Bringing Innovation to Education

by Garrett M. Smith and Nicholas P. Morgan

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Bringing Innovations
to Education

These days, everyone is talking about innovation in education. The U.S. Department of Education's focus on innovation is evidenced by the $650 million Investing in Innovation (i3) Fund and the $4.3 billion Race to the Top Fund. Secretary of Education Arne Duncan and President Obama have hailed innovation as one of the important ways to reform our public education system. Private investors and foundations, too, are focused on innovation. They are eager to fund new ideas that have the potential to change the face of the education landscape.

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How do we define innovation? What constitutes innovation in education? Is it technology? Is it charter schools? The Department of Education, through the Investing in Innovation Fund, is defining innovation fairly broadly and taking a portfolio approach to investing in innovation. As James Shelton, Assistant Deputy Secretary for Innovation and Improvement at the Department of Education, discusses in the interview in this issue of the District Management Journal, the i3 Fund will be investing in three categories—organizations with practices that are proven and ready to grow, others where investment is needed to produce more evidence, and others where seed money is needed for more "pure" innovation.

At the District Management Council, we concur with this broad definition of innovation. To the DMC, innovation in education is at its core all about finding ways to do more with the same or less—it is about achieving better outcomes with fewer resources. This must be the goal of district leadership in the 21st century. There is no debate that school districts are becoming increasingly complex—regulation has increased, organizational complexity has multiplied, differing needs for children have been identified—yet districts must manage with fewer resources to carry out the task of educating America's children. A critical requirement for superintendent success will be the ability to harness the power of innovative ideas to drive change in the district to meet these

challenges. Innovative ideas in education have often originated from sources "outside" the traditional district structure: schools of higher education and academic research, charitable foundations, private sector companies, and more. However, DMC believes, and has observed, that many "innovative" practices are generated and reside within districts today. The greater challenge lies in replicating it on a broader scale.

Defining Innovation

So, what is innovation? Innovation is a seductive and inspirational word, but its definition remains fairly elusive. Webster's Dictionary defines innovation as "a new method, idea, or product," and it defines "new" as "not existing before." Indeed, many people think of innovation as a brand new invention, a revolutionary idea that simplifies the world or a magic bullet to solve some intractable problem. True innovation can be game-changing, altering the fundamental business model through new-to-the-world features, dramatic cost reduction, or significant advancement in performance. At DMC, we believe that if we are looking to innovation as a means of reforming public education, the definition of innovation must encompass more than just a new method, idea or product; the definition of innovation in public education must encompass the ability to impact significant numbers of students or teachers, or yield significant financial results that ultimately will help us do more with less. Ideas/programs

with the potential to affect larger numbers will ultimately be more game-changing even if the idea/program itself only represents incremental change. Ideas/programs that cannot be replicated simply will not move the needle for the system no matter how new and enticing the concept may be.

It is likely that people and organizations will always have differing notions of what constitutes a "break-through" idea or a "high-impact" idea—these are relative measures, after all—and so, innovation for one person will not be the same for all people and all organizations. Nonetheless, since innovation is such a focal point of discussion, DMC believes it is important that we have a framework for discussing this concept in a constructive way. The DMC Innovation Matrix (Figure 1) attempts to provide structure to the discussion and provide a mechanism for assessing different ideas and their relative level of innovation. It should also be a mechanism for people and organizations to converge upon a common understanding of the term, so they can agree on how to allocate resources to new and promising ideas.

The DMC Innovation Matrix has "degree of change" denoted on the vertical axis and "degree of impact/ scalability" denoted on the horizontal axis. New ideas/ programs that represent a more substantive degree of change are represented on the upper half of the matrix, and ideas/programs with larger impact/scalability are represented on the right-hand side of the matrix. Any quadrant of the chart *could* be called innovation, and this has historically led to great confusion about the definition of the word.

The reader should test how he or she might place certain "innovations" on the matrix: Where would you place new classroom technologies? Where would you place asynchronous instructional delivery or distance learning? Where would you place managerial innovations such as differentiated compensation or performance management IT solutions? Where would you place policy innovations such as charter schools or vouchers? Many technology innovations, for example, have been pitched as magic bullets ("breakthrough" ideas), yet have little evidence of effectiveness and end up having minimal impact on the system. These are ideas that are often mistakenly categorized in the upper quadrants as a result of their "high tech" nature, and unfortunately turn out to be bottom-left quadrant ideas that should have been avoided. By contrast, extended learning time is an idea that probably falls on the incremental

end of the vertical spectrum, but seems to be producing real achievement gains in schools around the country. These promising results and the likelihood that it could be replicated at almost any school in the country give it high-impact potential, and suggest that it should not be ignored.

