

# Strategy for Realizing the Potential of 'Digital'



*It doesn't work to think about technology 'personalizing' learning, if you envision the traditional classroom*

*Here's what a personalized high school in fact looks like.*

*It's a paradigm change in the concept of 'school':  
from teaching to learning.*

# Strategy for Realizing the Potential of 'Digital'

## 1. The Dilemma for Those Advocating 'Digital Technology'

There surely is tremendous potential in digital technology. The potential is the focus of most of what's said and written about 'digital'. So we won't deal with that here. We'll stipulate that. We'll deal with the strategic question: how to realize that potential.

Clearly there is a big push now for 'digital'. Jeb Bush's foundation has a set of recommendations, proceeding as Digital Learning Now. The software industry is active; held a symposium with CCSSO and ASCD in Boston in August. The U.S. Department has revised the National Technology Plan. INACOL and others are actively promoting it.

At a recent conference in Minneapolis an exhibitor was asked: Who do you market to? "To schools", he said. Who specifically? "The superintendent". But the superintendent is not the school: Why not market to the school? "The district decides", he said.

This appears to be typical. And we hear the trend is this direction. So it's no surprise the marketing strategy looks toward districts; assumes the districts will see benefits and adopt the technology, especially if some changes in state law encourage them to do so.

Districts are, however, fairly locked-on to conventional school. Some administrators show some hostility to digital devices, seeing the phones the students bring into school as a distraction from their schooling. (Note the recent NYTimes story on Redwood City CA.)

So quite often the result is that 'digital' enters school mainly to automate current processes and existing models. (Movie cameras were initially used to film stage plays.) This concern is explicit (page 64) in the National Technology Plan. To date, as Linda Roberts observes, digital has been "peripheral" rather than central in education. Perhaps because its potential is to disrupt the existing model of teaching and learning.

This could cause districts to continue to resist. In an article years ago about technology George Young, then superintendent in Saint Paul, said: Bureaucracies have strategies to resist change. If these fail, and change is introduced, they have other strategies to neutralize the changes. It is not easy to change existing models.

So the critical question is: How to introduce digital technology knowing it will radically change traditional processes? Enabling legislation clearing away barriers might be insufficient. It might be better to get the decisions about adopting-digital into the hands of parties who will use it creatively; to its potential.

Who are those parties? And, how might that be done?

Probably the answer is to re-arrange K-12 so that decisions about the take-up and use of technology are made by the people in the schools.

To the industry this will seem unrealistic. Business firms will not want to retail hardware and software school by school. They will want big sales; will hope to sell a district at a time.

So there is this dilemma: The strategy that seems simplest and most obvious might prove the least effective. (Presented with this in the 1980s an executive with Control Data buried his face in his hands. "I haven't got time to talk to the teachers", he said.)

This dilemma presents the issue the advocates for 'digital' now need to discuss -- if the object is indeed to change and improve learning to the fullest.

## 2. Two Theories about How 'Digital' Will Develop

That discussion should start with the assumption that digital electronics will inevitably change learning dramatically. The important question is how far this revolution can develop inside public education, and how far it will develop outside.

Digital electronics have radically changed other systems and industries that essentially store, organize, process and distribute information. It is hard to believe that 'education' will be exempt. How can there not be huge potential for learning to change, especially considering how skilled young people are with this media?

In some places advanced uses of 'digital' are now contributing to learning; computer games and personalization, as in the innovative schools in the chartered sector or in new schools like School of One in New York City. Young people are learning both in school and out.

Let's look at the more advanced uses, those that make digital technology central to learning, under each of these scenarios.

### Scenario 1: Digital technology bypasses school

The 'outside' scenario is certainly not inconceivable. It certainly would not be complicated, since the bypass has just three elements:

- Ways for students to learn.
- Someone to assess/validate what they have learned; are able to do.
- Acceptance of these validations by employers, colleges, military, trades; the institutions the young people want to enter next.

The first is appearing. The third would come fairly easily. The key is the second. And there do now appear to be entities moving to assess and 'certify' individuals. We're told that employers, feeling the scores and the transcript do not tell them all they need to know, are pressing for a broader assessment. It is possible some better certification will come from the consortia now at work on common assessments.

The bypass does create a kind of voucher system. Private firms, in an innovating industry, develop ways to learn. Students could access any 'provider'/vendor. Money would move with the students. If the resident school/district agreed to give credit, fine; if not, others could.

Major K-12 associations are likely to oppose this. AASA and NSBA have dissociated themselves from Digital Learning Now. So the bypass would have its problems politically. And to the extent the learning depends on family private resources there will be objections on equity grounds. These might not stop the bypass developing. But they would add to the political difficulties.

So there are reasons to want the transition to come instead within public education. Which takes us again to the question: How? What would be the strategy for that?

