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Chester E. Finn, Jr.



Michael B. Horn

Can Digital Learning Transform Education?

Education Next talks with Chester E. Finn, Jr., and Michael B. Horn

The enthusiasm for digital learning is contagious. More than 2 million K-12 students are enrolled in online courses today, and research firm Ambient Insight projects that figure will hit 10 million by 2014. Will today's wave of technology inexorably change the face of schooling, or must we first alter policy? Chester Finn, Jr., president of the Fordham Institute and editor of *Education Reform for the Digital Era*, and Michael Horn, executive director of education at the Innosight Institute, agree that for digital learning to realize its transformational promise, policy changes are imperative. Finn argues that these changes require a full rethinking of the education reform agenda, whereas Horn asserts that a piecemeal approach may be the wiser, more strategic course.

First, We Need a Brand New K-12 System

by CHESTER E. FINN, JR.

Digital learning is more than the latest addition to education reformers' to-do lists, filed along with teacher evaluations, charter schools, tenure reform, academic standards, and all the rest. It's fundamentally different: for it to fulfill its enormous potential will require a wholesale reshaping of the reform agenda itself, particularly in the realms of school finance and governance.

American education has the potential to be modernized and accelerated by "digital learning." Indeed, truly boosting student achievement—as well as individualizing instruction and creating quality options for children and families among, within, and beyond schools—will depend to a considerable extent on how deftly our K-12 system can

(continued on page 56)

As Digital Learning Draws New Users, Transformation Will Occur

by MICHAEL B. HORN

The growth of online, or digital, learning presents real opportunities for transforming the nation's public-education system to enable it to customize an education for each child and boost student achievement dramatically and affordably. Whether digital learning will fulfill its potential remains to be seen. The policies and regulations that govern online providers will certainly matter.

There are real disagreements over what set of policies would best enable digital learning to achieve its potential. It may be some time before a sufficient track record exists so that the current regulatory issues can be resolved. And there is another significant question to be addressed as well. As new policies and regulations governing digital

(continued on page 57)

exploit this potential, in both its pure form (“full-time online instruction”) and various “blended” combinations of digital and brick-and-mortar-based instruction.

Making the most of these remarkable opportunities, however, hinges on our willingness to alter a host of ingrained practices. We dare not settle for patching a bumpy, twisty country lane. We need to build a smooth new road—and bank the curves.

There are more such obstacles than one might think, and every one of them will prove hard to overcome, because they are deeply carved into our traditional K–12 system and regarded as valuable protections or benefits by education’s innumerable factions, bureaucracies, and interest groups.

Nothing on today’s familiar reform agenda can get this job done. That is to say, mounting serious efforts to overcome the obstacles means reshaping that agenda, even redefining what we mean by “education reform.”

The barriers take three forms.

First and most familiar are self-absorbed and self-serving groups that do their utmost either to capture the potential of technology to advance their own interests or to shackle it in ways that keep it from messing with those interests.

Second, also familiar but showing up here in new ways, are issues of organizational capacity within our public-education system, a system that has enormous difficulty accommodating and assimilating change, and the more wrenching the change the greater the difficulty.

Third—and newest, most perplexing, most fundamental, and thus hardest to tackle—are the core governance and financing structures of our K–12 system itself. Though we’ve begun to recognize these as major impediments to important reforms within today’s brick-and-mortar world,



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Let us take these up in turn.

Self-centered Interest Groups

The many adult interest groups that live off our public-education system are already doing their best to co-opt digital learning for their own ends, and to ensure that nobody uses it to threaten their power, membership, or revenue base. Two such groups are especially powerful players in the politics and policies of public education.

First are local districts and their school boards, vigorously represented by the National School Boards Association (NSBA). This crowd would stifle the openness and global reach of digital learning in the name of district empowerment and local monopoly. According to NSBA’s Ann Flynn (its director of education technology), online learning “should be something that school districts can control.”

Yet leaving districts and their boards in charge of digital instruction will retard innovation, entrepreneurship, collaboration, and smart competition. It will raise costs; undermine efficiency; block rich instructional options; restrict school choice and parental influence; and strengthen the hand of other interest groups, including but not limited to already too-powerful teachers unions.

