10
Percent eligible for free/reduced price lunch	80
Percent mobility rate	8.0
Percent special education	21.3
Attendance rate	95.7%

Administration and Teachers. The school supports a total of seven teachers and two teacher/principals. The two teacher leaders have a combined 50 plus years of teaching experience. The active, hands-on approach to the school's curriculum, which is reviewed later in the narrative, may be traced at least in part, to one of the leader's experience in developing an entrepreneurial program, KIDS IN BUSINESS, which incorporates hands-on, discovery learning and social responsibility. The other co-leader was a special education teacher in Massachusetts and recently received her doctorate in education from the Harvard Graduate School of Education. The special education background may also partially explain the heavy emphasis on alternative, individually-based, instructional approaches in use at the school.

Teachers come to Discovery Charter School with a wide variety of backgrounds. One teacher had previously taught in India. Another worked at the Center for Reflective Community Practice at the Massachusetts Institute for Technology, and yet another came from the world of business. The varied experiences of the teachers undoubtedly influence the breadth of the curriculum offerings as well as the hands-on, active learning approach that characterizes the lessons.

One-fourth of the teachers hold a Masters degree and all are certified. The teacher mobility rate, the percentage of teachers who entered and left the school during SY 2005-2006, is 40%. This may be compared to the state average of 6.7%. The substantially

higher mobility rate of Discovery Charter teachers could be attributable to the fact that the salaries are not competitive with surrounding schools. However, for those teachers who remained with the school during SY 2005-2006, the average attendance rate of Discovery teachers was 98.2%, compared to the average rate in New Jersey of 96.5%.

All seven teachers completed a 1-page anonymous survey asking them to rate the extent to which they agreed that the school provides a sound education for its students. Five teachers strongly agreed that the school provides a sound education, one teacher agreed, and the final teacher neither agreed nor disagreed. Three of seven teachers strongly agreed that the academic standards of the school are largely appropriate and another two teachers agreed. One teacher was noncommittal while the final teacher strongly disagreed. Overall, the survey data indicate that teachers believe that the academic standards are appropriate and the general education program at Discovery Charter school is appropriate to the students' needs.

Parent Satisfaction. A one-page survey instrument was distributed by the administration to a 20% sample of parents. Seventeen surveys (23%) were completed and returned to the school. Among other questions, the survey asked each parent to indicate on a five-point scale the extent of their satisfaction with the education their child is receiving at Discovery charter School. Table 2 displays these responses.

Table 2
Parent Satisfaction

Overall, how satisfied are you with the education your child is receiving?

Not at all	A little	A fair amount	A good amount	A lot
0	0	0	0	17

All parents who responded stated that they were very satisfied with the education their child is receiving. This probably explains why the school has a waiting list of 200.

Curriculum and Pedagogy. Like all public charter schools in New Jersey, Discovery Charter school implements New Jersey core curriculum content standards. Teachers are expected not only to deliver the curriculum but also to work with the two co-leaders of the schools to design curriculum content. Teaching and learning at Discovery appear to exemplify an active approach to instruction with students expected to apply what they learned through classroom discussion and analysis of the content at hand. Several guiding principles inform instruction: All students and faculty are members of a true, learning community where all students and teachers know each other; high value is placed on discipline and creativity; and learning flows from students' natural curiosities. The latter principle can be directly viewed in two curriculum content areas: (1) Struggles for Freedom , which engages students to help them develop a deep understanding of history, and; (2) The science engineering curriculum, which is anchored by an engineering program where students build battery powered models and explain how their

model works. Students are required to maintain a journal of their engineering activities, thereby combining an interdisciplinary writing element in the science curriculum.

Students maintained excellent decorum throughout the lessons, which were scheduled for 90 minute blocks of time during my visit. Although I did not observe a formal behavior management program, the co-leader indicated that the small school size enables the staff to maintain very close attention to the needs of individual students.