## Scenario 2: Digital enters through a redesign of system and school

We suggested earlier that 'digital' is most likely to realize its potential -- to reshape learning fundamentally -- if the decisions about its use are made by schools rather than by district officials.

For district officials a variation among schools disrupts uniformity, and control. For policymakers, by contrast, innovation is a hope. The public economy is stressed. Serious leadership understands: We can't just tax our way out, can't just cut our way out, can't count on 'growing' our way out. Will also need an imaginative redesign of the public sector that introduces different ways of solving problems and reaching goals.

Policymakers need an alternative to the centrally-planned and politically-engineered 'change' that has produced such disappointing results these past 25 years. Talk continues about 'comprehensive' change. But "Blow up the system and start over" was always a silly idea. It does not happen.

There is disappointment, too, with efforts to change the system from the outside; trying to 'improve' a system lacking the incentives for self-improvement. That has been the strategy. Has it worked well enough to bet all the chips on more of the same?

The K-12 institution is far too complex for 'comprehensive change': 50 million students, three million teachers, 15,000 districts, 80,000 schools; 'loosely-coupled'; not under central control. It is an error to believe K-12 can be transformed by 'national policy'. The redesign must be carried out at the level where the system exists in law. It would help to see that the counterpart of the European nation (Finland, say) is the American state (Minnesota). Washington is Brussels.

'Continuous improvement' is appealing but is insufficient by itself. Major progress requires innovation. Bill Gates did not work for better mainframes: He introduced the personal computer.

Realistically the strategy for major progress has to be: Innovation in a context of choice. Follow the pattern of other industries. Turn K-12 into a user-driven system.

In the industries transformed by digital electronics the 'different' is taken up by early-adopters while others continue with the traditional. For some time the different models run along together. Think of it as a dual-track strategy; or of a 'split screen'.

The system is open. Change is voluntary; not coerced. So change is easier politically. Gradually (and sometimes rapidly) the new-and-different improves. In time the transition is completed. It is a process of replacement. Tractors replace horses; computers replace typewriters. What's essential is to

keep the traditional from suppressing the innovative; to explain toleration to those who insist there is only one best and right way.

The split screen will still require efforts at 'improvement', since new models are always imperfect when first introduced. But the strategy is Innovation + Improvement. It has to begin with innovation.

So: How to introduce this strategy? Specifically: If the theory is for K-12 to become a user-driven system, who are the 'users'?

### **3. Strategy: Make Autonomous Schools the 'Users'**

The strategy -- for realizing the full potential of 'digital' for learning, at least -- becomes one of moving the decision on adopting the innovations out of the district central office and increasingly into the schools.

The district is not the user, anyway. The *schools* are the users; teachers selecting what they see will meet the needs of the students. Only the teachers know the students and what they individually need.

Technology is taken up rapidly when it makes work easier and more successful/profitable. On the job of learning the workers are in the schools: the teachers and the students together.

Think about the American economy after 1870. In industry work and ownership separated. As owners introduced new technology workers were displaced. This bred conflict as workers organized to fight for a share of the productivity gains.

In agriculture it was a different story. On the family farm (the South is another story) worker and owner remained one and the same. Farmers quickly took up machinery, seeds, cropping, husbandry; new technology and new procedures that made farming easier and more profitable. Productivity soared; farmers became immensely better-off.

K-12 is still organized on the industrial model. (Albert Shanker commonly ran analogies with auto factories.) The arrival of digital technology threatens conflict. Labor has already built defenses.

All of which underscores the need to think carefully about how, strategically, to introduce digital technology; whether or not to market just to 'the boss' in the traditional boss/worker arrangement.

#### **Policy is moving toward the autonomous school**

How might we make the schools the users? In two ways: by creating autonomous new schools and by extending autonomy to existing schools.

To many this will seem to run against the trend of the times. But perhaps not. Dispersed and decentralized as it is, diverse and contentious as the 'improvement' discussion is, policy is in truth moving partly in this direction.

Clearly there is an impulse toward centralization, standardization. Some do believe 'scaling up' means a small number of organizations all growing larger. The trend toward nationalization intensifies the fight for political control, each group hoping its program might win.

But at the same time there remains an impulse toward decision-making at smaller scale. This is not just the 'local control' defended by district boards of education. It is the idea (John Goodlad and others) of the school needing to be the unit of improvement; teachers as professionals responding to what they see their students need.

Chartering now provides a platform for new and autonomous schools: It is this country's principal experiment with school-based decision-making, Allan Odden says. School-autonomy is visible also in the Pilot Schools now spreading from Boston to Los Angeles, and in Minnesota's 2009 legislation for 'self-governed schools'. The Baltimore superintendent has moved toward school-level decision-making. So did Mayor Bloomberg and Chancellor Klein in New York City.