For wherever one finds school districts and boards, one finds unions equally determined to prevent digital learning from shrinking their ranks or weakening their power bases. In many places, they have secured legislation limiting the scope of digital learning or have to counter its growth. In California, for example, the state teachers union’s model contract requires that,

No employee shall be displaced because of distance learning or other educational technology. The use of distance education technology shall not be used to reduce, eliminate, or consolidate faculty positions within the district.

Elsewhere, unions have ensured that class-size limits nonsensically apply to online schools. Their imperative to maintain membership and dues trumps any interest they may have in easing and strengthening the teacher’s job with technology’s help.

Organizational Capacity

Over the past 50 years, the student-teacher ratio in America’s K–12 schools has dropped from 27:1 to 15:1. When all the nonteaching pay stubs are added, we find more than 3 million teachers and umpteen more “support staff” working in what today is America’s second-largest industry. Yet



Continued
page 58

learning are adopted, should they apply to the rest of the education system?

Take, for example, Utah's digital-learning policy, which was enacted in 2011. Along with a marketplace of online course options for students and a means for dollars to follow students to the course of their choice, it created a way to base payment to online providers in part on student outcomes. Online-course providers receive 50 percent of the state's per-pupil funds for a given online course up front and are paid the remaining 50 percent only when a student successfully completes the course. It's a bold policy that begins to tie public education expenditure to student success.

A few online-learning providers have, in private, cried foul. Why shouldn't performance-based funding apply to all K-12 education providers? Why discriminate, they say, against the online providers?

Pick Your Battles

Why indeed? There is a seductive logic to this narrative. If digital learning represents the means to transform America's education system, shouldn't the accompanying policies—such as Utah's, which changes the regulatory structure from regulating inputs to recognizing outputs—govern America's education system as a whole?

Following this logic, however, could actually strengthen today's factory-model education system and work to prevent digital learning from transforming it. When Chester Finn writes in the previous essay about how self-centered interest groups and the current system's organizational capacity serve to block the transformational road ahead, he inadvertently captures why.

Imagine introducing legislation to fund the traditional education system based on Utah's model for funding its online courses. The reaction from those who operate the traditional system and their "self-centered interest groups" would be predictable: they would fight the change. Because the education-reform agenda has not focused on this type of policy to date, as Finn notes, there would not be a strong coalition in place to counter the opposition. The traditional system and its beneficiaries would probably win that fight if it took place today or in the near future. It's not hard to argue that given how innovative and relatively untried the funding policy is, their victory might not be such a bad thing for now.

Similarly, moving away from seat-time requirements toward a competency-based system, in which students advance upon mastery of a concept or skill, is critical to unleashing the full power of digital learning. But because today's education system was modeled after a factory, time

rather than learning is the primary unit of measure. Shifting the regulatory structure to enable competency-based promotion may not provoke as vehement a fight from the established system as a new funding policy would, but it won't necessarily create the change intended in the current system either, as those time-based processes are deeply ingrained in schools' organizational fiber. Although states can shift toward competency-based promotion, we should expect its implementation to be piecemeal, as those engaged in digital learning utilize the mastery measure first and most dramatically.

As these examples demonstrate, education regulations for the digital-learning world of tomorrow will almost certainly be implemented piecemeal. Online learning will, for many reasons, be held to a higher standard initially. Those bullish about using digital learning to create a student-centric



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system by creating policies that focus on student outcomes and growth, rather than inputs, will need to take a strategic view of the course ahead and not invite inevitable battles until they are armed to win them.

Envisioning the Future

With two distinct sets of regulations in effect (broadly speaking for simplicity's sake), how will the education system be transformed?

The theory of disruptive innovation, which explains how sectors offering solutions that are complicated, expensive, and relatively inaccessible are transformed into those providing solutions that are simple, affordable, accessible, and convenient, helps show a possible path forward and provides a theoretical underpinning for the piecemeal strategy.

Online learning is a disruptive innovation. Such innovations start as simple products or services that appeal to people on the fringes who cannot access, use, or afford the sector's primary solutions. Over time, the disruptive innovations improve and become good enough to handle more



Continued
page 59

education's bulked-up employment has barely touched overall student achievement. Instead, it has contributed to the bureaucratization and routinization of the K–12 enterprise, buttressing its rigid procedures, internal fiefdoms, and culture of compliance rather than fostering innovation, much less transformation.

Our current system is laden with input regulations like textbook mandates, certification requirements, and notches on teachers' professional-development belts. None of these has been proven to advance student achievement (and some have actually been shown to hinder it). In the digital-learning era, these become even more dangerous tokens of "quality," as they work to hamper innovation.