The school provides a full schedule of professional development activities for its teachers. During SY 2005-2006 the school invited such renowned speakers as Dr. Mel Levine who shared with teachers techniques to meet the needs of special education students, and Paul Lawrence who provided two days of math workshops. In addition, the school provided an additional day of professional development on a writing workshop and nine days on teaching American history.

The unique nature of the curriculum offerings, coupled with the flexibility in instructional strategies have resulted in state standardized assessment outcomes that far outstrip other schools educating similar student populations. In fact, the school's SY 2005-2006 scores on the New Jersey Assessment of Skills and Knowledge (NJASK8) for 8th grade, the culminating year before students move on to high school, indicated higher performance in math and science than New Jersey as a whole and about as well in Language Arts and Literacy. Additional detail about the school's academic performance appears in Table 3, for fourth through eighth grade scores, the entire spectrum of grade levels that New Jersey assesses. The most recent one or two years of data appear.

In Table 3, several rows of data are labeled as 'similar schools.' This designation is referred to in New Jersey Report Cards as the District Factor Group, which is a cluster of schools identified by the state as being of similar socioeconomic status. I re-labeled this cluster as similar schools. Note that across all assessments in eighth grade, the critical year before entering high school, approximately 50% more students at Discovery Charter achieve or surpass state standards than at similar schools. The data presented in Table 3 are exhaustive in that they contain all test scores reported on the New Jersey Department of Education 2005-2006 Report Card.

Table 3
New Jersey Standardized Assessment Data (Percent Proficient or Advanced)

Language Arts Literacy (Grade 4 proficiency)

Testing Entity	School Year	Number Tested	Proficient (%)	Advanced (%)
Discovery	2005-2006	17	82.4	11.8
	2004-2005	16	75.0	0
Similar Schools	2005-2006	1163	60.4	1.8
	2004-2005	1150	63.7	2.1
New Jersey	2005-2006	100,880	76.2	3.8
	2004-2005	102,894	77.2	4.4

Mathematics (Grade 4 proficiency)

Testing Entity	School Year	Number Tested	Proficient (%)	Advanced (%)
Discovery	2005-2006	17	70.6	23.5
	2004-2005	16	43.8	6.3
Similar Schools	2005-2006	1163	41.3	18.8
	2004-2005	1150	45.9	15.7
New Jersey	2005-2006	100,880	41.2	41.1
	2004-2005	102,894	48.5	31.7

Science (Grade 4 proficiency)

Testing Entity	School Year	Number Tested	Proficient (%)	Advanced (%)
Discovery	2005-2006	17	58.8	29.4
	2004-2005	16	68.8	0
Similar Schools	2005-2006	1164	50.3	15.4
	2004-2005	1155	54.7	12.1
New Jersey	2005-2006	101,636	54.5	27.8
	2004-2005	103,380	59.1	22.0

(continued)

Language Arts Literacy (Grade 5 proficiency)

Testing entity	School Year	Number Tested	Proficient (%)	Advanced (%)
Discovery	2005-2006	14	71.4	0
Similar Schools	2005-2006	1511	68.6	3.2
New Jersey	2005-2006	103,379	76.6	9.3

Math (Grade 5 Proficiency)

Testing entity	School Year	Number Tested	Proficient (%)	Advanced (%)
Discovery	2005-2006	14	71.4	0
Similar Schools	2005-2006	1509	46.7	13.4
New Jersey	2005-2006	103,946	54.2	27.5

Language Arts (Grade 6 Proficiency)

Testing entity	School Year	Number Tested	Proficient (%)	Advanced (%)
Discovery	2005-2006	17	82.4	11.8
Similar Schools	2005-2006	1572	55.7	2.7
New Jersey	2005-2006	104,047	65.8	9.2

Math (Grade 6 Proficiency)

Testing entity	School Year	Number Tested	Proficient (%)	Advanced (%)
Discovery	2005-2006	17	47.1	5.9
Similar Schools	2005-2006	1569	42.4	6.9
New Jersey	2005-2006	104,573	53.5	17.3

Language Arts (Grade 7 Proficiency)