Autonomy confers major advantages. It permits the school to move rapidly to adjust and adapt as needs and problems appear. It permits decisions related to real needs of actual/individual students.

It also solves the otherwise-insoluble conflict about 'accountability'.

The strategy meshes with the interests of several important elements in K-12. Let's begin with the teachers and with that 'accountability' issue now bedeviling the discussion.

#### **4. There Is Political Support for the User-driven Strategy**

It would make no sense to embark on a strategy with no potential sources of support. But happily there is support for the effort to build a user-driven system with the school as the 'user', the adopter of the innovative technologies.

##### **The 'School-based' Strategy is in the Interest of Teachers**

Commonly today we hear teacher unions described as the obstacle to progress. The usual response is to call for policy and management to act on this 'problem'; on teacher assignment, compensation and tenure. Predictably, getting tough intensifies the conflict with unions.

It would help to understand that problems are usually the product of circumstances; are not resolved by attacking the symptoms they display. The sensible course is to find what is causing the problem and to change that.

The cause of the 'accountability' conflict is people outside telling the school how to do its job, while insisting on holding the school and teachers accountable for 'performance'. Teachers (like most of us, perhaps) decline to accept responsibility for decisions made by others; for what they do not control.

Dealing with this 'circumstance' means aligning authority and accountability. This can be done only by moving authority into the school: There is no way to move accountability to those outside now controlling the school (boards, superintendent, legislators).

The autonomous school might be run by a principal in the normal manner. But it is possible also to vest the authority in teachers organized as a collegial group, on the model of the professional partnership common in most white-collar occupations, creating a kind of 'ownership'.

The partnership model is now in fact appearing; mainly in the chartered sector but now in the district sector as well -- as in Minneapolis and Denver, where the teacher-union leadership is directly involved.

In schools operating as partnerships teacher and student behavior changes remarkably. It seems clear that where teachers control what matters for student and school success teachers accept responsibility for student and school success.

Two teachers last April explained to Secretary Duncan and his top staff how in the partnership they make decisions, arrange the learning, manage the school and its finances and select, evaluate, compensate and when necessary terminate teachers.

Some of these schools make conspicuously good use of the new digital technology, especially to personalize learning. Public Agenda has found strong teacher interest in the idea of the teacher-partnership school. The NEA leadership is now looking at teacher-partnership schools.

Skepticism is predictably widespread -- about this idea and about the unions' interest in it. District officials understandably take as given the existing management/labor arrangement. So do business leaders, who tend to see problems as problems of organization rather than as problems of system-design and to see solutions as action by management.

This underestimates the union. Unions are democratic organizations. Leadership is elected. As realists they are bound to see that so long as the public believes teaching is the key to learning and wants 'better teaching', and so long as improvement is a management responsibility, 'labor' will be seen as the obstacle.

The way out is to cut a new deal; to come together around the idea that in return for accepting responsibility the teachers (those who wish) can get the professional status the union has wanted for its members.

The change is necessary. Things that are necessary tend to happen. The transition will be gradual. But it will come.

### The school-driven strategy is in the public's interest

A strategy aimed at introducing digital technology through the schools -- free to take up innovation and use it to its full potential -- will advance the public interest -- in four ways. It will (1) improve learning, (2) help make K-12 economically sustainable, (3) improve teachers and teaching and (4) produce a self-improving system.

**Better learning** -- Digital technology can personalize learning. Personalization makes it possible to change the pace of student work. Those needing more time will get more time; those able to go faster will go faster. Learning improves on both counts.

Personalization can also let the individual student pursue in depth what s/he finds most interesting. It encourages specialization -- and excellence usually requires specialization. Excellence is essential: A country with all students merely 'proficient' will not compete.

Personalization and specialization will increase student motivation. Young people know the digital technology; bringing it into school should get an enthusiastic response. Motivation matters: Motivation generates effort and effort matters, for performance. Anything more we get from students comes for free. Why would we not want to maximize student-motivation?

Some rethinking is implied. Specialization is likely to mean that not all students will know all subjects well. And the more advanced forms of digital electronics will require broadening the concept of achievement beyond academics. Today the concept of 'success' is the equivalent of evaluating autos only on top speed and rate-of-acceleration. Success is a broader concept -- with cars and learning.

**Economic sustainability** -- The traditional labor-intensive model of schooling -- the teacher the worker, "delivering education" -- is probably not sustainable. Productivity is essential. But it will come more through redesign than through 'cutting'. Productivity gains come from introducing different processes.

A well-known economist used to insist there is no concept of productivity in services. What would you do? He asked: Drop the second violin in the string quartet? Have it play the music twice as fast?

The fallacy is obvious: It assumes you can hear Mozart only live in a concert hall; driving, parking, buying tickets. The answer obviously is to step outside the live-performance paradigm; into the technology of recording that makes it possible to hear the best performances, over and over, in your living room: no driving, no parking, no tickets.

