

Great Schools

An initiative of the American Architectural Foundation
by DesignSM
presented by 

School of One **Design Charrette**

May 1-2, 2009

Conducted by the
American Architectural Foundation's
Great Schools by Design
Resource Team

With the
New York City Department of Education



School of One Design Charrette

REPORT prepared by AAF Contributing Editor Linda Hales

Table of Contents

PARTICIPANTS	2
OVERVIEW	3
WHY A CHARRETTE?	4
DAY ONE	5
DAY TWO	7
CONCLUSION	8

© 2009 American Architectural Foundation.

Cover photo: Dr. Sun Yat Sen School, M.S. 131, by Ronald E. Bogle.

Participants

New York City Department of Education Team

Joel Rose, Chief Executive for Human Capital

Jonathan Skolnick, Manager of Operations

Bruce Barrett, RA, Vice President for Architecture and Engineering,
NYC School Construction Authority;

Mohammed Riza, Director, Product Visual Design, Wireless Generation

David Lai, Teacher, 6th Grade Math, M.S. 131

American Architectural Foundation (AAF)

Ronald E. Bogle, Hon. AIA, AAF President and CEO

AAF Resource Team

John M. Weekes, AIA, Founding Principal, Dull Olson Weekes Architects, Inc.

John Pfluger, AIA, LEED-AP, Principal, Cuningham Group Architects

Susan J. Wolff, Ed.D., Director, Wolff Designs

Site

Middle School 131, Dr. Sun Yat Sen School

Overview

What if you could take the conventional learning environment of the public school and completely transform it? What would it take to replace the outmoded, one-size-fits-all classroom model with a new curriculum customized to meet the needs of each individual student?

What has long been the vision of educators is now a major step closer to reality. Under the leadership of New York City Mayor Michael R. Bloomberg and Chancellor Joel I. Klein, the New York City Department of Education has developed a pilot program that will use technology to deliver personalized instruction for every child.

The department's Chief Executive for Human Capital, Joel Rose, conceived of this technology-driven "School of One" to improve student achievement at New York City schools. Rose recognized that such personalized programs would require a new learning environment, one that is radically different from the traditional classroom.

But how to implement such a bold vision and sweeping change? In early 2009, New York turned to the American Architectural Foundation (AAF) for help.

Nine weeks before the start of the School of One pilot project, AAF sent a resource team to join Rose and his team at the site selected for the pilot: M.S. 131, Dr. Sun Yat Sen School in New York's Chinatown. AAF, through its *Great Schools by Design* initiative, has years of experience helping education leaders tackle facilities challenges in innovative ways. For this project, the AAF team would use the charrette approach to encourage collaboration and creative thinking.

Principal Phyllis Tam opened the school's library to the charrette so that Rose and his colleagues could work with AAF's design team. For a full day and a half, they dreamed, debated, and sketched. By the close of the charrette, the group had developed a template for a new and innovative educational landscape.

The AAF resource team saw that the School of One strategy was built on technology. The key was a new teaching support system, a sort of "digital tutor," that would be used to support the classroom teachers by helping to customize the curriculum. Technology would track a student's progress each day, determine which teaching modalities were achieving the best results, and help teachers select and schedule the lessons most likely to help a student succeed.

Rose explained to the AAF designers that the School of One was not about new software or a new approach to math or reading. "It's a program to sort out who's failing to get which lessons," he said, "and which lesson to apply tomorrow morning."

The potential scenario of 100 students focusing simultaneously on 100 different lessons presented a major challenge. Clearly, the space would need to accommodate asynchronous learning. Educators and designers quickly developed a new model. In place of classrooms, there would be a series of learning pods, some with fixed, some with movable furnishings, reflecting and sustaining the variety of learning modalities envisioned in the pilot program.

A small graphic in Rose’s grant proposal turned out to be the seed for the template. The AAF designers focused on the drawing’s distinction between a crowd of students in a traditional classroom and individuals learning at their own pace. Here was the epiphany that the charrette participants were looking for: “personalization” was the key. The School of One’s mission was not test results or administrative organization or technology. It was the personalized learning experience. This would be the design key as well.

The template was flexible enough to support solo work at a computer, collaboration with peers and even group lectures, while remaining structured enough to be safely navigable for 100 teenagers. The entrance to this school of individual learners would use the metaphor of the gateway: a large, flat-screen monitor to welcome students to an exciting new learning environment. Here each student would receive an individualized schedule of activities for the day.

Now the design team could tailor the template to fit the summer program. The template was made scalable upward, allowing it to be applied not only to a single summer school program, but ultimately to any of New York City’s 1,300-plus school buildings.

With the help of AAF’s design team, the School of One had taken the first step on its journey from concept to realization. Ultimately the beneficiaries will be the 1.1 million students and 80,000 teachers of New York City’s public school system.

Why a Charrette?

“Design is not about a building, it’s about a problem-solving process.”

