



Charter Schools Institute

State University of New York

Charter School of Science and Technology

Report

2000-2001
Academic Year

History and Purpose

Charter schools are public schools that operate independently of their local school district and are created by civic leaders, community groups, educators and parents interested in creating public school choice in their communities, particularly for children at-risk of academic failure.

Like all public schools, charter schools are open to all children, non-sectarian in their programs and funded with public tax dollars. Each public charter school is governed by an independent board of trustees that, like all school boards, is subject to New York State's Freedom of Information and Open Meetings laws. Public charter schools authorized by the State University of New York Trustees are subject to oversight and monitoring by the University's Charter Schools Institute. Additionally, all public charter schools in New York State are subject to inspection and oversight by the state Department of Education.

In exchange for freedom from many rules and regulations, each public charter school receives a charter, or contract, of up to five years and must meet stated student performance goals or risk losing its charter and ceasing operations. This tradeoff – freedom from rules and regulations in exchange for unprecedented accountability for student performance – is considered one of the most significant differences between public charter schools and other public schools run by school districts.

The specific purposes of the charter schools law are set forth in Education Law §2850(2)(a-f), and they include improving student learning and achievement, increasing learning opportunities for all students (particularly those at-risk of academic failure), expanding parental choice in public schools and moving from rule-based to performance-based accountability systems.

Allowed by Chapter 4 of the Laws of 1998, new public charter schools in New York can be authorized by the State University of New York Board of Trustees, the Board of Regents or by local Boards of Education (in conjunction with the Regents). In addition, existing public schools can seek charter status through their governing Boards of Education, again in conjunction with the Regents.

The Charter Schools Institute was established by the State University of New York Board of Trustees to assist in the review, approval and oversight of schools seeking their charter via the Trustees. Inspections, analysis and reporting of information represent one facet of the oversight process conducted and managed by the Institute.

The Institute has created and established a cyclical visitation and inspection process for schools authorized by the University Trustees. The Institute conducts multiple site visits and inspection visits throughout the five years of an approved charter; some visits are announced and others are not. This process allows the Institute to gather regular information regarding teaching and learning within the environment of each school, as well as information regarding each school's administrative operations.

This report reflects the observations and findings from an inspection visit conducted by a 2 – 4 member team comprised of Institute staff, and, in some cases, outside experts. Visiting

inspectors seek evidence of effectiveness in key areas: teaching and learning (curriculum, instruction and assessment); climate (environment and discipline); facility (building or physical plant); and trueness to the school's charter, including its mission. Although issues regarding compliance with state and federal laws and regulations may be noted (and subsequently addressed), compliance is not the ultimate purpose of the inspection visit. The evidence obtained by the inspectors in a visit to a first-year school functions as baseline information regarding the school.

On May 31, 2001 an inspection team for the Charter Schools Institute visited the school. The team was comprised of:

- Michael Stevens, Ph.D. , Vice President of Research and Evaluation
- Douglas Lemov, Vice President for Accountability

The inspection visit included meeting with the principal/director, classroom visitations, ad hoc meetings/conversations with staff and students and a review of student work. Data from this inspection along with anecdotal evidence from visitations during the school year was used to develop the curriculum and instruction component of the public report. Institute staff considered the following elements of successful schools in preparing the report:

- Do the school's practices reflect high expectations for student achievement?
- How do teachers assess student work?
- Does student work reflect rigorous assessment?
- Do students appear to be engaged and attentive?
- What is the level of teacher professionalism and expertise?
- Assess the school climate and learning environment.
- Is the school orderly?
- Do the physical facilities support effective instruction?
- Is the school true to its purpose as stated in its mission and charter?
- Assess the school's direction, leadership and growth.

This document is designed to share with the school's governing board, parents and the public the inspectors' observations, findings and discussion. It is also designed to provide substantive information that can be used to improve the school's educational programs for students as well as inform parents and other members of the public about the school's progress.

