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Beijing Academy: Innovation, Design, and Learning

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Abstract

Purpose—Taking Beijing Academy as an illustrative example, this article aims to discuss a model of "design-as-learning, learning-as-design".
Design/Approach/Methods—As a member of an international panel of the school, I have involved significant periods of observation of classroom work, focus group discussions with students, meetings with teachers and administrators, and sessions with governmental officials and external partners for the school. This has provided rich first-hand data for the analysis.
Findings—This article argues that learning environments should be constructed around powerful theories of learning, that those theories should be subjected to constant and repetitive critique and revision in light of evidence, and most importantly that there is no fundamental difference in roles between adults and young people in the organization.
Originality/Value—This article has the potential to address the transitional issues resulted from the policy-driven reform and institutionally-determined definitions of learning and urges adults to transfer agency for learning of individual students.

How governments and societies organize learning has been a central preoccupation of industrialized countries for at least three decades. Throughout this period a common discourse has developed around the problems presented by learning in advanced societies, the types of solutions that are appropriate or promising in addressing those problems, and the role of public institutions in addressing those problems and solutions. The dominant paradigm in this period might be called "policy-driven reform". In this paradigm, governmental responsibility toward learning is expressed through the deliberate use of *policy*—incentives, sanctions, and supports—to alter the *structures and processes* of institutions—typically schools and the organizations charged with managing them—which in turn results in *changes of the behavior* adults and children within those institutions to accord with the over-arching *goals* of society, as expressed in *policy* (see, e.g., National Academy of Sciences, n.d.). In this model, learning is delivered by organizations called schools, which are nested within complex institutional structures designed to assure their compliance and accountability to public purposes, populated by adults and children

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whose responsibilities are largely determined by institutional goals. This model has become so deeply embedded in public discourse and professional behavior that it is virtually invisible to those who engage with schools.

There are signs, however, that this model is losing its public influence and social authority. Advocates and critics of reform have begun to question the power of policy to achieve broad-scale changes in learning and the distribution of privilege in society. Public institutions themselves are beginning to be subject to a more skeptical analysis focusing on their self-interested, protective behavior in contrast to their broad, often ambiguous social goals. Broad-scale "solutions" to matters of learning are increasingly being judged by how well they fit in specific social contexts, rather than how well they appeal to the sensibilities and ideological positions of policy makers. Perhaps most importantly, learning, as an individual and social activity, has begun to escape the bounds of traditional educational institutions as societies become less hierarchically organized and more networked around increasingly accessible knowledge. Put simply knowledge, and the points of access to it, are increasingly distributed throughout society, rather than the property of privileged institutions.

While it is clear that something important is happening in the way society organizes and distributes learning, it is much less clear what the transitional forms of social organization are that will accompany these developments. There are some important markers that merit attention in this transitional phase: One is the growing tension between learning and schooling. Learning is a fundamental human drive, biologically and evolutionarily determined, about which we know an ever-increasing amount. Education, or schooling, is institutionalized learning, which is a much narrower, more circumscribed activity. As our knowledge of learning grows, and the scope of learning in society at large increases, what is the role, if any, of traditional schooling? Another important transitional marker is what we are to do with our emerging understanding of the amazingly broad variability in human beings' experiences, interests, and aptitudes toward learning. Education is, at least in its current form, a heavily standardizing activity—schools are "responsible" for assuring, at some level, that all students receive at least some basic bundle of knowledge and skill. The research on human learning, as well as our experience with policy-driven reform, is increasingly leading away from this standardized view of learning toward a much greater focus on learning modalities that respond to human differences and cultural contexts. A final transitional marker is the chronic issue of social inequality. Educators are largely committed egalitarians, at least in their espoused values. Yet the evidence in advanced industrialized countries is that schooling has been a major driving force in the reproduction of social inequality in society. Schooling, with its heavy emphasis on standardized measures of achievement, is a primary force in the allocations of privilege to certain individuals over others based on institutionalized forms of "merit". If we see the social activity called learning, broadly defined, as a major determinant of the economic, social, and cultural welfare of society, what will be the impact of more broadly-distributed learning on the allocation of privilege in

society (see, e.g., Winthrop & McGivney, 2015)?