Ron Bogle, American Architectural Foundation

Designers use the word *charrette* to describe a group of people working collaboratively to devise a solution to a problem. The word means “handcart” in French, while the phrase *en charrette* means “intensely, compulsively.” Typically, the charrette experience includes multiple sessions of intense concentration. There may be a series of creativity-building exercises. The group often will split into subgroups to explore themes before reporting back to the whole. Games, mental exercises and other strategies are used to foster the trust and collegiality required for successful collaboration.

The charrette process, which architects, designers and urban planners apply regularly in their work, can quickly generate fresh approaches, enabling participants to clarify goals and sharpen perceptions. The process encourages participation and joint ownership of solutions, seeking to defuse potential disagreements among stakeholders. By adhering to a tight deadline, charrettes draw participants into a focused and sustained effort. The intensity often leads to a higher level of thinking about the original problem. This in turn leads to greater potential for true innovation.

That was the experience at the charrette for the School of One.

Day One

“Embrace risk. That’s creativity.”

The School of One design charrette began with an introduction from American Architectural Foundation President and CEO Ronald E. Bogle. He explained that AAF’s *Great Schools by Design* program serves decision-makers and administrators as “an objective convener.” AAF also shared the educators’ interest in maximizing the role of technology in the learning environment. In providing immediate guidance on the summer pilot, AAF also was looking for lessons to share with others engaged in improving urban schools.

“Our objective is to assist education leaders see that design is an essential tool needed to help transform education,” said Bogle.

Joel Rose, originator of the School of One proposal, and his colleague Jonathan Skolnick had been immersed for months in planning for new “learning modalities” and assessing software that could give them “business intelligence.” “We’re determined to help kids meet New York standards,” Rose told the designers at the start. “That’s the goal.”

As for the vexing issue of space—where and how 100 students would pursue 100 different lesson plans in an existing building—Rose said he was “ready to go on a journey, to see where it takes us.” Both he and Skolnick pressed for “practical” solutions.

AAF recruited a source team with architect John Weekes of Dull Olson Weekes, Architects, Inc., Portland, Ore., serving as the charrette’s leader. He moved to ease apprehension by explaining that the discussion would “not be linear... We’ll be bouncing off ideas and finally arriving at a path.” It will be important, he said, to “stretch our imagination.” His goal — a template to construct a School of

One, or a personalized school for many hundreds—ultimately would be achieved by a seemingly circuitous route involving everything from foam building blocks and marker pens to visioning exercises and an art video.

Also on the AAF resource team was John Pfluger of Cuningham Group Architecture in Minneapolis and Susan Wolff, Ed.D., an educational facilities planner from Oregon. The discussion bounced from the benefits of collaboration to artist Josef Albers’s color studies on misperception. The connection to School of One, with its learning modalities and “business intelligence” systems, wasn’t immediately clear, but Pfluger advised wisely, “Don’t worry about who gets credit, just get the ideas out there. Put yourself in an environment that rewards failure. Embrace risk. That’s creativity.”

Jonathan Skolnick realized early on that “splash and impact” could motivate students to work hard. He had tentatively branded the School of One as an “airport” of student passengers, each seeking his or her own “boarding pass” to the next lesson. His chief concern was the logistics of moving people.

Wolff pointed out that, “If you’ve designed the space well, you shouldn’t need signs.” She added, “The goal is to create the freedom to be the best you can be. If we give them the space and freedom, they’re going to come up with ideas and thoughts we don’t have.”

The “airport” theme was considered and abandoned after David Lai, who teaches 6th Grade math, pointed out that it would be alien. “Most of these kids have never been out of New York City,” he said. In the discussion that ensued, Lai offered a thought about how

students learn, which became central to the ultimate design of space: “You have to grab their attention.”

While the group considered ways to make the space connect with students, Mohammed (Mo) Riza sketched furiously. Instead of taking notes, he drew a fantasy “Playground of Modalities” based on ideas and words in the ongoing discussion. His multi-faceted learning environment included study pods, genius bars, and a futuristic time-travel lab in which students would journey through history. There were no signs. “No one needs to explain how to use a playground,” he pointed out.

Realizing that not everyone was able to picture a new reality so easily, the resource team seized the moment to propose a game of visioning. By asking participants to divide into groups and imagine a successful School of One five years into the future, they smoothly shifted the discussion from logistics and student-teacher ratios to the dynamics of what students might experience. One group saw the School of One circa 2015 as a “coffee palace” infused with technology and music and filled with flexible, comfortable furniture where students would create their own community.

The image hinted at the bold new educational landscape that would emerge. The exercise also produced a list of requirements for a School of One: comfort, connections with friends and teachers, a “smart” environment, and the flexibility to deliver education to large and small groups, as well as individuals.

Rose also laid down some working assumptions that would find their way into the all-important template for space. With this number of students, the pilot would need four rooms that could hold 30 students each: one room for individual learning, a computer room, a theater, and a behind-the-scenes “war room” for operations. Most would need computer access. He worried that it was too much space to ask for.