Readers should keep in mind that each first year charter school faces major challenges, and that schools address them at different rates. There is no one correct time frame for successfully meeting each challenge. The challenges are identical to those of a start-up business enterprise, except public charter schools involve parents and children in the high-profile world of public education. Challenges commonly addressed by public charter schools across the country and in New York State frequently include:

- Establishing a positive school culture that provides high expectations, support and encouragement for students and teaching staff, any necessary remediation for students, and consistent daily routines for all;

- Establishing operational and communication patterns with the governing board, as well as communication patterns with staff, parents and the community;
- Setting up sound fiscal processes and procedures;
- Establishing this operation in often less-than-ideal facilities, without ready access to facilities funding mechanisms available to other public schools;
- Creating an environment where teachers receive timely professional development to address changing student needs;
- Ensuring that all staff are familiar with and consistently use the school-wide system for behavior management; and;
- Retaining qualified staff and minimizing the frequency and rate of any staff turnover by understanding the reason for it, and providing replacement staff with an orientation to the school and its program, as well as the necessary professional development.

School Description

The Charter School for Science and Technology was approved by the State University Board of Trustees in January 2000 and by the Board of Regents in May of that year. It opened in the fall of 2000. Located in Rochester, the school opened with an enrollment of 938 students in grades K-8, with a planned enrollment of 1,338 pupils in grades K-12 at the end of the 5-year charter. Its school year is 20 days longer than the traditional 180-day school year.

The mission of this school, which is housed in a renovated Bausch & Lomb plant at 690 St. Paul Street Rochester, is to create a school focusing on high achievement in science, and applied and industrial technology to meet the similarly oriented job market in the Western New York region.

Charter School for Science and Technology contracted with Edison Inc., for the management of the school. Edison has implemented its school design in 136 public schools, including many charter schools, with more than 75,000 students. The school has also entered partnerships with Rochester Museum of Science Center, Rochester Institute of Technology, Girl Scouts of Genesee Valley, Inc., and the American Red Cross-Greater Rochester Chapter. Its founding board included two Rochester City School District employees.

According to the 1999-2000 New York State Education Department district-wide report card of the Rochester City School District, 36,784 students enrolled: 62.6% African-American; 18.3% Hispanic; 16.7% white; and 2.4% American Indian, Alaskan, Asian or Pacific Islander. Some 83.5 % of the students in the district received free or reduced lunches under the Federal School Lunch Program.

The school reported that for the 2000-01 academic year, 76% of its students qualified for the federally subsidized lunch program, a common indicator of poverty.

In 2000, 63% of students in the Rochester City School District failed to meet state standards on the 4th grade English Language Arts test; 62% of students failed to meet state standards on the 4th grade Math test. On the 8th grade English Language Arts test, 73% of students failed to meet state standards; 88% of students failed to meet state standards on the 8th grade Math test.

Discussion of Findings

Academic Data

The school has not presented externally verified, objective data on the school's progress in fostering overall student growth. Summary data on students' initial skill levels, as measured by a Spring 2001 administration of the Stanford Achievement Test, has been presented but the data has not been verified by the submission of supporting information. While tentative, pending verification, and incomplete, the data suggest that the school enrolled a population scoring on average at the 19th national percentile in reading and the 19th national percentile in math.

The school also presented data on fourth and eighth grade students' scores on the State Assessments in English Language Arts and Math. These tests are designed to measure the sum total of a student's learning during all previous grades. Given in the first year of a charter school's operations, they are considered a measure of the status of students upon enrollment and thus a baseline against which future data will be measured. On the Grade 4 English Language Arts assessment: 18.4% of students scored at level one, farthest from standard; 54.6% of students scored at level two, nearer to standard; 25.3% of students scored at level three, meeting standard; and 2.35% of students scored at level 4, exceeding standard. On the grade 4 Mathematics Arts assessment: 19.5% of students scored at level one; 35.6% of students scored at level two; 33.3% of students scored at level three; and 11.5% of students scored at level 4.

On the Grade 8 English Language Arts assessment, 28.4% of students scored at level one; 59.1% of students scored at level two; 10.2% of students scored at level three; and 2.3% of students scored at level 4. On the Grade 8 Mathematics assessment: 58% of students scored at level one; 31.4% of students scored at level two; 9.9% of students scored at level three; and 0.8% of students scored at level 4.