Testing entity	School Year	Number Tested	Proficient (%)	Advanced (%)
Discovery	2005-2006	15	73.3	13.3
Similar Schools	2005-2006	1443	61.8	3.0
New Jersey	2005-2006	106,962	70.3	9.9

Math (Grade 7 Proficiency)

Testing entity	School Year	Number Tested	Proficient (%)	Advanced (%)
Discovery	2005-2006	15	46.7	6.7
Similar Schools	2005-2006	1439	37.5	5.9
New Jersey	2005-2006	107,362	49.8	14.4

(continued)

Language Arts Literacy (Grade 8 proficiency)

Testing Entity	School Year	Number Tested	Proficient (%)	Advanced (%)
Discovery	2005-2006	11	81.8	0.0
	2004-2005	15	73.3	0.0
Similar Schools	2005-2006	1342	54.0	2.9
	2004-2005	1026	48.8	2.1
New Jersey	2005-2006	106447	65.7	20.9
	2004-2005	107410	64.3	18.7

Math (Grade 8 proficiency)

Testing Entity	School Year	Number Tested	Proficient (%)	Advanced (%)
Discovery	2005-2006	11	63.6	9.1
	2004-2005	15	40.0	13.3
Similar Schools	2005-2006	1343	31.3	8.1
	2004-2005	1025	30.5	7.2
New Jersey	2005-2006	107530	43.6	20.9
	2004-2005	108519	43.7	18.7

Science (Grade 8 proficiency)

Testing Entity	School Year	Number Tested	Proficient (%)	Advanced (%)
Discovery	2005-2006	11	45.5	45.5
	2004-2005	15	66.7	26.7
Similar Schools	2005-2006	1346	52.2	10.5
	2004-2005	1027	49.9	10.3
New Jersey	2005-2006	107600	58.5	20.5
	2004-2005	108512	53.3	23.5

The New Jersey school report card also provides data on the percentage of students suspended from school each year. These data for the previous two years appear in Table 4. Note that Discovery suspends fewer students than the state average.

**Table 4
Percentage of Students Suspended From School During Two School Years**

School Year	Discovery Charter	State
2005-2006	2.7	4.4
2004-2005	0.0	4.1

The excellent preparation of Discovery graduates enables them to enter high school with the skills to succeed. Not surprisingly, graduates attend a wide range of high selective high schools. Many of these schools are prestigious boarding schools to which Discovery graduates receive a full scholarship. Among the schools that Discovery Charter graduates have recently enrolled include: Longmeadow High School in Springfield, MA Hershey School in Hershey, PA, and Montclair Kimberly Academy, in Montclair, NJ. Students also attend a number of local private and parochial high schools that are highly competitive.

Recommendation. The school's use of technology clearly supports the curriculum. One aspect of the technology use that the school may wish to re-visit is the extensive reliance on the wireless microphone to issue directions to all students and staff. While this is clearly an efficient way to communicate, it also interferes with students' engagement. On several occasions, I noticed students stop their work to listen to directions that did not appear to affect them directly. For example, individual students were identified to go from one learning station to another and this instruction caused students who were not being directed where to go to momentarily stop work.

Conclusion. Discovery Charter school provides a well-rounded, hands-on approach to education for a population of poor minority students, and it does so very successfully. Creativity and discipline are maintained throughout and standardized assessment scores far surpass those of similar schools. Discovery Charter will be an excellent addition to the Schools That Can network.

Biography

Jay Gottlieb is a professor of educational psychology in the Department of Teaching and Learning at New York University. He received his doctorate in 1972 from Yeshiva University in New York City and has spent the past thirty years conducting teaching and conducting research and evaluations in urban schools. His research focuses on the education of at-risk students and students with disabilities. Dr. Gottlieb has served as a special education expert for federal and state court cases involving special education, studied special education in the Oslo, Norway public schools, and participated in the drafting of reports to re-organize special and remedial education in the New York City schools. He has published 90 articles in various professional sources and has been the principal investigator of about two dozen research grants and contracts as well as director of several training grants, including one to train doctoral level researchers in applied research. Dr. Gottlieb was a Fellow of the American Psychological Association, a member of numerous other professional organizations, and at various points in his career, served on the editorial boards of half dozen professional journals. Dr. Gottlieb also served two terms as an elected public school trustee in his community.

