VOISE ACADEMY

Pioneering a blended-learning model in a Chicago public high school

AN EDUCATION CASE STUDY

James Sloan
Visiting Research Fellow

Katherine Mackey
Research Fellow

INNOSIGHT INSTITUTE

December 2009 | E-CS-003
www.innosightinstitute.org

Innosight Institute, founded in May 2007, is a 501(c)(3) not-for-profit think tank whose mission is to apply Harvard Business School Professor Clayton Christensen's theories of disruptive innovation to develop and promote solutions to the most vexing problems in the social sector. Innosight Institute's case studies are for illustrative purposes only and do not represent an endorsement by Innosight Institute.

EXECUTIVE SUMMARY

In the fall of 2008, a new high school located in the poverty-stricken, crime-ridden neighborhood of Austin on Chicago's West Side opened its doors to 151 freshmen. Called VOISE Academy (VOISE), this school was different from many of the new high schools opening in Chicago at that time, as it blended a traditional brick-and-mortar school environment with something much less familiar—a fully online curriculum. Now in its second year of operations, VOISE, which stands for Virtual Opportunities Inside a School Environment, plans to add a new grade each year until it serves up to 600 students in grades 9 through 12.

Autonomy

VOISE was created under CPS's Renaissance 2010 initiative, whose goal was to create 100 high-performing public schools in priority communities[1] by the year 2010. CPS allows Renaissance schools more freedom in their curriculum and structure than traditional CPS schools[2] in exchange for higher levels of accountability. This increased autonomy has made it possible for VOISE to employ a fully online curriculum.

Blended learning

VOISE uses a blended-learning model (also known as a hybrid model). The school follows a traditional school calendar and daily class schedule with highly qualified teachers in the classrooms, but teachers are not the primary source of the learning content. Instead, students learn at their own pace and level through online courses that they complete on wireless laptop computers. Teachers act as the instructional guides by encouraging and mentoring students and providing individualized instruction to them on a need-by-need basis.

---

[1] Priority communities refer to 25 of Chicago's 77 neighborhoods that the IFF (formerly the Illinois Facilities Fund) prioritized as having the greatest need for quality public schools in Chicago. "Here and Now," Illinois Facilities Fund, 2004.

[2] Traditional CPS schools include neighborhood schools, magnet schools, alternative schools, vocational schools, military schools, achievement academies, selective enrollment schools, math/science academies, and special education schools.

Technological advantage

At VOISE, faculty and staff have found that online courses stimulate learning in the following ways:

- Students are more engaged because of the multimedia content, interactivity, and frequent feedback.
- The active nature of learning stimulates feelings of ownership and empowerment in students.
- Mastery-based curriculum ensures that students are learning as they progress through a course.
- Online curriculum allows greater flexibility for different learning styles.
- Rapid, unbiased feedback allows teachers to intervene as soon as students begin struggling with a concept.

Economically viable

CPS funds Renaissance schools on a per-pupil basis. Given the flexibility of the per-pupil funding, administrators can operate VOISE with CPS dollars alone.

Student performance

VOISE's freshman on-track rate[3] after the first year was 70 percent,[4] which was above Chicago's average freshman on-track rate of 64 percent.[5] This placed VOISE in the top quintile of CPS high schools.

---

[3] CPS considers 9th graders "on track" if they have accumulated at least five course credits and failed no more than one semester course in a core subject (English, math, social science, or science) during the school year. According to CPS, "[f]reshmen who are designated as on track are three-and-a-half times more likely to graduate from high school in four years than students who are off track." "On Track Rate Fact Sheet," Chicago Public Schools, January 18, 2008, http://research.cps.k12.il.us/cps/accountweb/Reports/Fact_Sheets.html (accessed December 7, 2009).

[4] At the time this case study was written, CPS was calculating VOISE's freshman on-track rate at 67.1 percent, whereas the school was calculating it at 70 percent.

[5] "Freshman On Track Rates 2006–2009," Chicago Public Schools, November 9, 2009, http://research.cps.k12.il.us/export/sites/default/accountweb/Reports/Citywide/ontrk_report_citywide_2009.pdf (accessed December 7, 2009). "High School Freshman On Track Rates 1997–2009," Chicago Public Schools, November 9, 2009, http://research.cps.k12.il.us/cps/accountweb/Reports/allschools.html (accessed December 7, 2009).

VOISE ACADEMY

Pioneering a blended-learning model in a Chicago public high school

This case study details how a new high school deployed online learning to create a blended-learning model. The findings hint at how online learning may evolve as it spreads to the mainstream and increasingly serves students in low-income, urban areas.

At 7:30 a.m., students in Chicago's Austin neighborhood rush past large brick apartment buildings and abandoned warehouses with broken windows. They wind down littered streets past tall iron fences protecting row house yards to arrive at the austere, four-story building that houses VOISE Academy High School (VOISE). Students pass through a metal detector as they enter the building and then climb the stairs to the third floor where VOISE is located. That is where most of the similarities between VOISE and other urban high schools end.

The principal, Todd Yarch, and assistant principal, Dr. Tiffany Allison, greet each of the arriving students by name. "Tuck in that shirt, Jeffrey," Yarch says. The school's strict dress code requires neatly worn uniforms, in part to eliminate gang apparel. Yarch issues similar reminders to several other students, all freshmen, as they hurry through the well-scrubbed hallways. Oddly, perhaps, they do not stop at lockers to retrieve textbooks. Instead, during the homeroom period at the start of each day, teachers distribute one wireless laptop computer to each student. Computers are the gateway to English, history, science, and mathematics courses—and every other course at the school.

The use of computers and a fully online curriculum combined with a highly structured learning environment are what make Virtual Opportunities Inside a School Environment, or VOISE, Academy an atypical school.

The seeds for VOISE

VOISE was the brainchild of Dr. Sandra Atols, a Chicago Public Schools (CPS) employee. The genesis of Atols's vision occurred many years before the school opened in the fall of 2008. Atols's son, who suffered from a learning disability, had struggled to succeed in the public school system, and Atols had noticed that technology helped her son learn better. Intrigued by the potential of technology to improve education on a large scale, Atols entered a doctoral program where she studied the application of technology to learning.