The school provided growth data on pre-and post test from the Gates-MacGinite Reading Test for all students. This data has not yet been presented in a statistically valid format. The school also presented data on the growth of a limited number of students (those who initially tested two or more years below grade level) on the Woodcock Reading Mastery Test. This data also has not yet been presented in a statistically valid format.

School Curriculum and Instructional Practices

Inspectors found that CSST staff at all levels struggled to construct a successful system of discipline that allowed for the pursuit of academics. Setting a culture of high expectations in both behavior and academic performance is a common struggle in many first year schools and teachers commented on the need for a discipline structure that was supported by the school leader and designed to be fair, consistent, and focused on academics. One group of classrooms, or "house," at CSST had begun to establish a climate that was conducive to academic success, but this success had not been supported or replicated throughout the school.

Inspectors found teachers at the Charter School of Science and Technology to be caring and clearly committed to students. Inspectors did not observe teachers deploying a variety of instructional and disciplinary skills with which they could effectively address student learning and behavior. Inspectors observed that in several classes students did little if any work and generally carried on disruptive conversations with their peers without benefit of effective redirection from teachers. In a primary classroom, as students were asked to sing-along with their teacher, at least four students carried on conversations instead of participating, two other children faced away from the teacher, several more stood up, and crawled or walked around the room. Rather than addressing the lack of attentiveness or re-directing students, the teacher continued and eventually rewarded one table of students with a star for behavior that did not comport with class rules or the individual teacher's directions. Noting many such observations, inspectors found that students frequently ignored their teachers and broke the posted class rules and school code of conduct.

At times, inspectors observed classroom dynamics that were shaped as much by student whim as by teacher intent. In such instances, inspectors found tenuous connections between academic goals and actual activities. While clearly armed with a solid and thorough academic design, teachers in many classrooms spent most of their time responding to disruptive student behavior instead of guiding student learning. A review of lesson plans revealed teachers over-emphasized student engagement at the expense of skill acquisition and content mastery. Teachers attempted to use student-centered methodologies, such as group work and partner discussions, in an environment that lacked the necessary structure and follow through to make these activities effective.

Both outside inspectors and Charter School Institute staff found, over the course of the school's first year, that CSST had not created an orderly school where rules and expectations are consistent and consistently enforced. The school's Board of Trustees correctly identified this issue and placed additional security personnel in the hallways to guide student behavior. In addition, the school established common sets of rules and consequences in classrooms and utilize a variety of behavioral control techniques. Teachers, administrators, and other staff now face the task of effectively implementing techniques in a way that provides students incentives and consequences; incentives to meaningfully participate in class work and consequences should they not.

CSST teachers attempted to create constructive learning time in a setting often characterized by students who display little interest in achievement. Those students interested in attaining high academic goals appeared to keep a low profile, made little comment, and occasionally suffered under peer pressure to engage in activities that are not conducive to learning.

Inspectors observed classes where two students refused to do any work and traded punches between themselves while mocking their teacher; students openly cheated on a test; children roamed class without working for most of the period; a student defiantly and verbally refused to do an assignment, to which the teacher said nothing (it is worth noting that the activity the student refused to complete was a simplistic worksheet and the kind of work far below what the school's standards demand at this level).

There was not a clear and consistent implementation of the school's mission as articulated in the charter, and it was unclear by the end of the school's first year how the mission and vision would be implemented over the term of the charter. The school deserves credit for putting in place the academic programs promised in the charter – Success For All, Wilson Reading, Chicago Math, and Special Education. However, while beginning elements of the school's science and technology curriculum were in place, these elements had yet to achieve the prominence afforded them in the school's mission and reflected in the school's name.

The school's work to refine and implement an assessment system that appropriately examines student work and the degree to which student learning approaches the school's educational goals appeared to be at the early stages. Efforts at student evaluation and diagnosis of student work and abilities were often incomplete. Evidence of student abilities did not appear to be generally used to inform instruction. Diagnosis of student difficulties lacked adequate specificity. One exception to this may be the school's Wilson Reading program, which test scores suggested had made progress with many of the students enrolled in it.

During the school's first year, the CSST Board of Trustees recognized that many of the behavioral and academic challenges facing the school required a shift in administrative leadership. The Board restructured the CSST administration. In addition, the Board has, and continues to, work with the Charter School Institute in implementing a corrective action plan designed to address building-wide disciplinary issues. The corrective action plan was implemented in mid-year and laid out specific steps the school needed to take to improve such disciplinary issues. The plan was collaboratively designed by the CSST Board and the Charter Schools Institute.