The U.S. Department of Education clearly holds this broader definition of innovation in the Investing in Innovation (i3) Fund and the Race to the Top Fund. By directing the largest grants to proven programs, i3 emphasizes the impact and scalability of the invest-ment portfolio. At the same time, the Department of Education also has expressed interest in funding early stage incubation projects to help develop new ideas. These seem to be ideas that fall into the top-left quadrant of the Innovation Matrix—ideas that are inventive but need time to mature and develop in order to drive change in the system. Indeed, pursuing a portfolio of ideas ensures a pipeline of innovation—fostering scalable solutions that can have impact in the short-term, and also cultivating ideas that are still in the incubation stage.

We hope that by using this framework our superin-tendents and districts will be able to have meaningful discussions around the following questions: Where do our ideas fall on this map? Which quadrant is most important for us to pursue? Are we putting our resources behind a portfolio of ideas that will move ▷

FIGURE 1

DMC Innovation Matrix
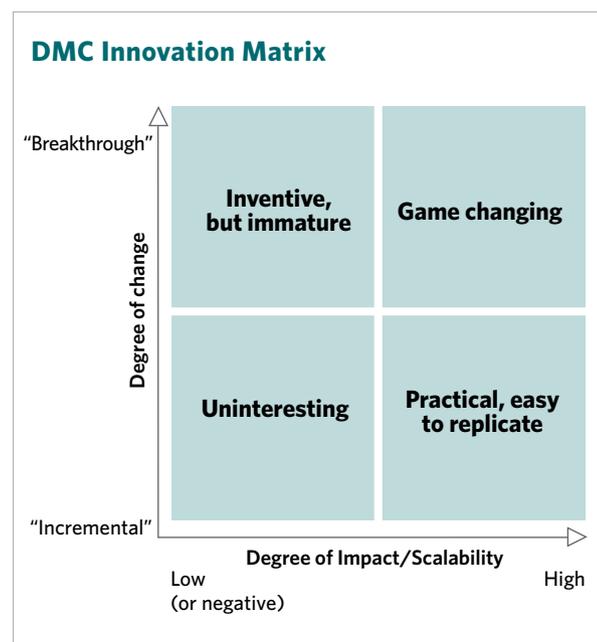
the needle for our district and for the country in the short-term and in the longer-term?

In order to further define and understand innovation, we must understand *the process of innovation*. A variety of thinkers and practitioners across the business and education sectors have described a process of innovation as critical to the realization of innovation results, including the Gates Foundation, the New Schools Venture Fund, the legendary design firm IDEO, and others. DMC has distilled the innovation process down to three core components that are critical to creating innovation within an organization. The DMC Innovation Process (Figure 2) suggests that pioneering ideas must progress through several critical steps before they can be considered truly innovative. Various academics, practitioners, and the Federal i3 Fund have described the innovation process in similar ways, suggesting that ultimately ideas must be generated, tested, refined, and replicated in order to successfully create innovation.

The first stage in this process is idea generation. In the idea generation phase, creative thinking leads to new concepts that have the potential to change the landscape of an organization, a product class, the use of resources, or some other end result. This is the moment when a lightbulb goes on in the head of a teacher, principal, administrator, or other stakeholder. Good ideas can come from a variety of sources. They can come from within a district, bubbling up from individual classrooms, schools, district offices or collaboration amongst these groups. Ideas can also come from outside the district, springing from charter schools, private or parochial schools, non-profits, or private sector organizations. Ideas can also come from farther afield; for example, Singapore's math success has been viewed as an international best practice to be studied. Another source, also more distant from public districts, would be ideas from other sectors such as healthcare, finance, or consumer marketing.

Regardless of the source, once an idea is created in this "Lightbulb" moment, it is important that the idea is recognized in order to move into the next stage of the process. If the idea is not acknowledged or understood by the organization or the sector in general, it may languish and die at the desk where it was created. Idea selection is the gate that determines whether ideas transition from the first to the second stage of the innovation process. In order to make this selection decision, organizations must determine the potential return on investment from a given idea by weighing the costs and results that the idea is likely to produce.