Atols received her doctorate in 2001 and subsequently accepted a job with the newly created Illinois Virtual High School (IVHS), a state-run school that offered supplemental online courses[1] to public school students in Illinois. After working for IVHS for three years, Atols took a new job as the manager of distance learning for CPS. She observed that CPS's virtual school, called CPS Virtual High School (CPS-VHS), had a lower percentage of students completing courses with a passing grade than IVHS. After reading a number of studies about online learning, Atols determined that students in online courses could learn as much, if not more, than students in traditional classes, but that student satisfaction and success in online courses increased most markedly when adequate support was available to them and they were held accountable for their work.

Atols sought to apply these insights to improving CPS-VHS, which offered supplemental online courses and test prep classes to students in CPS high schools and middle schools. She suggested that CPS high schools and middle schools offer online courses during the school day, enlist trained mentors to supervise the classes, require student attendance, and make the grades count on student transcripts. After these changes were implemented by most CPS schools, the percentage of students who passed CPS-VHS courses jumped from 60.7 percent in the fall of 2004 to 83.6 percent in the fall of 2005 (see Figure 1).[2] This number was roughly the same as IVHS's success rate.

Atols then set out to help other Chicago-area schools use technology more effectively, as CPS-VHS had done. Atols noted that many schools had computers that went largely unused or that were used only for word processing and Internet searches. Despite her experience with CPS-VHS, she found it difficult to convince administrators at traditional CPS schools[3] to make innovative changes in the ways that they were using technology. Many administrators considered computers to be

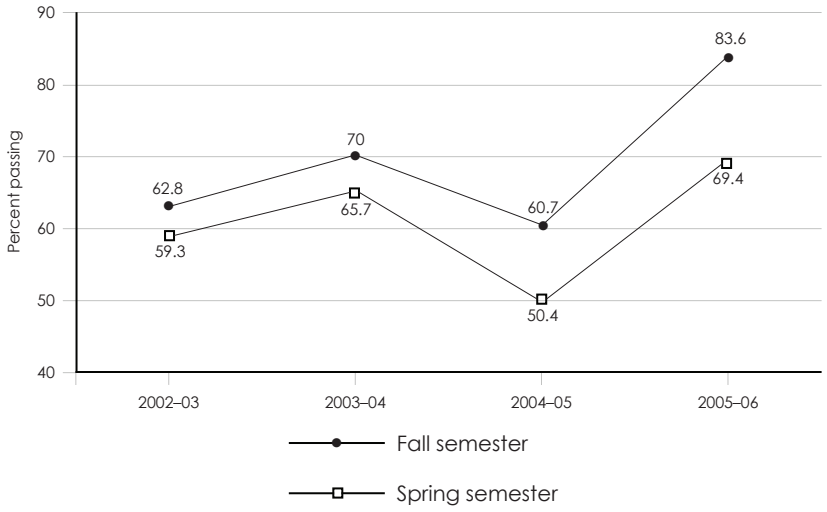
---

[1] Supplemental online learning programs, such as IVHS and CPS-VHS, serve students enrolled in brick-and-mortar schools. Students generally enroll in supplemental online courses because a course is not offered at their brick-and-mortar school or because it is offered at an inconvenient time. They also enroll in supplemental online courses to recover credits for graduation.

[2] Tom Clark and Elizabeth Over, "Ensuring Learner Success in CPS-VHS Courses: 2004–2005 Report and Recommendations," TA Consulting, March 2006.

[3] Traditional CPS schools include neighborhood schools, magnet schools, alternative schools, vocational schools, military schools, achievement academies, selective enrollment schools, math/science academies, and special education schools.

Figure 1 Percentage of CPS-VHS courses completed with a passing grade in fall and spring semesters, 2002–05



Source: TA Consulting, 2006

a supplement to their traditional education processes—a sustaining innovation.[4] Atols grew frustrated with this resistance to change and decided to demonstrate the power of technology in the classroom by starting her own school.

Road to realization

In early 2007, Atols recruited several associates from IVHS and CPS-VHS to help her create a new school in Chicago that would become VOISE. CPS directed Atols and her team to develop the new school through a citywide program called Renaissance 2010, whose goal was to create 100 high-performing public schools in priority communities[5] by the year 2010. Renaissance schools had more freedom in both curriculum and structure than did traditional CPS schools. In return

[4] A sustaining innovation improves the performance of existing products or services along the historically valued measures of performance. Some sustaining innovations are dramatic breakthroughs whereas others are routine, incremental improvements. But as long as the purpose of these innovations is the same—to sustain the performance improvement trajectory in the established field—they are both sustaining innovations. Creating better schools and improving reading interventions in schools are examples of sustaining innovations in education.

[5] Priority communities refer to 25 of Chicago's 77 neighborhoods that the IFF (formerly the Illinois Facilities Fund) prioritized as having the greatest need for quality public schools in Chicago. "Here and Now," Illinois Facilities Fund, 2004.

for this increased autonomy, CPS held Renaissance schools to higher levels of accountability. For example, CPS required every Renaissance school to reach pre-established benchmarks of student achievement every five years in order for that school's charter to be renewed for another five-year term.

CPS allowed schools developed through Renaissance 2010 to use one of three governance models: charter, contract, or performance. Each of these models offered varying degrees of autonomy from CPS's policies. Charter and contract schools enjoyed freedom from some CPS policies, such as those contained in the teachers' union agreement. By contrast, performance schools, which were operated by CPS, had less freedom than charter and contract schools because they shared most of their policies with traditional CPS schools. They did, however, have greater flexibility than traditional CPS schools in many areas, including curriculum, school schedule, and budget.[6]

Atols favored the performance model for her school. She thought that because CPS gave charter schools the option of selectively enrolling students, setting up a successful charter school might not demonstrate that a school using online learning could help *any* student succeed. CPS required performance schools, however, to have an open-enrollment policy—any child could enroll in a performance school regardless of her previous academic performance or where she lived in the district.[7] For this reason, Atols believed that a performance school would be more likely to prove her theories about online learning. In the spring of 2007, Atols and her team began working on a proposal for the new school, which they hoped to open in fall of 2008.