But it's not just bloated personnel ranks and ineffective quality-control metrics that have held the system back. Reformers share in the blame, thanks to their habit of layering new policies upon old and shoving program after program into the current educational frame rather than replacing outmoded initiatives. With that layering, of course, has come the education system's addiction to cash and its assumption that nothing can be done differently without additional resources.

In fact, it should cost taxpayers *fewer dollars* to educate each pupil in the online world. According to a recent analysis by the Parthenon Group, full-time virtual schooling currently costs, on average, about \$3,600 less per pupil than its traditional counterpart. The potential savings associated with "blended learning" are smaller but far from negligible.

Fundamental Structural Flaws

Two nearly universal and largely taken-for-granted structural arrangements in American public education pose huge impediments to the success of digital learning. Yet this education revolution cannot occur under the customary arrangements for financing schools nor within our current governance system.

Consider, first, how we fund education: financing programs and bureaucratic structures via rigid and formulaic distribution, not paying for students or schools, much less

for learning. This antiquated system stymies innovation and makes precious little sense in an era when students should be able to direct resources to the education providers of their choice.

It doesn't have to be this way. As Paul Hill, founder of the Center on Reinventing Public Education, has pointed out, we can leapfrog our system of school finance to truly fund *education*, not institutions; move money as students move; and pay for unconventional forms of instruction. This model would offer parents a choice of whole-school providers while also affording them a limited amount of "pocket money" with which to purchase variegated tutoring or enrichment programs, from advanced math classes to piano lessons. Hill writes that "this would allow some public funds to flow to new and innovative programs.... Yet parents could not be led into making choices that compromised their children's core instruction."

Now consider our agricultural-era devotion to "local control" of public education and ask how can this possibly work well—indeed, what does it even mean?—when the delivery system itself is unbound by district, municipal, or even state borders? Who is really "in charge" when students assemble their education from multiple providers based in many locations, some likely on the other side of the planet? Digital learning, like digital communications, lives on the Internet—often "in the cloud"—and knows no natural geographic or political boundaries. Sure, it can be inhibited by totalitarian regimes that fear web sites and communications that may loosen their grip. When left to

flourish in the marketplace, however, digital learning will yield innovation, competition (affecting content, quality, delivery mechanisms, and price), and eventually economic efficiencies. And those benefits will—and ought to—spread without regard to municipal boundaries.

To be sure, public officials have an obligation to exert curricular quality control, for which they in turn are accountable to voters and taxpayers, and they must safeguard minors from "virtual menaces." But that is not the same as putting traditional districts in charge of digital learning, as our current governance arrangement presupposes. A good case could be made for national governance of online learning, but, at the very least, this is something states should take charge of. They can provide the scale necessary to support research and development, to allow for flexible programming, and to extend the



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Continued
page 60

complicated problems. As they do, people gradually abandon their old solutions and adopt the disruptive innovations, as they are satisfied with something that is good enough and is far more affordable, accessible, and convenient.

The rise of the personal computer presents the classic case. As the personal computer emerged in the 1970s and 1980s, it could barely do simple tasks like word processing, let alone the complicated tasks mainframe and minicomputers performed. But most people could not afford, access, or use mainframe and minicomputers. Personal computers began by serving these individuals. Bit by bit the computers improved, to the point where in the late 1980s they could do more complicated tasks. People who had previously used mainframe and minicomputers flocked to the personal computer, which was good enough even for their needs and significantly more affordable and convenient. Transformation did not come about by the personal-computer companies picking a head-on fight with the mainframe or minicomputer companies. Instead, personal-computer companies started in markets where the older companies could not compete and gradually gained share as their products improved. A similar story has been playing out with online learning over the past several years (see “How Do We Transform Our Schools?” *features*, Summer 2008).

What’s salient for the regulatory question is this: whenever a disruptive innovation emerges, it changes the definition of quality so dramatically that the metrics used to denote quality in the old system are completely inadequate. Those attributes we had previously associated with being good aren’t necessarily the ones that drive performance in the new system, so leveraging an existing framework to regulate the disruption just won’t do it justice, and could constrain it in unforeseen and unfortunate ways.