Once the idea has been recognized and selected, it can be tested in a limited real world situation. This is the second stage—"Getting it Right," which involves testing, experimentation, and iteration on the idea. Product inventors may run focus groups or beta launches in order to gauge the effectiveness of a product. New organizations may be incubated within a large organization or receive seed money in order to "pilot" their new way of working. As these experimental pilots are carried forth, innovators look for positive outcomes that confirm the validity of their hypothesis; they gather feedback, and they refine and iterate upon their idea with a goal of achieving and amplifying positive outcomes. This is a crucial phase for innovation, as many inventions and ideas are significantly transformed through this testing and refinement phase. Schools and districts often struggle with this stage, as well as its flipside—stopping an initiative that isn't producing results. We must direct resources to where they work, and force ourselves to be more ruthless in stopping programs and projects that have little promise. DMC members have been pursuing program rationalization aggressively through new management protocols and rigorous performance reviews—processes that themselves might be considered innovations.
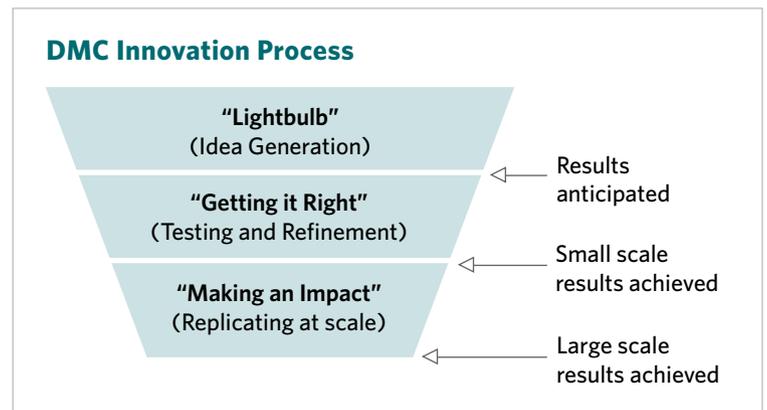
In the third phase of innovation, the refined idea is rolled out. This is the "Making an Impact" stage where the idea is replicated or disseminated. In order to progress into the replication phase, the critical aspects of an idea must be successfully identified and then duplicated in new settings. For a product, this is an easier transition, since products are replicated exactly in a manufacturing process for distribution across various geographies or segments. For a service, program, or organization, however, movement into the third stage is more difficult since there are more variables. If replication is successful, an idea will complete this phase when results have been realized on a significant scale. In education, this might be the moment where the idea is replicated in a variety of locations or contexts, and is able to drive student achievement gains in all of those settings. As the i3 grant process lays out, the evidence required to move from idea generation to scaling up should evolve from initial theoretical support to high internal and external proof of validity. Successful replication is generally the hardest stage of the innovation process, especially when human capital is a critical component for achieving anticipated results.

For an idea to progress through the innovation process, the structures, systems, resources, and culture of an organization must all support these three phases. An organization must encourage and reward new ideas, and recognize failed ideas as a necessary part of the innovative process. In order to test and refine new ideas, discretionary resources must be made available to encourage experimentation. Without these resources or a culture that encourages ideas and experimentation, you will be left without any new ideas to recognize. In many private sector companies, formal processes have been built to encourage and foster new ideas. New ideas are continuously assessed and funded in a research and development process that selects and fuels the most promising ideas. In the pharmaceutical and biotechnology field, for example, the FDA has defined a clear series of phases through which a new drug must pass in order to gain approval. Pharmaceutical and biotech companies have similarly structured research & development phases to monitor and track drugs through earlier phases of discovery and testing. These companies and the FDA use a "stage gate" process to track individual drugs and move them through the various phases of research, testing, and commercialization. Similar stage-gating processes are used across a variety of industries to track new initiatives and new ideas, from IT and telecommunications to more traditional industrial and manufacturing businesses.

Why Innovation Often Escapes Education

In education, a variety of factors seem to have constrained the innovation process. In the "Lightbulb" and "Getting it Right" phases, lack of funding for basic or applied research means that there are limited resources to reward idea generation and to collect data to understand and prove that particular ideas work. The lack of agreement on the definition of innovation or the desired types of ideas can make the idea selection and funding processes opaque and subject to abrupt changes. Even if there is agreement on the need for results-oriented ideas, there can be significant debate and disagreement about the types of outcomes that deserve investment. Another barrier is the lack of incentives to take risks that could produce change. Resource allocation processes generally provide funding for existing programs first, leaving little money for experimentation or replication of proven programs.