One way of addressing these transitional issues is to use human imagination, creativity, and purposeful design to create learning environments that stretch and (literally) re-form our understanding of what learning could look like, apart from the constraints and preconceptions of policy-driven reform and institutionally-determined definitions of learning (see, e.g., Manzini & Coad, 2015). We might call this "learning by design and design through learning". This mindset is different from policy-driven reform in the sense that it starts, not with a set of policy prescriptions driven by institutional interests, but with a set of ideas or design principles derived from knowledge about how human beings learn. These principles are deliberately *not* formed in response to generalized solutions to broad-scale problems, but to human-scale *questions* about how learning occurs and how human interaction around learning can be adapted to individual differences. Design emerges as a result of this learning and becomes organized into various forms of human interaction and organization. In this model, learning is about *questions*, not prescribed answers to predetermined problems. Each level of question provokes another level of question, and each cycle of questioning results in adaptations and decisions about how well the learning is represented in forms of interaction and organization. The purpose of the model is not to "solve" problems and represent those solutions in fixed institutional structures, but to incorporate learning as a practice in the leadership and design of new forms of learning.

Beijing Academy, I will argue, is a reasonably close approximation to this important transitional form of design-as-learning, learning-as-design. In this paper, I will discuss some of my own observations about how this model has unfolded during the time I have been acquainted with Beijing Academy. But it is important for the reader to know that Beijing Academy is only one example of how the model might work; there are many different examples in the world at large. I am currently observing two of these models in action: *Tutoria*, a large-scale radically-designed learning model in rural Mexico—currently in roughly 9,000 schools—based on the principle that young learners can establish deep expertise in specific content areas and use that expertise in mutual exchange with other students to increase their collective learning (Rincon-Gallardo & Elmore, 2012). Another example I am following is *NuVu*, a learning environment based on the architectural studio model of repeated cycles of problem-solving, critique, design and re-design in which learners use sophisticated knowledge to address practical problems in their communities. What binds this examples together is not their specific focus or practices—they are very different from each other—but their common stance toward learning. They subscribe to the basic principle that learning environments should be constructed around powerful theories of learning, that those theories should be subjected to constant and repetitive critique and revision in light of evidence, and most importantly, that there is no fundamental difference in roles between adults and young people in the organization—everyone's job to learn, and to enhance the value of learning for everyone else through tough and continuous scrutiny of learning.

Beijing Academy: The Founding

The first thing that must be said is that Beijing Academy is, in its origins, a very unusual example of governmental action toward learning. The Academy was formed by direct governmental action, with a relatively clear mission to develop a distinctively different type of learning environment from the traditional Chinese school. The Beijing municipality—a massive jurisdiction covering 16 regional units and nearly 20 million people—initiated a process for the creation of the school. The Chaoyang District developed a proposal in response to this initiative. The Chaoyang proposal was developed by a group of distinguished Chinese educators, some with significant international experience, backed by significant inquiry, including school visits and reviews of research. Chaoyang is a district of about 3.5 million people in central Beijing that includes major international corporate headquarters, foreign embassies, international schools, massive high rise residential housing projects.

According to its founders, Beijing Academy was to be an exemplar on several dimensions:

- It was to embody a "future-oriented" design of curriculum and pedagogy incorporating "top tier" ideas from educational practice, brain science, and technology.
- It was to model "global connections" in a local context, through its location in a highly international district in the city and through its use of international expertise and reference groups for advice and guidance.
- It was to model excellence and high quality learning accessible to all children.
- It was to engage in public/private partnerships that demonstrate global connections.
- It was to embody a broad range of experiences and supports for students beyond the traditional academic curriculum.[1]

Beijing Academy also embodied a highly unusual governance structure. The national and municipal governmental structure in China and Beijing is structurally complex, with a dense pattern of geographical and administrative levels and districts reaching into virtually every area of life. In contrast with this environment, Beijing Academy was given a radically simplified structure: Three primary actors were responsible for relations between the school and the larger system—the regional education officer of the Chaoyang district, the education representative on the local party committee, and the principal of the school. Internal matters of organization, curriculum, and pedagogy were the sole responsibility of the school's leadership and faculty. This amounted to a radically simplified accountability structure in a broader system noted for its structural complexity. It has also allowed, as we shall see, for an extremely agile and adaptive culture around the content and organization of learning.