An innovative learning model

Atols and her team initially wanted to create a full-time virtual high school where students would not have to be physically present in class. Their vision for the new

---

[6] For a chart detailing the similarities and distinctions between the three school types, see http://www.ren2010.cps.k12.il.us/docs/RFP_Introduction.pdf, p. 11 (accessed December 7, 2009).

[7] CPS uses an overlay attendance boundary to ensure local representation in Renaissance performance schools. When an overlay attendance boundary is drawn, performance schools must reserve up to 50 percent of seats for students residing within the boundary; if student demand from within the boundary exceeds 50 percent, a lottery must be conducted to allot 50 percent of seats to students residing in the boundary. A second, citywide lottery must then be conducted to allocate the remaining 50 percent of seats. "2009 Request for Proposals," Chicago Public Schools, May 2009, p. 15, http://www.ren2010.cps.k12.il.us/docs/RFP_Introduction.pdf (accessed December 7, 2009).

school evolved, however, when they observed that other design teams for new schools, such as K12, Inc.'s Chicago Virtual Charter School, were having difficulty gaining approval from CPS to establish degree-granting virtual schools because of the Illinois State Legislature's School Code, which required students to receive a minimum of 300 minutes per day of in-class instruction.[8]

Because of this seat-time statute, Atols and her team decided to develop a hybrid model for the new school that would incorporate a face-to-face teacher component with a rigorous online curriculum. In this model, called blended learning (also known as a hybrid), students would learn primarily through courses on the Internet but also have in-person supervision from a teacher during a structured school day.[9] By combining elements of online learning and conventional classroom learning, the team hoped to address the needs of students for whom neither model seemed entirely adequate. Accordingly, the name of the school, Virtual Opportunities Inside a School Environment, emphasizes the hybrid nature of the program.

Illinois's minimum seat-time statute was a barrier to creating a full-time virtual school.

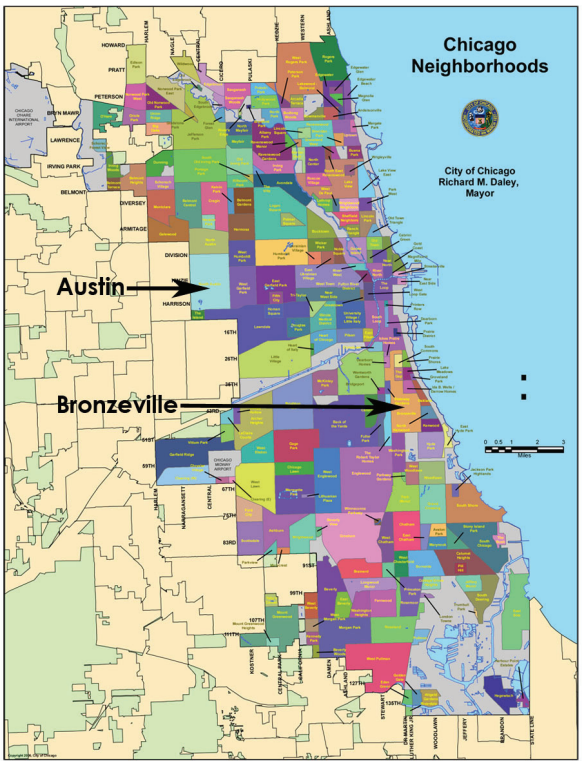
The school could offer a fully online curriculum because the flexible nature of CPS policies gave performance schools freedom to determine and implement their own curriculum as long as they met state and CPS learning standards. Although these standards provided some specific guidelines for what CPS students should know and be able to do in given subjects by grade level, they did not specify how the materials should be taught nor require the schools to use specific textbooks—or any textbooks at all.[10]

[8] For the complete text of 105 ILCS 5/18-8.05 (F), see http://www.ilga.gov/legislation/ilcs/ilcs4.asp?DocName=010500050HArt%2E+18&ActID=1005&ChapAct=105%26nbsp%3BILCS%26nbsp%3B5%2F&ChapterID=17&ChapterName=SCHOOLS&SectionID=49211&SeqStart=121000000&SeqEnd=124100000&ActName=School+Code%2E (accessed December 7, 2009). This law has since been amended to allow Illinois school districts to establish virtual learning programs. For the complete text of this amendment, see http://www.ilga.gov/legislation/billstatus.asp?DocNum=2448&GAID=10&GA=96&DocTypeID=HB&LegID=44612&SessionID=76 (accessed Dec-ember 7, 2009).

[9] VOISE follows a typical CPS schedule with students attending seven classes on a block schedule seven hours per day on Mondays, Tuesdays, Thursdays, and Fridays and four hours on Wednesdays. CPS allowed approximately 60 schools to modify their schedules to allow half-days by adding time to the rest of the school days so that they still provided students with an average of 300 minutes per day of learning.

[10] "Chicago Public Schools Policy Manual," Chicago Public Schools, June 2007, section 302.7, p. 6, http://policy.cps.k12.il.us/documents/302.7.pdf (accessed December 7, 2009).

Figure 2 Map of Chicago neighborhoods



Searching for the school site

The team first had to identify a location for the school. At the time, the district required new performance schools to use existing CPS facilities, many of which were vacant buildings occupied formerly by schools that CPS had shut down because of poor student test scores.[11] Of the three CPS facilities that were available to house performance schools in 2008, the team zeroed in on a building in the Bronzeville community (see Figure 2 for a map of Chicago neighborhoods). Bronzeville was a neighborhood on the South Side of Chicago with higher-than-average poverty, but with areas that were becoming increasingly gentrified by a recent influx of middle-class residents. The CPS building where the team hoped to establish the

[11] CPS policy has since changed to let performance schools choose from a wider array of facilities, in a way similar to charter and contract schools.

new school, which would serve students from all over Chicago, was located in one such gentrified area in Bronzeville, known as "The Gap."