FIGURE 2

DMC Innovation Process

"Lightbulb" (Idea Generation) ◁— Results anticipated

"Getting it Right" (Testing and Refinement) ◁— Small scale results achieved

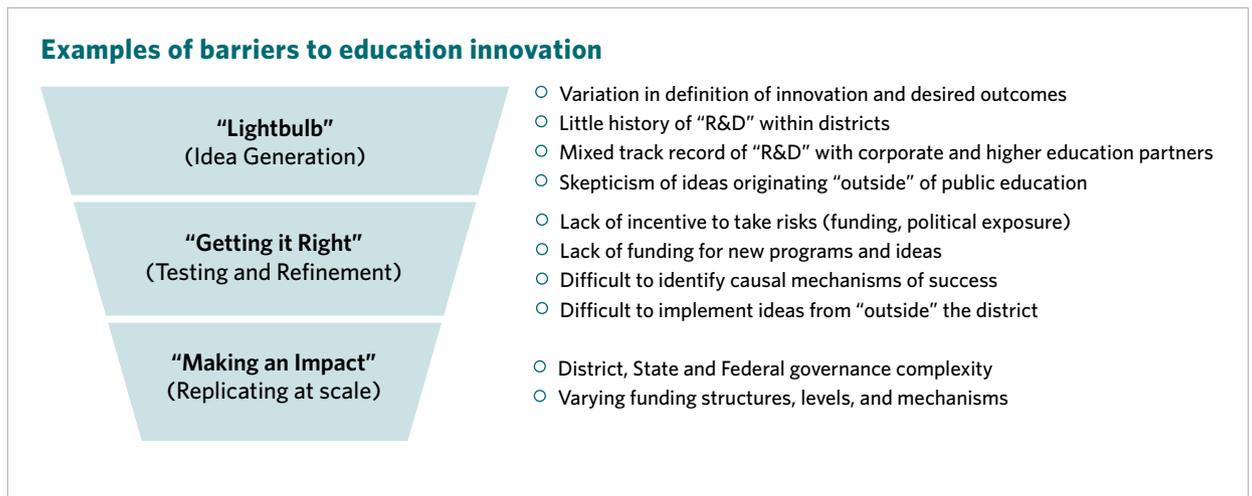"Making an Impact" (Replicating at scale) ◁— Large scale results achieved

In addition, there is often little political cover for experimentation, and the rigidity of funding mechanisms means that improvements in performance are not rewarded with additional resources.

Moving to the "Making an Impact" phase is one of the greatest challenges in education. One barrier is the difficulty of replicating ideas when there are over 15,000 U.S. school districts. The importance of human capital to implement programs also means that the causal mechanisms of success are often difficult to isolate and identify. The diffuse governance structure of the system makes dissemination of knowledge a tremendous challenge. The difference in funding mechanisms, funding levels, and forms of governance changes the context significantly from district to district, further retarding this replication process.

Many private sector and non-profit groups have turned away from local districts, pointing their investment dollars towards the entrepreneurial community in an attempt to uncover new ideas. These investments have yielded an explosion of promising new ideas, implemented at varying degrees of scale, over the past 10 or 20 years. However, private sector and non-profit giving remain miniscule in relation to the $600 billion annual budget for our nation's K-12 education. These ideas provide much promise, but are mostly focused on the first and second stages of the innovation process. There is little clear evidence that these ideas are filtering back into the traditional public system, indicating that most of these ideas will never achieve the scale necessary to generate real systemic change. Success clearly requires not just early stage idea generation, but requires movement through the process into the replication phase. As ▷

Examples of barriers to education innovation

"Lightbulb"
(Idea Generation)
- Variation in definition of innovation and desired outcomes
- Little history of "R&D" within districts
- Mixed track record of "R&D" with corporate and higher education partners
- Skepticism of ideas originating "outside" of public education

"Getting it Right"
(Testing and Refinement)
- Lack of incentive to take risks (funding, political exposure)
- Lack of funding for new programs and ideas
- Difficult to identify causal mechanisms of success
- Difficult to implement ideas from "outside" the district

"Making an Impact"
(Replicating at scale)
- District, State and Federal governance complexity
- Varying funding structures, levels, and mechanisms

noted above, there are tremendous barriers to achieving success at this stage, and so investors would be wise to consider whether opportunities exist to fund improved replication efforts.