An important part of the initial framework for Beijing Academy was an overall sense of urgency in demonstrating clear progress in the design of divergent learning structures and processes and in questioning certain key premises of traditional education. Much of the early discussions were based on how far to go in changing

familiar patterns of adult-child interactions and how to understand, monitor, and measure the learning that would occur as a consequence of those changes.

Another important initial design decision was to begin with a cohort of Year Five students in the first year and to add successive cohorts each year, building toward Year 10. Eventually, the school would add younger students each year, working toward a primary-to-secondary model. An important consequence of this design decision was that the school's staff took on some of the most interesting and challenging pedagogical issues immediately in the first year: students arrive from a variety of different prior experiences with different levels of prior knowledge; students are entering a new educational environment during a period of development when they are undergoing major shifts in identity and maturity; mastery of serious academic content becomes a major concern for young people, their parents, and educators. Psychologically and neurologically these are turbulent and important years. In some ways, Beijing Academy chose the most challenging version of its already challenging task.

Beijing Academy: What I have Observed

Part of the founding of Beijing Academy involved the convening of an international panel of educational researchers, entrepreneurs, and practitioners to provide an outside perspective on the work of the school. The panel has met annually since the founding. Its membership has changed slightly from year to year. Its meetings typically take place over a relatively intense week roughly mid-way through the academic year. Its activities typically involve significant periods of observation of classroom work, focus group discussions with students, meetings with teachers and administrators, and sessions with governmental officials and external partners for the school. I have been a member of that panel from its inception and have attended all of its meetings.

What I am about to report about my experiences at Beijing Academy should not be taken as "research" in the traditional sense, but rather as the observations of an outsider with a growing familiarity with the school and a strong bias toward the urgent project of helping schools become more responsive to the learning and developmental imperatives of childhood and adolescence. I am trained as a close observer and analyst of classroom processes and learning behavior. I have co-authored books on the subjects of classroom observation and instructional improvement. And I have done close observation and analysis of learning in around 4,000 classrooms in six countries as part of my research. I also teach courses in leadership focused on the development of organizational learning. When I visit classrooms and interview students, I focus on very simple questions, such as, "If you were a student in this classroom and you did what the teacher asked you to do, what would you know how to do?" and (to a student) "Can you tell me what you just

learned and can you teach me how you did it?" In other words, I am less interested in whether the observable behavior in classrooms approximates some ideal model of instructional practice than I am in whether adults and young people engage in purposeful growth and development around common concerns and questions. Needless to say, I am often disappointed in the answers to these questions.

My initial impressions of classroom practice during the first year at Beijing Academy were that teachers and students were working very hard to break what they regarded as the traditional teacher-centered model of instruction. Students were seated in groups rather than in rows. Teachers would pose questions and provide tasks for students to engage in, rather than delivering lectures. There was a lively hum of activity as students discussed their work. Most of the "teaching" was done either through individual student-teacher interactions or through student presentations of work and teacher questioning. It was also very clear that teachers were working very hard to demonstrate that there was structure and purpose to the activities they were asking students to do. Another way to express this is to say that there was a lot of activity, but not much spontaneity. One had the feeling that things rarely happened that surprised people. I came away with a sense of deep engagement and commitment to a common, ambitious, relatively rigorous academic learning agenda, supported by strong collegial norms among students coupled with respectful relationships among adults and young people.