With learning, too, productivity comes from stepping outside the old 'teaching' paradigm; introducing new concepts and approaches.

- Clearly, there can be big gains from getting students to move through faster; starting earlier on their lifetime income. Minnesota has 150,000 juniors/seniors, on which it spend \$10,000 per year. Multiply \$10,000 by 150,000. Show legislators that number.
- There could be significant economic gains from doing secondary and post-secondary education in six years rather than eight, or in three years rather than four.
- 'Digital' can make available courses for which districts and schools cannot afford to staff-up.
- Project-based approaches turn the teacher into more of a generalist; making it possible to sustain small schools in sparsely-populated parts of a state.
- Personalized learning makes the teacher increasingly the adviser, a coach. And so increases teacher professionalism.



**A high-quality force of teachers** -- Everyone says 'better teaching' is imperative. But on its current path policy is making teaching a less desirable job and career. It is hardly realistic then to expect to attract better people into teaching.

The effort at "better people for the job" can succeed only if at the same teaching becomes a better job for its people.

That comes with enlarging the authority and role of teachers; with treating teaching like other white-collar professional occupations in which the worker is assumed to know how the job is done. And in which the partnership model is dominant. This new professional role will increase teachers' motivation. Motivation matters for teachers, too.

(Note, by the way, how the discussion about 'better teaching' continues to assume course-and-class school; how little assumes personalization.)

**A self-improving system** -- K-12 has been an inert system. Most organizations find it difficult to change themselves in fundamental ways. But K-12 has two additional problems. Being insufficiently open to innovation it lacks the dynamics that in other systems push the organizations to change: Their management is reluctant to give the schools the freedom to decide the approach to learning. And those outside the school, not knowing the students, are inevitably tempted to think there must be some technique that will "work" for everyone, which schools should obviously be required to adopt.

As a result traditional 'reform' has tried to 'do improvement'; to push in from the outside the changes the system cannot make itself. That is enormously expensive in time and money; requires a continuing priority on 'education' that it will be difficult to sustain.

Far better to concentrate reform effort on turning K-12 into a system that is open to new organizations offering new and different models. This will simultaneously introduce innovation and provide the districts incentives (reasons + opportunities) to do improvement themselves; on their own initiative, in their own interest, from their own resources.

### The 'school-driven' strategy is essential for the industry

Most in the 'digital' industry probably feel they have no choice but to take the system as they find it and to market to the districts.

Yet there is that dilemma: What if the approach that seems so logical cannot get 'digital' beyond the peripheral, so cannot in fact realize the potential of the new technology?

It is probably unrealistic to expect the potential -- the appeal of the "black box" -- to sell itself. There does need to be a strategy for making 'digital' central for learning.

Sometimes a carom-shot is necessary. To introduce 'digital' successfully it will be necessary first to open the system more widely to schools able to adopt these new approaches. The time has come to make the market by working through the states to re-structure K-12 to expand the autonomous-schools sector.

To create a system driven by the schools as users there will need to be an effort to get authority increasingly into schools willing and able to take up radically-different approaches to learning.

Arranging K-12 to do that means hard work in the policy area; requires 'institutional innovation'. It means talking to state policy leadership about installing reasons and opportunities for change. K-12 exists in state law; the states are the contractors on the job of redesign.

State policymakers have been opening the system; introducing ways to create new and autonomous schools. A major problem is that advocates for 'new models', and for entrepreneurs and entrepreneurship, have too often taken these initiatives for granted; have failed to work for their strengthening and expansion.

Success will require re-directing the thinking, beyond the traditional strategy of enabling legislation and pilot projects; beyond federal grants.

Happily, a focus on the states is now good politics. State action now in accord with the politics of the time.

It will be a good idea, too, to get the federal government to see its role as the activation of state law-making. Washington ought to be delegating change and improvement to the states in whose laws the system exists.

Again: All this will come only gradually. It is not bad to start small. Many big changes have had small beginnings. It is also realistic. It is not bad to be realistic. Meantime, efforts can continue on the 'improvement' agenda. (The 'split screen', again.)

So we make a single, critical recommendation, which has to do with basic direction.

## **5. Recommendation**

The industry and others interested in accelerating the effort to realize the potential of digital technology for learning should ally with:

- Those in the policy community with experience in system-change
- The interest of the teachers and unions in getting professional authority into the schools
- the interest of the students in making school motivating (and the students' skills with digital technology)
- the concern of those financing K-12, who want an economically sustainable system and
- the effort of others to broaden the definition of achievement to include the "21<sup>st</sup>-century skills".

Together these have the power to overcome the in-built system resistance.

Discussions about this broader strategy, this agenda for accelerating the take-up of digital technology, should begin immediately.