DMC Perspective: Management Innovation—An Opportunity for Innovation

DMC believes that management innovation is a source of high-potential ideas for districts, and that it will increasingly be regarded as a key driver of student achievement. There are several reasons for this belief. First, management innovation is well regarded as a source of value in other fields. In the private sector, for example, management innovation of various forms has been credited with producing financial returns. General Electric managers pioneered the idea of business divisions in order to manage a rapidly expanding portfolio of businesses. Toyota's managers created a culture that empowered employees to give input and make production changes, and this culture is credited with helping to drive the company to the heights of the automotive industry. Southwest Airlines' management built a culture around human capital that allowed it to compete in the airline industry where its rivals experienced bankruptcy after bankruptcy. In each instance, organizational leadership produced new forms of management that created tremendous results for the company. At DMC, we firmly believe the same opportunity for management innovation exists within public school districts.

The second reason that management innovation is critical to the education world is that district leaders are well-positioned to exert control over the innovation process. The local district controls the majority of funds, the majority of people and expertise, and the majority of schools in which innovation could occur. Leadership has the opportunity to set the tone of the school district, determine how resources are allocated, and influence the culture of the organization. Much attention has been devoted to ideas generated "outside" the traditional system, but the real levers of control for replication and change reside with leaders inside the system. Increasing attention should be committed to identifying and supporting these leaders and their ideas to allow them to drive reform of the public school system.

Management Innovation: Some Examples

The DMC hears about management innovations implemented by its members every day, and seeks to draw attention to these ideas to encourage similar endeavors in other districts.

- Douglas County (CO), profiled in this edition of the DMJ, provides a great example of a district that has nurtured the innovation process in their system. The result is that new ideas bubble easily to the surface in Douglas County, making it easier for district leadership to identify and invest in high-potential practices. They have improved the use of time and resource allocation, filled gaps in high needs areas, and turned cost centers into profit centers for the district.

- Fairfax County (VA) Public Schools used an innovative scenario planning framework to generate buy-in and

support for the district's budget process when funding was projected to fall in 2010. Their approach allowed them to stay focused on objectives that were agreed to by a variety of constituency groups, while operating within its budget parameters.

○ Arlington (MA) Public Schools implemented a 10-step process to improve Special Education, improving outcomes and reducing costs for the district. They rethought the role of paraprofessionals, created a team to focus on reducing costs of Special Education transportation, and benchmarked staffing and service levels to identify areas of opportunity.

○ Brevard County (FL) Public Schools implemented a performance management model to develop and groom future district leaders. They have created a career development matrix to identify essential components of leadership, established professional learning communities to support individual professional development, and codified a set of development opportunities for their managers including mentoring, ongoing education, and job assignment flexibility opportunities. Through the development of these and other programs, they have developed a comprehensive performance management system that has transformed the orientation of the district's human capital.

The DMC believes that many "innovative" practices such as these reside within districts today. One of DMC's objectives is to draw attention to these innovations, and help our members to replicate these on a broader scale.

Bottom Line: Where the Opportunities Lie

The bottom line is that innovation is necessary as districts seek to deliver for their students in an environment of increased accountability and heightened budgetary pressure. Districts must come up with ways to achieve more with the same or less. As district leaders, it is important to build a culture and infrastructure so that innovation can flourish in your district. Innovation requires that you focus on results, and that you experiment and try new things. The ability to replicate and scale results is a critical component to the innovation sought by funders such as the U.S. Department of Education, the private sector, and the non-profit world.

The DMC believes that management innovation is a source of high-potential ideas for districts, and that it will increasingly be regarded as a key driver of increased student achievement. District leaders are well-positioned to implement these management innovations. While much attention has been devoted to ideas generated "outside" the traditional system, the real levers of control for replication and change reside with leaders inside the system. By identifying and replicating district practices that are working, there is an opportunity to re-shape and reclaim the notion of education innovation, while at the same time creating positive outcomes for our schools.

Over the past five years DMC has seen innovation flourish in its member districts. We look forward to hearing more of your innovative success stories and to telling those stories on these pages so that others can learn from and replicate your successes. □

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