Over successive visits I saw these initially promising patterns begin to change in powerful and interesting ways. There was much more visible evidence in classrooms that students' individual interests were engaged and cultivated—posters and papers that represented research and learning extending the traditional curriculum, more classroom time devoted to questioning and discussion beyond the simple completion of tasks, more student-initiated talk, more divergent thinking and active problem solving in table discussions, less emphasis on the "right answer" and more on explanations and reasoning behind answers. All of this suggests a developing culture around genuine curiosity about how people think and learn, and an opportunity to reflect on the value of individual differences in approach to a common learning agenda. Because we were able to observe and interview students from the initial cohort on each successive visit, we also had the opportunity to see individual students grow into new identities as learners. Students who were initially cautious and relatively quiet participants became stronger, more assertive personalities over time, more comfortable expressing their own views. Students who were accomplished and fluent at academic work became more collaborative in their work with others. Teachers became more relaxed and appreciative of individual students' sometimes divergent questions and comments.

One illustration of this growth in student voice and agency occurred during the third year in school's development. We observed a social studies class in which the topic was "democracy". As an American observing this class I anticipated that the discussion would either be a relatively straightforward treatment of forms of democratic government and their relationship to Chinese society, or a potentially

combative critique of western democracy from the Chinese perspective. What I saw instead was a deep and complex discussion of the underlying problems and dilemmas of democratic theory and practice. Students acknowledged the potential power of democratic engagement as a force for individual and collective welfare. They also reflected a strong skepticism about populist models of democracy, which they characterized as rampant individualism and factionalism that undermines common social norms of cooperation. The discussion turned into a sophisticated argument about the boundaries between "too much" and "too little" democracy and how one would make these judgments. The class concluded with a fifteen-minute student-initiated discussion of the question, "Is Beijing Academy a democracy?" which morphed into a discussion of whether education could ever be "democratic", given the inherent inequality between teachers and students. I found myself reflecting on my experiences visiting American middle and high school classrooms and the fact that I had never heard such a nuanced discussion of democracy in those settings.

To be sure, this discussion, as well as the larger process of developing and nurturing student voice in the process of learning, reflects the larger struggles over authority in the broader Chinese society. The fact that students felt safe to speak candidly about these issues, and to apply their reasoning and analysis to their own immediate environment speaks to the underlying culture of the school: an essential trust in the ability of students to form their own judgments about important questions in their lives and to observe and interpret their immediate world in light of those judgments.

By the fourth year the school had begun to develop practices and structures that gave much more weight to the explicit development of individual student interests and competencies. The school initiated an option for students to opt out of structured classroom learning and pursue individualized study plans with faculty guidance. And by the fifth year the school sponsored an ambitious international STEM fair in which Beijing Academy students presented their individual and group science, engineering, and mathematics projects in conjunction with high school students and university faculty from the United States.

The underlying learning model demonstrated by these developments is an emphasis on the development of student agency and voice in their own learning. The fundamental dilemma of education, as embodied in the democracy discussion noted above, is how to introduce learners to complex bodies of knowledge and expertise while at the same time placing them in the position of assuming responsibility and control over the process of their own learning. Teachers embody the authority of expertise, but the work of learning requires students to assume authority and control over themselves. Beijing Academy has a clear position on this issue, which is that the adults' primary responsibility is to transfer agency for learning to students.

Having sketched this picture of learning environment organized around the understanding, development, and cultivation of individual student learning, another central feature of Beijing Academy is that it is deeply immersed in Chinese history,

culture, and society. While students are constantly encouraged to develop global and cosmopolitan interests through exchanges and language learning, they are also constantly reminded that they are members of Chinese society. The cultural norms that accompany this membership are explicit in the rituals and values of the school. There is a heavy emphasis in the school's descriptions of its core values on the importance of Confucian principles of individual responsibility and social organization. The central principle of filial piety and respect for traditional forms of social organization coupled with respect for learning and culture is a constant theme in the school's public performances and events. Students learn and perform traditional Chinese music and dance, as well as more contemporary forms of musical and cultural performance. Each of our visits was initiated with a performance involving a large cross-section of students engaging in drama, dance, and music. These performances became increasingly opportunities for students to express their individual talents and interests as well as showcases of their ability to collaborate on a collective enterprise.