CPS had established community councils in neighborhoods with available CPS school facilities starting in 2004. In addition to reviewing proposals for new schools, these Transition Advisory Councils (TACs) hosted local forums to discuss the proposals and made recommendations to CPS based on the consensus of the community. The Bronzeville TAC soon made it clear that the community at large was unwilling to accept VOISE. Residents believed that adequate high school options already existed in the area and were concerned that the new school's open-enrollment policy would attract "less desirable" students to the neighborhood, according to reports by several CPS officials.

CPS officials thought Atols's concept held promise, but they were not prepared to open a new school in the face of this opposition. The district instead directed the team to consider opening a school in Austin, a priority community for Renaissance 2010 on the West Side of Chicago.

Education in the Austin community

The Austin neighborhood was marred by poverty and violence. Of the roughly 60,000 residents in the predominantly African-American neighborhood, nearly 30 percent lived below the federal poverty threshold[12] and nearly 90 percent of the children were eligible for free or reduced-priced lunch under the National School Lunch Program. Nearly half of the households with children in the community were single-parent homes. Just 60 percent of Austin's residents aged 25 and older had completed high school, and only seven percent of these individuals had earned a bachelor's degree. Austin was also one of the most difficult districts in Chicago to police, with a homicide rate more than two times the Chicago average and eight times the national average.[13] Given the circumstances, Austin's youth often received limited structure and educational support at home and had few positive role models

[12] This statistic refers to the poverty threshold calculated by the U.S. Census Bureau. In the 2000 census, for a family of three, this threshold equated to income of $13,740 per year.

[13] The City of Chicago is divided into 25 districts. Austin, District 15, is a 2.8 square mile section corresponding roughly to zip code 60644. It had the fifth-highest murder rate in the city in 2008 according to Chicago Police Department.

in the community (see Figure 3 for Austin, Bronzeville, "The Gap," Chicago, and U.S. demographic breakdowns).[14]

The closure of Austin High School left students with academically inaccessible and geographically inconvenient educational options.

Austin was also in need of a neighborhood high school. In 2004, after repeated cycles of probation and remediation, CPS had begun the process of phasing out Austin High School by ceasing to enroll new grade levels. When the school stopped enrolling freshmen, CPS reassigned students who would have attended the school to five different high schools located in neighborhoods up to 10 miles outside Austin.[15] All five of these alternate schools had been on probation since 2003; all had worse freshman on-track rates[16] than Austin High School; and not one had achieved NCLB Adequate Yearly Progress in any year since 2004.[17]

The Austin students had the option to attend other CPS schools, but in most cases they lacked the means. Many of these schools were academically out of range or required long commutes that could be unsafe and unaffordable.

First, some CPS schools did not offer open enrollment, which meant that in many cases students were required to perform well on tests to gain admission. Many Austin students were performing below grade level in many subjects and would have difficulty meeting the requirements.

Second, even if the Austin students chose to attend open-enrollment schools, daily transportation across town would most likely be a financial burden for their

[14] "American FactFinder fact sheet: zip code tabulation area 60644," U.S. Census Bureau, 2000, http://factfinder.census.gov/home/saff/main.html?_lang=en (accessed December 7, 2009). "Fiscal Year 2010 Budget Book," Chicago Public Schools, September 2009, p. 249, http://www.cps.edu/About_CPS/Financial_information/Documents/0910ProposedBudget/0910_Budget.pdf (accessed December 7, 2009). "2008 Murder Analysis in Chicago," Chicago Police Department, 2008, https://portal.chicagopolice.org/portal/page/portal/ClearPath/News/Statistical%20Reports/Homicide%20Reports/2008%20Homicide%20Reports/MA08.pdf (accessed December 7, 2009).

[15] These high schools were Wells, Clemente, Marshall, Manly, and Collins.

[16] CPS considers 9th graders "on track" if they have accumulated at least five course credits and failed no more than one semester course in a core subject (English, math, social science, or science) during the school year. According to CPS, "[f]reshmen who are designated as on track are three-and-a-half times more likely to graduate from high school in four years than students who are off track." "On Track Rate Fact Sheet," Chicago Public Schools, January 18, 2008, http://research.cps.k12.il.us/cps/accountweb/Reports/Fact_Sheets.html (accessed December 7, 2009).

[17] "AYP Status Overtime 2004–08," Chicago Public Schools, 2008, http://research.cps.k12.il.us/cpsaccountweb/Reports/allschools.html (accessed December 7, 2009). "CPS Probation Status Overtime 2003–10," Chicago Public Schools, 2009, http://research.cps.k12.il.us/cps/accountweb/Reports/allschools.html (accessed December 7, 2009). "High School Freshman On Track Rates 1997–2009," Chicago Public Schools, November 9, 2009, http://research.cps.k12.il.us/cps/accountweb/Reports/allschools.html (accessed December 7, 2009).

families given the poverty level in the neighborhood. Open-enrollment Renaissance schools also gave priority to students residing in the community where the school was located.

Third, attending schools in other neighborhoods was often not the safest or most practical option for the Austin students. Some Chicago communities were not amenable to having students from "the other side of town" brought into their neighborhoods, as was evidenced by the design team's experience in Bronzeville, and traveling to different neighborhoods often involved traversing gang boundaries, which could be dangerous.

CPS had opened two small schools in the old Austin High School building starting in 2006, but both of these schools had specific academic focuses that catered to a limited subgroup of students. The Austin Polytechnical Academy, which had opened in the fall of 2006 despite the disapproval of the Austin TAC, is a college-preparatory high school that trains students for careers in high-tech manufacturing.