Each iteration of the concept inspired further refinements. Skolnick wanted to know how such a grouping of rooms would “feel different? That’s a key goal of ours.” Where would students go between periods? Would there be an adult present? Would there be too much noise in a large open space?

Weekes began to sketch a “learning street.” Small study rooms would be linked by a broad hallway wide enough to accommodate tutoring pods. Students would be greeted by a giant flat-screen monitor on a “front porch.” It might beam a message like “It’s time to learn.” Iconic furniture and color could provide some personality.

More drawings offered new configurations for the different learning modalities students would use, but a bigger challenge soon emerged: where in the existing school building would Rose and his team find space for the School of One?

The group toured the school and determined that the air-conditioned library had the most potential. It offered adequate square footage, had interesting corners and levels and, behind a closed curtain, a stunning wall of glass overlooking the school’s atrium. Weekes proposed huge graphics and big, bold painted objects to make a space “that rests on its own, whether there’s a kid in there or not.” Architect Pfluger began building a computer model with iconic furnishings.

Rose and Skolnick began offering dramatic visions: A big flat-screen in a darkened atrium, with students climbing the stairs beyond to the converted library. Seventh graders might find fractions flashing on the ceiling, or their own faces beamed back to them on the flat-screen monitors.

They recalled teacher Lai’s comment: “If you can grab their attention, you’ve got them.”

Day Two

Breaking the Mindset of What a Classroom Is

The charrette gathered speed on the final morning as the resource team began to pull all the threads together. Rose and Skolnick had worked past midnight with the designers to flesh out the temporary redesign of the library and to consider how the template could be applied to other locales on a bigger scale.

“The process is not just about creating physical space, it’s about helping to articulate your objective more clearly,” Ron Bogle observed. “Don’t shortcut the process by establishing a kit to drop in.”

The “learning street” had begun to look more like an egg crate, but the concepts held firm and Weekes began to turn the pencil sketches into permanent works.

Agreement had been reached on the particulars: The School of One would feature a main entry portal, or “porch,” with a large flat-screen monitor for welcome and information. There would be six small rooms. Alpha Rooms would be the most flexible, with wireless connectivity and laptops, as well as seating that can be reconfigured into nine different layouts within minutes by students and teachers. Beta Rooms would have fixed technology—desktop computers embedded into the tables—with flexible use of dividers to accommodate synchronous and asynchronous learning, as desired. One large central space, the Omega Room, would encompass five discreet learning spaces, including a larger staging area. Smaller Extended Learning Spaces outside the Omega configuration would contain “pods” for independent learning or tutoring. Multiple flat panel monitors stationed throughout the spaces would flash student data at each turn, providing a smooth flow of people and clarity about destinations. A Teacher

Workspace would allow for teacher collaboration and would include equipment and supplies. A small “War Room” for planning and operations would complete the pilot school design.

Bruce Barrett sketched out multiple seating arrangements to show in detail how varied teaching modalities would affect where and how students study and collaborate.

At 11:35 a.m., the group was ready to make a formal presentation to visitors. Twenty-two hours of intense discussion and collaboration had taken the concept for School of One from words and passion to something more functional and realizable. Learning would take place in purposeful spaces that could be as rich in variety as the lesson plans themselves. Sofas, foam blocks in geometric shapes, maybe a smart table with a touch screen would be useful in the central space. New lighting for the library would improve the prototype image.

The early visioning exercises had unlocked key words and ideas. The School of One would create connections for all students: to their peers, to their teachers, to the environment, and to the future. Space for collaboration would be crucial, for staff as well as students. A sense of personal choice would reflect the philosophy of the school.

The late-night discussions had provided a deeper understanding of how Rose’s plan would work, what would happen where, how students would move from one kind of lesson to another. “Words lock us in,” Weekes observed. “It was important to reinvent terms to describe the School of One.”

Rose still worried that the overarching idea, “personalization,” might not be as motivational for a child as the “airport” theme. But he concluded, “We need more creativity and imagination in education. We have been locked in the same box for too long.”

“Demonstrating change in this space breaks the mindset of what a classroom is,” Bogle told Rose. “It allows you to tell that story, too.”



School of One Charrette participants. Photo: MoRiza

Conclusion

If the concept behind School of One is valid, “we won’t need grade levels.”

Joel Rose, NYC Department of Education

Stepping back from the charrette, lessons were learned and conclusions drawn during the process of designing a template for the pilot School of One.

- The student is a key stakeholder. The effectiveness of the School of One will depend on the end-user’s experience.
- Different learning modalities require different spaces.
- Flexible spaces with reconfigurable furnishings can alleviate the need for additional square footage.
- Data on the user experience will inform the link between motivation and design of the learning environment.
- Technology is a pathway, not an end result. Delivery mechanisms constantly evolve and replace earlier models.
- Design is a change agent. The design process can help solve problems holistically.