APPENDIX A

SCHOOLS THAT CAN CRITERIA FOR MEMBERSHIP

2006

A SCHOOLS THAT CAN school provides families and students from economically disadvantaged urban areas with an education based on the following criteria:

- 1. Located in inner-city and primarily serving an economically disadvantaged population of students that are representative of its community**
- 2. Striving to achieve superior levels of academic performance as measured by objective assessments and outcomes**
- 3. Emphasizing character based education**
- 4. Providing a safe, disruption-free, non discriminatory environment, where teachers can teach and children can learn**
- 5. Valued by parents and actively engaged within their communities**
- 6. Characterized by dedicated and effective leadership**
- 7. Attaining a high level of sustainability**
- 8. Willing to share “best practices” and assist other schools.**

APPENDIX B

SCHOOLS THAT CAN

(Formerly Bill Traylor Institute for Inner City Education)

VALIDATON BOARD

BACKGROUND

Started in 1998 as the Bill Traylor Foundation, an informal network of four high performing schools, the organization has evolved into SCHOOLS THAT CAN (STC), a nationwide network of fifteen schools that have agreed to meet STC's membership criteria. Up to fifteen new schools will be added during each of the next two years. All schools serve children living the inner city of large metropolitan areas who have few alternatives to receive a quality education. STC is a 501(c) 3 charitable organization.

Based on the shared vision of our board and the network of our outstanding schools, we recognize that, in spite of many challenges, we are in a position to make a difference in helping to improve inner city education.

STC is committed to continue to expand the number of member schools, document that each school meets STC Criteria for Membership, identify why each school has achieved its high level of success (identify best practices), and share the results with other STC schools as well as with public schools. Each member school will be validated approximately every three years. The Validation Study also will be used to assess potential new member schools. Member schools will use the report internally to identify areas for improvement as well for fund raising (most member schools have identified fund raising as their biggest challenge). Each three years STC and the school will be able to track improvements in academic performance as highlighted by the previous report.

VALIDATON BOARD

Member schools want to be validated by professional, objective educators: an independent assessment of their current position, including the identification of areas to be improved. To this end, STC has created an independent Validation Board (VB), consisting of professional educators from across the country. The VB is responsible for the Validation Study process and the format and contents of the reports.

Last fall, STC engaged Dr. Jay Gottlieb professor of Education at NYU, to evaluate the first six schools. The Perkins Malo Hunter Foundation, has agreed to fund 15 school evaluations during 2005-2006 and in each of the next two years, is funding the project.

Validation Board Composition

- ◆ Validation Board consists of leading educators representing a cross section of the country who serve for a period of three years.
- ◆ Four representative heads of schools serve on the Validation Board as advisors to provide input from member schools.

University Educators

West Coast: Dr. Dr. Richard Fliegel, Department of Education, University of Southern California, Los Angeles

Mid-West: Dr. Patty Horsch, Professor, Erikson Institute – Graduate School in Child Development, Chicago

East Coast

Dr. Jay Gottlieb, ex-officio, Professor of Educational Psychology, New York University, New York

Coordinator and STC Advisor: Seymour Fliegel, President, Gilder Senior Fellow, Center for Educational Innovation (CEI), New York

VB Head of School Representatives:

Mike Piscal, Head of School, View Park Preparatory Accelerated Charter School, Los Angeles, West Coast

Cheryl Collins, Holy Family Lutheran School, Chicago, Mid-west

Spencer Blasdale, Director, Academy of the Pacific Rim, Boston, East Coast

AB Whitfield, Co-Principal and Chief Operating Officer, Trey Whitfield School, Brooklyn, NY Metro area

March 6, 2006