Figure 3 Austin, Bronzeville, "The Gap," Chicago, and U.S. demographic breakdowns

	Austin[1]	Bronzeville[2]	"The Gap"[3]	Chicago[4]	U.S.
Total population	59,059	47,073	6,161	8,272,768	281,421,906
Percent of population that is black or African American	95.3%	38.6%	58%	18.9%	12.3%
Percent of households with children that are single-mother[5]	47%	34%	27%	19%	19%
Percent of population that is high school graduate or higher	60.7%	68%	75%	81%	80.4%
Percent of population with bachelor's degree or higher	7%	24.2%	34%	30.1%	24.4%
Mean household earnings	$40,575	$48,317	$53,518	$69,118	$56,604
Percent of households with public assistance income	15.5%	8%	5%	3.6%	3.4%
Percent of families below poverty level	26.7%	24.9%	14.9%	7.9%	9.2%
Percent of students with free or reduced-priced lunch eligibility	89%[6]	84%[6]		81%[6]	42.4%[7]
Median home value	$96,200	$171,700	>$225,000	$166,200	$119,600
Homicide rate, 2008 (per 100,000)	41.4[8]	5.1[8]		18[8]	5.4[9]

Notes

[1] Austin refers to 60644 zip code.
[2] Bronzeville refers to 60616 zip code.
[3] "The Gap" refers to the 1/2 square mile surrounding the potential school in Bronzeville, census tracts 3506, 3507, 3508, 3509.
[4] Chicago refers to the Chicago Primary Metropolitan Statistical Area (PMSA) defined by the U.S. Census.
[5] Casewriter calculation from census data: single-mother households with children / total households with children
[6] Casewriter calculation based on data from "FY09 Eligibility," Illinois State Board of Education, 2009, http://www.isbe.state.il.us/nutrition/excel/FY09_eligibility.xls (accessed December 7, 2009).
[7] "Digest of Education Statistics: 2007," National Center for Education Statistics, 2007, http://nces.ed.gov/programs/digest/d08/tables/dt08_042.asp (accessed December 7, 2009).
[8] "2008 Murder Analysis in Chicago," Chicago Police Department, 2008, https://portal.chicagopolice.org/portal/page/portal/ClearPath/News/Statistical%20Reports/Homicide%20Reports/2008%20Homicide%20Reports/MA08.pdf (accessed December 7, 2009).
[9] "Crime in the United States, 2008," U.S. Department of Justice, 2009, http://www.fbi.gov/ucr/cius2008/documents/aboutcius.pdf (accessed December 7, 2009).

Source: U.S. Census Bureau, 2000 unless otherwise noted

The Austin community came to see VOISE as a way for its children to be on the cutting edge of technology.

The second small school, the Austin Business and Entrepreneurship Academy, which had opened in the fall of 2007 after a year-long struggle for approval from the Austin TAC, is a college-preparatory high school that focuses on teaching students the fundamentals of business. If CPS were to authorize VOISE to open in the fall of 2008, then it would be the third and final school housed in the building and the only comprehensive high school located in Austin. The team members hoped that the school's accessibility to Austin students and its comprehensive curriculum would help mitigate the problems created by the original high school's closure.

To win community support for the new school, the team attended town hall meetings, picnics, church gatherings, and other community events in Austin to discuss its idea for VOISE. Initially, some Austin parents did not understand the technology and were concerned that their children would be parked in front of computers all day playing games and browsing the Internet without adult supervision. The team assuaged this fear and others by explaining how the school would work and answering the many questions that the community members posed. The team also looked for ways in which the new school could benefit the Austin community. For example, it agreed to provide each student's family with a refurbished desktop computer so that the students would be able to work on their coursework at home in the evenings. The team also visited every 8th-grade class in Austin to inform the students about the new school and gauge their interest.

As the team marketed the new school, the Austin community came to see VOISE as a way for its children to be on the cutting edge of technology. The team's hard work and perseverance finally paid off in the spring of 2008 when the Austin TAC gave its support to VOISE, which CPS then approved to open that fall.

Faculty, staff, and students

When the team submitted its design to CPS, it included nominations for several key administrative positions at the new school. The team nominated its own members for the positions of principal, assistant principal, and lead teacher, who would serve as an experienced mentor to the other teachers. The team's candidate for principal did not meet CPS approval, however, so the team began an exhaustive search to find a suitable candidate for the position. Several months later in the spring of 2008, the team identified a likely candidate in Todd Yarch, a graduate of New Leaders for New Schools, a program that trains educators to become principals in urban public schools. Both the team and CPS agreed that Yarch's experiences and qualifications made him an ideal candidate for the position of principal, as he had taught for eight

years in CPS high schools, possessed solid management skills, was familiar with technology, had a natural rapport with students, was reform-minded, and had an entrepreneurial mindset that aligned with that of Atols.

After CPS hired Yarch, it had little input regarding selections for the rest of the faculty and staff positions at VOISE. That role fell to Atols and Yarch, who approved the hiring of the team's lead teacher nomination, Bonita Walker-Jones, an online teacher and course designer at IVHS. They did not hire the team's nomination for assistant principal because they felt that she was not the best fit for that position despite her involvement on the design team. After looking at several other candidates, they ultimately hired Dr. Tiffany Allison, who had experience as both a high school teacher and administrator, to serve as the assistant principal.

VOISE was subject to CPS's class-size maximum of 28 students per teacher.

With the key administrative roles filled, Atols, Yarch, and Allison began hiring teachers. CPS required teachers in performance schools to be state-certified, compensated by the school according to CPS guidelines, and registered as union members, but it did not play a role in hiring or approving them. Because VOISE would open with an initial 9th-grade class of up to 150 students and add a new grade level each year until it served up to 600 students in grades 9 through 12, the team needed to hire at least five additional teachers to be in compliance with the district's maximum class size of 28 students per teacher for all CPS high schools.[18] As each teacher was hired, that teacher was allowed to participate in hiring decisions in order to form a cohesive team of faculty and staff to guide VOISE through its first year.

The design team's extensive community outreach helped attract 250 applicants for 150 available slots in the entering class of freshmen. More than 90 percent of the applicants were from Austin, a statistic credited to the team's marketing focus on the immediate community. The school admitted and ultimately enrolled 151 students, of whom 95 percent were from Austin, in the fall of 2008.

The VOISE model in practice

In the school's first year, Yarch and his team worked hard to establish the two key pillars of the VOISE model: a strong culture of hard work and an individualized learning model enabled by an online curriculum.

[18] "Chicago Public Schools Policy Manual," Chicago Public Schools, 1995, section 301.2, http://policy.cps.k12.il.us/documents/301.2.pdf (accessed December 7, 2009).

VOISE's culture of high expectations was similar to that of other successful school models, such as KIPP.