Trying to impose new metrics of performance or a new regulatory framework on the old system doesn’t work either. The systems are fundamentally incompatible, and any attempt to force them together will meet with fierce and predictable resistance. Existing and established systems are built to do

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toward competency-based learning, and away from regulating inputs toward a focus on student outcomes and student growth and toward financing systems in which money follows students, may also make good sense for the education system as a whole, but they are absolutely critical to this new innovation, as Finn observes.

Imposing new metrics on the old system, however, won’t work for the same reasons it wouldn’t have worked for computers. Predictably, and, to some degree, rightly, the groups that stand to lose the most from change will be highly motivated to fight back, or, even worse, to quietly co-opt the changes to support traditional ways of doing things.

Fortunately, disruptive innovations don’t need to engage in that fight. Transformation occurs as users leave the old system one by one and join

certain things well, and by definition, they are not built to do other things. Indeed, refusing to acknowledge this incompatibility creates a high likelihood that the old will simply co-opt the new to sustain what it already does.

Consider the computer industry again. When mainframe and minicomputers reigned supreme, the mark of quality in a computer tended to be size. Bigger meant better. The rise of the disruptive personal computer flipped this on its head. Now smaller was better, as convenience and affordability were critical for the customer to place the computer on her desktop. Likewise, the complexity valued in mainframe and minicomputers was not valued in personal computers; simplicity, such that nearly anyone could use one, became a stamp of quality.

Applying the old metrics of quality to judge the personal computer didn’t make any sense, nor would have applying the new measures to the old products. This has been true whenever we’ve seen a disruption take hold, in sectors as diverse as consumer electronics, aviation, the military, and communications.

The same dynamics are in play with online learning as it gradually disrupts the existing factory model-based classroom system. Moving away from seat-time requirements



Continued
page 60



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mangled the legislation, even as advocates agreed to compromises that they later came to regret. Thus nearly half the states cap their charter programs. Others force charters to operate under extant union contracts. Some restrict charter-authorizing powers to districts, a classic case of empowering foxes to look after chickens. Almost nowhere are charters properly funded. In many places, they also remain shackled by myriad regulations.

We've seen how these co-optations and compromises have weakened the realization of chartering's potential. If this happens to digital learning, too, the loss will be still greater. For while charters (perhaps due to the constraints they've faced!) remain a smallish subset of "different" schools that operate alongside the traditional system, digital learning has the potential to alter the system fundamentally and irreversibly. It's no sideshow. It isn't even the center ring. It's the circus tent itself. ■

reach of top-notch teachers.

Whew! Reshape the financing and governance of public education? On top of reimagining human-resource arrangements for teachers and improving quality control? Yes, it's a tall order and a major reformulation of America's education-reform agenda. It doesn't erase the need for rigorous standards, tough accountability, vastly improved data systems, better teacher evaluations (and training, etc.), stronger school leaders, the right of families to choose schools, and much else that reformers have been struggling to bring about. But it says, in effect, that far more needs to be done to bring U.S. public education into the modern era.

A Cautionary Tale

Unconvinced? The charter school saga is a precedent worth recalling. In the early days, anticharter forces

the new disruptive one. E-mail, for example, didn't seek to change the regulations and business model for the postal service. Transformation came when people, over time, recognized that e-mail was the more convenient option. Although it is tempting to imagine that we could just take the lessons or the core technology from the disruptive innovation and simply insert them into the original domain to transform a sector, it doesn't work that way. The same patterns will play out with digital learning. Policies governing digital learning will and should be adopted piecemeal without requiring major modifications of current institutional arrangements wherever possible. Some of these policies will have an impact on the existing education system, but many won't at the outset. For example, enabling dollars to follow students is critical for digital learning and is impossible to do without having some impact on the existing system. The same is not true, however, with the performance-based funding component in the Utah bill, which can and should be implemented separately.

What is critical is to make sure that as online learning continues to develop, it can do so within a newly imagined regulatory framework that puts students and their learning at the center. As the digital learning world expands today, however, that isn't necessarily happening. The models and providers receiving funds aren't always the ones that are best for students, because a policy framework that would distinguish on the basis of quality is not in place.

If the right policies are not put in place soon, we may find ourselves back where we started: with self-interested groups that benefit from the existing arrangement fighting the reforms that would bolster student learning. Only now those groups will include the ascendant online-learning providers themselves, as the traditional system will have co-opted the online-learning opportunity for its own aims. ■



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