Facility

At the time of the year-end visit, CSST facilities were spacious yet incomplete. Once complete, the facilities should more effectively support the educational program outlined in the charter. While CSST made great strides in addressing facility challenges common to all charter schools, the school adapted its completed space to support instruction to limited success. While science classrooms were equipped, some lacked the infrastructure to plug in microscopes. Student access to the library during the first year was complicated by the room's use for physical education classes (the real gym wasn't completed until Spring). The school's technology lab was well stocked with computers, but the network was slow and thus hindered computer use as an instructional tool. Many of the construction delays that caused the above problems also resulted in safety lapses, such as students at times having free access to an open stairwell without railings.

School Mission and Charter Implementation

The Charter School of Science and Technology's vision statement states the school "will provide a world class education and serve as a teaching/learning laboratory designed to identify, implement, and evaluate best practices for preparing young woman and young men of the City of Rochester for successful careers in the fields of science and technology." Based on the evidence

gathered during the Institute's first year inspection, CSST had yet to set a behavioral or intellectual climate that reflects these high expectations for student achievement. Building leadership, classroom practice, student behavior, and student work reflected the school's struggle with successful implementation of the rigorous academic and conduct standards set forth in the charter application. Upon completion of its first year, CSST remained at the beginning step of building the essential elements of the school design identified in its charter.

Over the course of the first year visit, inspectors observed some instances where student learning was maximized. However, concerns over classroom dynamics wherein poor student behavior hindered academic pursuits remained.

The school's standards of conduct, as outlined in its charter, require students to "act in a responsible manner, exhibiting respect toward others; accept responsibility for their own behavior; and cooperate with the school staff in maintaining safety, order and a disciplined environment." Further, the charter states: "Our children need to be consistently reminded that their behavior directly impacts the learning environment of the school," and that the school expects students to "work hard to stay on task, do your best work, work cooperatively, follow directions, and support others in their learning." Student behavior at CSST, at the time of the year-end visit, did not exemplify those standards or expectations.

Evidence gathered over the course of visits to each of CSST's classrooms reflects the school's difficulty in solidifying an environment that reflects high expectations for student achievement. In many classrooms inspectors found academic work was often of the least demanding sort. Students completed worksheets in English, mathematics, and other subjects that provided practice in beginning level skill attainment. However, inspectors found they did not allow students sufficient opportunity to demonstrate progress against such CSST standards as:

- Collect and organize data, represent the data collected, and make predictions using the data through the use of real graphs, objects, charts, and surveys
- Tell stories involving measures, estimate quantity, solve situational problems using measures
- Demonstrate the ability to use rules and convention in writing journal essays, stories, and reports.

In some classrooms, inspectors observed students being assigned to groups for work on particular learning tasks. These groups did not appear to focus on student mastery of specific skill and knowledge, nor were they structured in the vein of research proven cooperative learning groups where each student is assigned a task and an associated product that links integrally to the work of the whole group. Instead, these were students counted into groups of 3s, 4s, or 5s and provided minimal direction and coaching as to the process and materials they were expected to produce.

CSST continues to examine the school's need for teacher professional development. The school's Board of Trustees rightfully identified the need for a teacher professional development plan that offers staff opportunities to learn and apply effective classroom management and instructional techniques. Under the corrective action plan the Board of Trustees entered into

with the Charter Schools Institute, the school has created observable improvements in student hallway behavior. Inspectors report the school's next steps should be to design discipline strategies and professional support that targets improving the skills of existing staff while promoting the hiring and retention of professionals adept at creating a learning environment where student behavior promotes learning and does not impede it.

CSST faces many challenges. Perhaps foremost is the challenge of creating a dramatic shift in student culture. Inspectors cited many instances where flawed implementation in classroom settings impeded the school's ability to fulfill the academic promise held in its charter. Finally, the Board would benefit from adopting a leadership focus that creates lasting solutions promoting a school culture emphasizing academics and student achievement – the very underpinnings of the school's charter.