Learning as Design, Design as Learning[2]

Peter Senge, a researcher and consultant on organizational development, defines a *learning organization* as one in which (a) members are constantly engaged in their own learning in ways that connect with the essential purposes of the organization, and (b) the organization itself presents clear evidence of collective learning through its more or less constant adaptation to changes in knowledge and in its external environment. These two dimensions are essential to understanding the significance of post-policy-driven examples of the design of learning environments. In my experience, educators tend to focus primarily on the learning of individuals as evidence of organization's commitment to improvement—for example, showcasing professional development opportunities for teachers and administrators—while under-emphasizing evidence of fundamental changes in the organizational culture and practice as evidence of learning. I think Beijing Academy stands as a good example of what a learning organization looks like in the education sector—focused not simply on the individual learning of the teachers, administrators, and students, but also on the development of new collective understandings of the culture, structure and processes that promote high levels of collective learning at the organizational level.

The culture of learning organizations is defined by the questions it asks itself, rather than by a fixed set of principles. The policy-driven model assumes that schools can be organized around a relatively fixed set of principles, revealed in the requirements of policy. Learning organizations operate in a more dynamic frame. Instead of fixed design principles, learning organizations pursue a set of questions that represent their core values and explore multiple solutions or answers to those

questions. The most evocative metaphor I have found that defines this distinction comes from Alison Gopnick (2016), a neuroscientist who specializes in learning from birth to age five. Gopnick (2016) defines two distinctive conceptions of learning and development, based on the distinction between the carpenter and the gardener. Carpenters build to a plan. Their work proceeds from a pre-defined design to a finished project. Their success is defined by the degree to which the finished product resembles the initial plan. Gardeners, on the other hand, are forced to constantly adapt and respond to the challenges presented by the fact that they are in constant collaboration with nature, which presents its own challenges. Gardeners succeed to the degree that they understand the dynamic relationships between their intentions and the environments in which they work. Carpenters have answers. Gardeners have questions.

We can think about the significance of Beijing Academy's experience in terms of a set of central design questions that drive learning, individual and collective, in the Academy's development. Each question poses a set of design challenges. Each question requires members of the organization to challenge their understanding of how existing organizational forms and practices work and to pose new ways to think about and design future forms and practices. In addition, each question can be thought of as posing a continuum of responses from well-established, well-understood forms and practices to increasingly uncertain and challenging forms and practices. Pursuing these questions, then, tells us something about the degree of challenge the organization is willing to accept as it proceeds through the developmental process at the individual and organizational levels.

Here are some examples of design-driven questions and how they are manifested in the work of Beijing Academy:

How Is Learning Defined and Distributed in the Organization?

The leadership of Beijing Academy initially chose to organize instruction in a way that diverged significantly from established models of Chinese education, focusing less on direct lecture-based instruction and more on discussion and problem-solving in student groups, mediated and guided by teachers. In this initial model, the flow of information is still primarily driven by an established curriculum delivered and interpreted by a teacher. The model required considerable learning (and unlearning) on the part of teachers and students who were diverging from more conventional models of learning, but the degree of change was cushioned by well-established routines that moved more responsibility toward students. As the Academy has developed, leaders, teachers and students have demonstrated a willing to push further against the boundaries of conventional instructional practice, encouraging more individualized learning through more extensive use of independent study, and increased attention to differences in students' interests organized around special projects. Pushing against these boundaries has required both adults and students to

learn new learning practices and new forms of organizing learning—from classroom-based instruction to increased use of tutorial, independent learning, from curriculum-based instruction to more project-based learning. These are signs of growth and development, signs of adaptation and change in the face of increased understanding of adults' and students' capabilities as learners, signs, in other words, of a learning organization.

What Role Does Student Choice, Agency, and Control Play in the Learning Process?

Coupled with these shifts in the underlying model of learning at Beijing Academy is a complementary redefinition of the role of students in the learning process. In our initial focus group conversations with Beijing Academy students we noted that we were talking to happy, well-adjusted, interesting, and interested young people who were serious students, in a more traditional sense. They seemed to adapt to classroom routines and to have genuinely warm and friendly relationships with their teachers. Likewise, the teachers seem unusually well-tuned to individual students' progress. Over successive visits, there was a discernible shift toward increased individualization of learning in multiple venues, more tailored to individual students' aptitudes and interests, and an increased emphasis exploration, without a discernible de-emphasis on well-organized group-based learning in classrooms. In other words, increases in individualization, choice, agency, and control for students took place as a complement to the earlier forms of instructional practice. The learning environment has become more complex and variegated in response to individual student differences.

