

Making Room for Creativity and Innovation

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What shape will the school of the future take? How do we advance an educational program for students who will be entering an ever-changing and dynamic world community? How can we design buildings that appear permanent, but that can be restructured in the short term to adjust to the needs of an ever-evolving curriculum? How do we make room for the creativity and innovation that is sure to keep our faculty engaged and that will drive students intellectually, and most important, how do we prepare students so that they will acquire the competencies to be competitive and successful, and to thrive in today's workplace?

A Dynamic Balance

Striking a dynamic balance—a creativity and willingness to explore—has characterized the Choate Rosemary Hall experience since its founding in 1890. With the prescience of a modern-day educator, Caroline Ruutz-Rees, Headmistress of Rosemary Hall, a founding member school of the Parents League of New York, set the tone when she offered this counsel to her students in 1905: “A pile of material is not a work of art—it lies with the artist to make it so; and, in the same way, the accumulation of facts and methods does not constitute an education. You must use your own powers upon it ... every lesson can be in some sort a voyage of discovery.”

This advice is even more relevant in today's digital age, where we are incessantly assailed by a torrent of facts. The internet has transformed everything: it provides instant connections to endless information—all at our fingertips. But having the data and the facts is a mere scratch on the surface; it is a preliminary step in the pursuit of true, applicable, meaningful knowledge. How do we apply facts? How do we expand upon them? What happens, most important, if we question them? Such questions Miss Ruutz-Rees believed to be essential for her students and her intellectual descendants to ponder so that they might forge their own paths of discovery.

The notion of discovery remains at the heart of the student experience to this day—it is our responsibility as educators to encourage young minds to formulate their own ideas with originality and inventiveness.

As we look toward creating evolving school curricula, it is necessary to provide the foundational structures for both creativity (the ability to generate new ideas) and innovation (the implementation of new ideas).

Foundational Structures

In his book *Creative Schools: The Grassroots Movement That's Transforming Education*, educator and creativity expert Sir Ken Robinson explores current-day curriculum structures, concluding that “the conventional idea of academic subjects is too limiting.” He writes:

In practice, knowledge in all its forms continues to evolve; outside schools, the boundaries between different subjects constantly overlap. ... In a sense, there is really no such thing as an academic subject. There are only academic ways of looking at things. Academic work is a mode of analysis and it can be applied to anything: foreign languages or particle physics, poetry or geology.

As a student of architectural history, I believe there are some important lessons to be learned from 17th-century London architect Sir Christopher Wren, who eschewed a single discipline in favor of academics as a “mode of analysis.”

A polymath, Wren had a successful career as an astronomer at Oxford University before he produced his first architectural design at age 32. Yet few know that he was a problem solver in every facet of his life, and in every way. His far-reaching intellectual curiosity simply would not allow him to be limited to one domain. Whether the day's problems were scientific, architectural, or in any other realm, he approached them with careful attention and critical thought. He took all the information available to him, synthesized it, and created a solution. When he did not have all the necessary technical knowledge, he was always willing to consult and learn from experts. For example, he leaned heavily on an old tradition—the medieval master mason—for important construction techniques and efficiencies. This allowed him the freedom to explore new and varied opportunities and instilled in him a skeptical curiosity to question the status quo and the confidence to forge his own journey of discovery.

Wren understood, and was excited by, the dawning of a new age, that which was ushered in by the scientific revolution. We, too, face a new age, that of the digital revolution. We should be welcoming it with the same excitement that Wren would, for it is proving to be just as significant as—if not more so than—all previous industrial and scientific revolutions.

It is forcing us to change the way we think; it demands creativity, and requires collaboration and a fully-integrated approach to learning.

A Fully-integrated Approach

What does this fully-integrated approach to learning look like? The essence of learning rests in our ability not just to find the information, but also to synthesize it and do something with it, as Wren did 300 years ago, and as Caroline Ruutz-Rees urged her students to do at the dawn of the 20th century.

Following the destruction of St. Paul's Cathedral in the Great Fire of 1666, Wren offered an innovative Greek cross design crowned by a huge dome encircled by windows framed with pilasters. The initial design proved too avant-garde for the church commissioners, and was rejected. Relying upon his own resourcefulness and problem-solving abilities, he produced another design for a more traditional classical cathedral with a spectacular hemispherical dome topped by a magnificent spire. This great dome still remains one of the abiding images of England.

Wren was able to accomplish so much, so well, because of his genius in knowing how to use all of the information and resources available to him. He took the best of the old and enhanced it with the best of the new, for example, by using the medieval masons while simultaneously creating the modern architectural office. He also used both sides of his brain. He relied on his creativity to design palaces, libraries and cathedrals; he also channeled his scientific abilities in order to organize their execution. By so doing, he not only established the modern architectural practice, but he designed the skyline of London.