To create a high-performance culture, the faculty and staff imposed strict standards on the students, did not accept excuses, and stressed that everyone could achieve. School uniforms, clean hallways, and strict enforcement of good behavior made it clear that faculty and staff expected students to work, not play. College banners lined the walls of the school and hung in the classrooms as a reminder that higher education was an attainable goal for each student. The VOISE model also provided the support necessary to help students achieve. In addition to the regular school day, the faculty and staff offered students extra learning time with teachers on weekdays after school until 5 p.m. and Saturdays from 9 a.m. to noon.[19] This extra learning time was a critical element in helping the students—many of whom were performing below grade level—develop the knowledge, skills, and character needed to succeed in school and beyond. The faculty and staff theorized that setting high expectations and offering encouragement and support would give the students reasons to work hard and develop good study habits that their environment had not previously demanded of them. Yarch and his team hoped that as this cycle of hard work, feedback, success, and reinforcement was repeated, these new processes would solidify into a sustainable high-performance culture at VOISE.

This high-performance culture is similar to that of other new school models—such as the Knowledge is Power Program (KIPP), a network of free open-enrollment college-preparatory public schools in underprivileged communities throughout the United States. What differentiates VOISE from these other school models is the technology-enabled learning model employed inside the physical classroom.

On a typical school day, for example, the students in Walker-Jones's Freshman Academy class might be learning how to write effective essays—with no lecturing. The students work individually and at their own pace on an online lesson on their laptops. The school uses online courses created by Apex Learning (Apex), a privately-held provider of Internet-based curriculum for high school students that supplies several of IVHS's course offerings including all of its Advanced Placement (AP) courses. Each Apex course is organized into five to seven units, each with three to six lessons that comprise a number of activities (e.g. readings, journals, labs, discussions, projects, explorations, reviews, and embedded assessments). These

[19] It is possible for the school to offer after-school and Saturday morning make-up classes because CPS and Chicago Teachers Union policies allow schools to extend the school day and week for as long as the teachers agree to work. The teachers are compensated for the additional time.

activities are presented through multiple representations of information (e.g. text, images, audio, video, animations, and interactive elements) that support different ways of learning.

Because the online curriculum is the primary source of the learning content, Walker-Jones focuses her time and attention on encouraging and mentoring the students and providing them with individualized instruction on a need-by-need basis. With the exception of the essays and study sheets that Walker-Jones grades, the students instantly receive the results of the Apex computer-scored quizzes and assignments that they complete, which provide students with immediate feedback on how they are doing. As such, students are rewarded daily for their hard work rather than waiting days or weeks to receive a grade. Only after a student has received a score of 70 percent or higher on a computer-scored assessment can the student move to the next lesson or unit.[20] This mastery-based system ensures that students are learning as they progress through a course.

The results of the computer-scored assessments are also instantly reported to Walker-Jones so she can monitor the students' individual progress and provide one-on-one assistance when she sees that a student is struggling with the material. Based on the reported scores, Walker-Jones can assess the degree of assistance that the students need. She allows the highest-performing students, for example, to work more independently on their lessons and even assigns them more challenging work. In contrast, Walker-Jones needs to give more individual attention to the lowest-performing students. Because she is armed with timely data from the computer-scored assessments, she can offer those students not just more of her time, but also more targeted help for their specific needs. Classes with a large number of remedial students are often co-taught with a special education teacher in order to ensure that all students receive sufficient individualized help.

Patrick Staley, a social studies teacher, organizes his World Studies class differently. Like Walker-Jones, his course design is based on the Apex framework, but he supplements the regular Apex lessons with lectures where he believes they will be helpful to the students. Specifically, Staley often uses a SMART Board[21]

BENEFITS OF ONLINE LEARNING:

- Mastery-based curriculum ensures that students are learning as they progress through a course.
- Instant feedback allows teachers to provide timely and indivudualized help to students.

[20] Students may retake the computer-scored assessments—which are randomized to present a different version on each attempt—up to three times before the assessment locks and teacher intervention is required.

[21] A SMART Board is a large whiteboard on whose surface a computer's desktop is projected; users control the computer using a pen, finger, or other device. In addition to a SMART Board, each classroom at VOISE is also equipped with a teacher's station, projector, and networked printer.

to introduce key concepts about a particular topic to his class before having the students move individually through an Apex lesson relating to that topic. Staley also supplements the regular Apex lessons with projects of his own design. For example, after the students have completed an Apex lesson about ancient Greece, he might have them work in small groups to create their own imaginary city-state using Google SketchUp, a 3D modeling program. Other projects might help students learn how to research topics online, make Microsoft PowerPoint presentations, and design Web pages.

"I can't imagine that if it was optional for students to come in on Saturday at any of my other schools, any of them would."

—Anna Cabral, algebra teacher

If students try to access Web sites that are not approved by the district during classes, an audible alarm lets everyone in the classroom know that those students are not on task.[22] If a teacher catches a student abusing online privileges, the teacher confiscates that student's laptop. The student must then work offline for the remainder of the class period. Every classroom has a content-specific set of printed textbooks on-hand for this purpose. Students view the loss of their computer as a punishment.

At the end of the school day, the students return to their homeroom where they report to their teacher about their progress for the day, copy any materials that they will need to complete that day's homework to USB drives, and turn in their laptops. After school, some of the students join students from the other two schools that share the building for "campus" sports and clubs.

Many students also avail themselves of the extra time for after-school and weekend help, which is facilitated by two or three teachers. Some students are assigned to attend these sessions for specific tutoring, whereas others show up voluntarily to get ahead in their coursework. In the first year of operations, 20 to 30 students stayed after school each day to do homework, and up to 40 students—nearly a third of the student body—showed up on Saturdays.

The faculty and staff marveled at the large voluntary turnout. "I can't imagine that if it was optional for students to come in on Saturday at any of my other schools, any of them would," algebra teacher Anna Cabral said.[23] Administrators credited the large and often voluntary turnout to the students' appreciation for

[22] Although the district's IT Department aggressively identifies and blocks inappropriate Web sites, the students still manage to find ways around the CPS firewall.