How Does the Organization Respond to Changes in Learning Processes?

As the complexity of the organization has increased around basic learning practices, it does not seem to have increased markedly in bureaucratic terms. From the beginning, Beijing Academy has been a remarkably "flat" organization, both in terms of the external governance structure and in terms of its internal organizational structure. The external structure requires only three officials to agree in order to act on organizational matters. The internal structure involves relatively few supervisory administrators, all of whom are deeply engaged in and knowledgeable about the basic learning processes of the organization. As the organization expands, adding additional grade levels and campuses, it will be interesting to see how this structure evolves. It is worth noting that in many educational systems, as attention to individual differences among learners increases, administrative complexity increases, as more specialized adult roles are layered into the organization. Thus far, Beijing Academy seems to have avoided this process, resulting in a remarkably sustained focus on processes and structures that directly affect learning.

How Does the Organization Acknowledge and Represent Its Political and Cultural Environment?

For all its differences from traditional Chinese schools, there is no question that Beijing Academy is a Chinese school. The imprint of Chinese culture is present in virtually everything that happens in the school. Increased emphasis on student choice, agency, and control are nested in a culture of deep respect for adult authority, the mirror image inside the organization of the external culture's profound connection to the Confucian model of the well-ordered society. Cultural events and performances at the school, as well as the school's presentation of its distinctive learning environment, are always couched in references to historical continuities with China's deep past. The relative lack of bureaucratic structure around learning in the school is symptomatic of a strong, cohesive culture. There is also a sense of positive affect toward learning that reflects traditional Chinese values toward learning, coupled with a strong global orientation that reflects contemporary Chinese social and political orientation.

The Future?

In my initial visits to Beijing Academy I expressed some uncertainty about how a learning culture based on global focus and high student agency and control would function in a society characterized by increasing state control of access to the outside world through the internet. This uncertainty has persisted throughout successive visits. Beijing Academy students and faculty seem to have cultivated extensive relationships with colleagues across many countries. The students' language skills are remarkable; so are their interests in culture and learning in other countries. I wonder about the sustainability of this ambitious model in the face of increased control and monitoring of access to knowledge and learning carried through the digital stream.

Overall, Beijing Academy represents a positive working model of what a learning organization might look like in the education sector in the future. The energy and intensity we have observed over our successive visits seems not to have diminished with time and growth. Those of us with an interest in the social development of learning take organizations like this seriously. The age of the carpenters is declining; the age of the gardeners is emerging.

Notes

1　Presentation to International Advisory Group by the Being Academy on December 17, 2013.
2　For an extension of this argument into the neuroscience of learning and the design of learning spaces, see Elmore (2018).

Note on Contributor

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References

Elmore, R. (2018). Design as learning, learning as design. In R. Ellis & P. Goodyear (Eds.). *Spaces of teaching and learning: Integrating perspectives on research and practice* (pp. 47–62). Singapore: Springer.

Gopnick, A. (2016). *The carpenter and the gardener: What the new science of child development tells us about the relationship between parents and children.* New York, NY: Farrar, Strauss, and Giroux.

Manzini,E., & Coad, R. (2015). *Design, when everybody designs: An introduction to design for social innovation.* Cambridge, MA: MIT Press.

National Academy of Sciences. (n.d.). *What is systemic reform.* Retrieved from http://www.nas.edu/rise/backg3.htm.

Rincon-Gallardo, S., & Elmore, R. (2012). Transforming teaching and learning through social movement in Mexican public middle schools. *Harvard Educational Review, 82*(4), 471–490.

Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization.* New York: Doubleday/Currency.

Winthrop, R., & McGivney, E. (2015). *Why wait 100 Years? Bridging the gap in global education.* Washington, DC: Brookings Institution. Retrieved from https://www.brookings.edu/wp-content/uploads/2015/06/global_20161128_100-year-gap.pdf.