His genius for joining the best of medieval building techniques with the best design ideas of the Enlightenment is a path for today's educators to emulate. Just as he seized and then expanded upon the exciting ideas that emanated from his era's scientific revolution, we too must embrace and integrate the best practices of today with the prodigious ideas emerging from the digital revolution.

Making Room for the New

So how can schools fuse traditional best practices in education with ever-emerging innovations? One tangible representation of ongoing academic discovery is the iPad. The iPad as a teaching tool is not a replacement to any other means of teaching or learning, but rather an enhancement. As one of our faculty members put it, "Students and teachers create learning." I was struck by the simple truth of this statement. Of course, human interaction is at the heart of all teaching and learning—that will

never change. Tools like iPads, and for that matter textbooks, pen and paper, quizzes and tests, should be viewed as additional resources to supplement the interpersonal dynamic that is the essence of education.

The introduction of environmental literacy into the curriculum is another example. Our Environmental Immersion Program is a foray into the interdisciplinary learning that illustrates Sir Ken Robinson's notion that there is really no such thing as an academic subject, only academic ways of looking at things. Students have the opportunity to become acclimated to environmental literacy and sustainable living at our Kohler Environmental Center through the multidisciplinary lenses of biology, ecology, literature, economics and ethics. As a result, those students will be better equipped to offer creative solutions to the problem of climate change, a critical issue they will be facing as adults.

A more recent example of the challenge of designing a building and a curriculum for today and tomorrow presented itself in the construction of our new Lanphier Center for Mathematics and Computer Science. Like Wren, we took all the information available to us, synthesized it, and created a solution. We visited other schools, and groups of us traveled at different times to California's Silicon Valley to visit companies such as Apple, Google, Pixar and Twitter. We also visited the Institute of Design at Stanford. Common among these work environments were themes of collaboration, communication, creativity and fearlessness.

As prevalent were flexible workspaces: white-board walls that were easily movable, with supplies nearby for rendering by hand and crafting models quickly; tables on casters and stools with handholds that could be readily moved into configurations conducive to the task at hand. More important, everyone worked together to maintain these lab spaces so that they would be easily accessible by any group at any time. Our group quickly learned how form (a well-designed common space) could contribute to function (the creative problem-solving we hoped our students would engage in).

Initially our plans also included STEM labs—spaces where interdisciplinary collaboration would thrive. But as a multidisciplinary group of teachers began planning courses for the new space, this engineering-oriented approach was too narrowly focused; it was lacking in creativity and artistic flair. But our next concept, STEAM (adding the Arts to Science, Technology, Engineering and Math), was still too limiting. What about the Humanities? What about learning not defined by traditional departments?

Our imaginations and intentions took flight. Could we create an environment like that of MIT's famed Building 20 that encourages "knowledge spillovers" and has the potential to be a "magical incubator"?

of ideas? Inspired by the creativity and innovation we see in today's science and technology industries, and also by the diversity, originality and imagination apparent in the mindset and work environments of those we visited in California, we renamed our new suite of rooms the "i.d.Lab."

Toward a New Horizon

The i.d.Lab is a mixed-use space for innovation and discovery. It was deliberately designed for hands-on, project-based learning—bringing together formal and informal learning, and scheduled as well as unscheduled activities. Students and teachers use the i.d.Lab to ponder a challenge, to create a project, to undertake a group endeavor, to dream, to imagine, to soar—allowing them to practice the famed injunction that we must jump off cliffs and develop our wings on the way down.

More than a name for a space, the i.d.Lab is a way to capture the unique learning environment, a school signature that stands for flexibility and versatility, for iteration and practical application, for a student-centered and project-based approach, and for the collaboration of learners (of all ages) on the best kinds of learning possible. In its first year, 890 student participants had scheduled activities in the i.d.Lab—with more than 350 students completing class projects; another 100 students signed up for specialized workshops to learn more about Oculus visual reality, 3-D printing, laser cutting, littleBits, Moog synthesizers and soldering, as well as for the school's first Hour of Code.

Like the novel educational experiences we envision, the space itself is both flexible and ever evolving. In the next few years, it is our intention to create community i.d. spaces across the campus, in our dormitories as well as in our classroom buildings, that will spur spontaneous collaboration and act as catalysts for differentiation and growth.

Using the resources at hand, independent schools must work diligently to assure that our ongoing strategic plans remain aligned with the world toward which our students are heading. Like Christopher Wren, whose impact on the London skyline endures, today's independent school leaders will have an impact on future educational horizons if we think boldly, innovate wisely, link blue-sky thinking to a new reality, and use creativity and innovation to guide our vision for the schools of the future.

References

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This article first appeared in the 2017 issue of *Parents League Review*.
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