[23] Sara Bernard, "Chicago's VOISE Academy Launches Amid Tech Challenges," *Edutopia,* February 18, 2009, http://www.edutopia.org/ikid-voise-academy-online-education-part-two (accessed December 7, 2009).

the safe and nurturing environment at VOISE—both of which stood in stark contrast to most of the students' chaotic and harsher home environments.

Funding

Per-pupil funding gave VOISE the needed flexibility to allocate money for computers and online curriculum.

Renaissance schools function under a per-pupil funding model, which means that CPS gives each school a set amount of funding for each student enrolled in the school. In contrast, traditional CPS schools work under a quota-based funding model, which means that CPS allocates teachers and support staff to each school based on the district's set student-teacher ratio requirements but also gives each school a set amount of funding for non-personnel items (e.g. textbooks, supplies, repairs, and equipment) based on the number of students enrolled in the school. Because per-pupil funding is not tied to positions, it has the advantage of giving schools more flexibility in deciding how to use their budget dollars (see Figures 4 and 5 for the pro forma cash flows of per-pupil and quota-based funding models).

In addition to the per-pupil funding, the Renaissance Schools Fund (RSF)[24] also provides supplemental start-up and early implementation funding for a subset of Renaissance schools. RSF chose not to fund VOISE because it was concerned that the school had an unclear instructional model, an inexperienced team, and no specific plan to remediate the severe learning gap of Austin students. Nevertheless, Yarch and his team found that they could operate VOISE with CPS dollars alone given the flexibility of the per-pupil funding. One-time start-up money totaling $145,000 from CPS was also helpful to cover non-recurring purchases such as furniture, fixtures, and equipment.

Yarch and his team knew that CPS would not regulate how they allocated the school's budget dollars as long as they adhered to all CPS policies, including hiring enough teachers to meet the district's set student-teacher ratio requirements. By hiring primarily teachers with few years of teaching experience and purchasing few textbooks, Yarch and his team found that they had freed up money that they could use to pay for computers and online curriculum. Although CPS did not micromanage how the school spent its budget dollars, it did require the school to use CPS suppliers for many of its purchases. This requirement meant that Yarch

[24] The Renaissance Schools Fund (RSF) is the private partner in fundraising, strategy, and accountability to Renaissance 2010. RSF participates in the new school evaluation process and selectively awards grants to new Renaissance schools.

and his team did not have the option of shopping around for the best deals or using their own preferred suppliers when outfitting the school. Fortunately, Dell, a CPS supplier, agreed to lease Dell D630 laptops to the school for $350 each per year, and PC Rebuilders, another CPS supplier, agreed to sell refurbished desktop computers to the school for $150 each. Yarch and his team were also able to reach an agreement with Apex to offer the school unlimited courses for $100 per student per year.

Per-pupil funding gave the school more flexibility in allocating budget dollars, but it also had drawbacks. Small schools, such as VOISE, received less total funding than large schools despite having many of the same fixed operating costs (e.g. food and transportation services, network support, accounting, human resources, payroll,

Figure 4 VOISE's pro forma cash flow for the 2009–10 school year

Item	Income
Per-pupil funds ($7424 * average students)	$2,056,448
Facility fee for using CPS facility ($1,549 * average students)	-$429,073
Administration deduction for CPS services (4.4% of per-pupil allocation)	-$90,579
Small school supplement ($300 * average students)	$83,100
SGSA ($770 per free and reduced-priced lunch student)	$206,360
NCLB (formula based on percent poverty)	$72,252
5 special ed teachers (formula based on special ed situations)	Paid directly by CPS
Start-up funding (for equipment, etc.)	$145,000
TOTAL	**$2,043,508**

Item	Expenses
Laptops (leased at $350 per student per year)	$104,370
Apex curriculum ($100 per student per year)	$29,400
General ed teachers and administrators: salaries and benefits	$1,832,043
5 special ed teachers	Paid directly by CPS
Refurbished desktops ($150 each, 150 new students)	$22,500
Textbooks (classroom set for English, chemistry, and history)	$13,000
Miscellaneous (SMART Boards, equipment, etc.)	$42,195
TOTAL	**$2,043,508**

Basis:

Total students	294	Projected number of students for 2009–10
"Average" students	277	Number funded in per-pupil calculation
General ed students	237	Actual students with no special ed needs
Special ed students: LRE 1	26	Count as 100 percent of a student for per-pupil calculation
Special ed students: LRE 2	20	Count as 59.22 percent of a student for per-pupil calculation
Special ed students: LRE 3	11	Count as 18.42 percent of a student for per-pupil calculation

Sources: CPS School Segment Report, CPS Budget Book, VOISE financial information, casewriter estimates and analysis

Figure 5 Pro forma cash flow of quota-based funding model

Item	Income
13 teachers, 1 counselor, 1 librarian	Paid directly by CPS
5 special ed teachers	Paid Directly by CPS
Textbooks ($105 per student per year)	$30,870
TOTAL	**$30,870**

Sources: CPS School Segment Report, CPS Budget Book, VOISE financial information, casewriter estimates and analysis

purchasing, and legal). CPS helped small schools combat some of these costs by offering many administrative services on a fee-basis or as a percentage of the total school funding. It also provided a stipend to schools with 600 or fewer students.[25]

First-year results and challenges

A year after VOISE's opening, Atols was excited as she watched the school's rising sophomores giving orientation to the school's incoming freshmen—thus beginning the process of instilling the school's culture of high expectations and hard work in a fresh round of students. She reflected on some of the technological challenges that the school had faced during its first year.

Given the poverty in Austin, many students entered VOISE with minimal computer experience. As a result, teachers had spent significant time during the first semester helping students understand computing basics, from sending emails to executing simple tasks in Microsoft Word. Faculty and staff therefore revised the freshman curriculum to include computer training.

The old Austin High School building had not been equipped to house a technology-intensive school. When the school first opened, it became apparent that the classrooms needed more electrical outlets for students to plug in their laptops. Power strips were placed in each of the classrooms, but they created a safety concern because students had to step over the power cords that cluttered classroom floors. Administrators had the building retrofitted with more electrical outlets in the summer following VOISE's first year.

[25] "2009 Request for Proposals," Chicago Public Schools, May 2009, pp. 20–22, http://www.ren2010.cps.k12.il.us/docs/RFP_Introduction.pdf (accessed December 7, 2009).

The administrators had fulfilled their promise to provide each student with a refurbished desktop computer for use at home, but they were unable to provide Internet access to all the households so that students could log on to the school's networks from home. Most of the students came from households that could not afford monthly broadband access. The estimated annual cost—totaling more than $100,000—was an expense that the school could not afford.

VOISE's freshman on-track rate was 70 percent compared to CPS's rate of 64 percent.

Early in the year, several laptops were stolen, despite the school's practice of keeping laptops locked securely in the building when school was not in session. Fortunately, VOISE's insurance policy had helped replace those laptops, and administrators had purchased a few refurbished models as backups.

Despite these challenges, the school had enjoyed a promising first year. The freshman on-track rate for the school was 70 percent,[26] which was above Chicago's average freshman on-track rate of 64 percent.[27] This rate placed VOISE in the top quintile of CPS high schools. CPS calculated a dropout rate for the school of 4.6 percent compared to Chicago's average dropout rate of 10.7 percent.[28] The school contends that several of these "dropouts" were actually transfers; the four students who had left VOISE because they purportedly disagreed with the strictness of the rules returned for their 10th-grade year. All of the teachers returned for their second year as well.

A model for future schools?

With such promising first-year results, Atols was frustrated after the first year because CPS would not allow her to open a VOISE II for several more years. Although many of the statistics that CPS was using to assess new schools (e.g. PSAE and ACT standardized test results, dropout and attendance rate trends, and AP test scores) would not be available for at least one more year, Atols believed that the few

[26] At the time this case study was written, CPS was calculating VOISE's freshman on-track rate at 67.1 percent, whereas the school was calculating it at 70 percent.

[27] "Freshman On Track Rates 2006–2009," Chicago Public Schools, November 9, 2009, http://research.cps.k12.il.us/export/sites/default/accountweb/Reports/Citywide/ontrk_report_citywide_2009.pdf (accessed December 7, 2009). "High School Freshman On Track Rates 1997–2009," Chicago Public Schools, November 9, 2009, http://research.cps.k12.il.us/cps/accountweb/Reports/allschools.html (accessed December 7, 2009).

[28] "One Year Grade 9–12 Dropout Rates, 1999–2009," Chicago Public Schools, 2009, http://research.cps.k12.il.us/cps/accountweb/Reports/allschools.html (accessed December 7, 2009).

available indicators were promising enough to warrant replicating the model of the school immediately.

At the same time, education leaders nationwide were beginning to recognize VOISE as a model for future schools. When the education community became increasingly concerned that the H1N1 flu pandemic would pose challenges for educators during the 2009–10 school year, the U.S. Department of Education turned to VOISE for a solution to continue students' education in the event that a national disaster prevented students from physically attending school.

In October 2009, James Shelton, assistant deputy secretary for innovation and improvement for the department, conducted an emergency drill at VOISE to see how educational technology and online curriculum materials could keep students on task during a school closure. On the day of the drill, the sophomores followed a regular bell schedule and attended all of their classes just as they would on a regular day—only virtually from their homes. Their teachers conducted classes remotely over the Internet and kept in touch with students via video chats enabled by Webcams or e-mail programs.[29] Using multiple forms of educational technology, the teachers found ways to engage their students despite being physically distant from them. One teacher used an interactive whiteboard to share classroom materials with students at home, while a Spanish teacher assigned students to use digital recorders to record phrases and statements in Spanish and e-mail them to her. Although teachers found it challenging to facilitate class at a distance, students purportedly enjoyed the experience. The school reported 93 percent attendance among 10th graders on the day of the drill, and some students were so excited about the exercise that they asked if they could learn virtually from their homes once a week.

Having received national attention for its blended-learning model and having experienced some early success with its above-average on-track freshman rate, the VOISE team had already accomplished much in its first year and a half of operations. It had utilized the increased autonomy that CPS offered Renaissance schools to create a school that combined the best aspects of two paradoxical traits—rigidity and flexibility—in a complementary manner. Yarch and his team fostered a strict culture of high expectations and a studious work ethic that kept students on task while utilizing online learning to allow students to receive individualized

[29] Administrators gave the students laptop cards to use for the drill so that those students without Internet at home could connect.

instruction and learn at their own pace. The technology seemed to quicken the formation of a strong culture by speeding up the feedback cycle that gave students results for their hard work and allowed them to feel immediate success when they achieved. That feedback cycle and the inherent richness of data available in an online environment also enabled teachers to keep constant track of every student and intervene early and in differentiated ways for students who needed support. By not allowing students to progress to the next level until they had successfully completed a unit, the technology also created a mastery-based learning environment in which time was variable and the learning was constant.

Despite the fact that Chicago had no plans to replicate the school anytime soon and that VOISE remained one of the few degree-granting hybrid schools in the country, Atols was heartened by the school's success and by the gathering interest in hybrid models from policymakers and foundations across the country. She looked forward to observing VOISE's founding students progress to the 11th and 12th grades—and hopefully college—which would be a momentous landmark not only for the school model she had pioneered, but also—and more importantly—for the students it served.

About the authors

JAMES SLOAN wrote this case study while a visiting research fellow at Innosight Institute. He holds a BS in chemical engineering from the Georgia Institute of Technology and an MBA from the Harvard Business School. Sloan is employed currently as a consultant with The Boston Consulting Group.

KATHERINE MACKEY is a research fellow at Innosight Institute. Prior to joining Innosight Institute, she was an eleventh-grade English teacher at Highland High School, a public high school in Utah. Mackey holds a BA in English and French from Wellesley College and a master's in Education from Harvard University.

Acknowledgments

Innosight Institute thanks the Joyce Foundation for its sponsorship of this publication as well as its ongoing support of Innosight Institute's education case study and policy work. Jeannette Lee and Michael B. Horn also made editorial contributions to the study.