Digital Transition Model Architecture

A Best-Practices Approach to Effectively Transitioning to Digital Curriculum

The last twenty years have been a time of unprecedented advancements in technology and its integration into society. Embracing those advancements is key to creating an educational system that fully prepares students for the modern world. The process has plenty of pitfalls and risks, but a solid digital curriculum strategy and architecture can guide a school district through the transition and into a fully digital education age.

The Current State of Digital Education

While computers and devices have been extant for many years, the price point was often too high for wide-scale implementation to be practical for school districts. During the 1980s, 1990s, and 2000s, when every other industry was making the transition to a digital-centric environment, the educational system was left behind. For a long time, the best they could do was computer labs and single computers for whole classrooms.

DEFINITION:

(A School's) Digital Resources Transition Architecture is the mixture of systems, individual resources files, tools and hosted or internet subscription based immersive-environment-adaptive digital courseware, and online service providers; arranged in such a way to provide a means of archival and retrieval, communications or activities, and meaningful coverage of needed subjects and topics by grade or age as required against a curriculum map.

Everything changed a few years ago with the introduction of low-priced tablets such as iPads. The lower price point made it possible for a superintendent to afford to begin placing numbers of devices into classes, if not into the hands of every student. Except there was one problem: what was a student supposed to do with their device? More often than not, the device became an auxiliary tool that was only used occasionally.

The Learning Counsel's research indicates that more than 70% of students have a device in their hands for a significant portion of the school day, either their own device, a school-issued device, or off a cart or in a lab environment at some point.

Embracing Digital Curriculum

The key to getting the most out of digital technology is to take the lead from other industries that have successfully made the transition. With the right game-changing software, computers that were once secondary tools became the central method of getting work done in the office. Adobe products changed the way creative tasks were done, and CAD software pushed the drafting tables right out of the office. When it comes to education, that game-changing software is digital curriculum.

So while getting devices into the hands of all of the students in a district is a good step, it's only setting up the infrastructure. Digital curriculum is needed to take full advantage of the devices. In order for it to be as effective as possible, the right strategy and digital curriculum architecture must be in place.

Changing the Approach to Education on a National Scale

Implementing digital resources of any kind isn't just adding something to the classroom that students can use once they've finished with everything else. Real digital curriculum represents a change in how students are educated using various resources and a change in the entire approach to teaching. Full implementation involves a lot of work, planning, and investment, so it behooves a school district to make sure they're taking the right approach. The best way to do that is to avoid strategizing in a vacuum.

Digital curriculum is currently being implemented across the country, and the conversation is taking place on a national scale. The widespread discussion represents one of the greatest resources for school districts. School districts looking to transition to a digital curriculum should seek out gatherings of fellow educators who are going through the same process. Additionally, there are publications and reports which compile the ideas,

> **"The goal of digital curriculum implementation is to bring all school districts into the modern digital age and revolutionize the field of education.."**

strategies, and successes from across the country to help provide guidance.

There have already been successes. Many forward-thinking school districts have whole-heartedly embraced digital curriculum and have made great strides towards implementing it. They'd be the first to admit that they've still got more to do, but studying their successes is a good place to begin for a school district just starting down its own path.

Implementation Should Start with Strategy

As stated above, getting devices for students only lays down the infrastructure that requires curriculum for implementation. It can be tempting to make this the first step, but that can be a rash decision. Before distributing devices, a district's first focus should be on developing a strong digital curriculum strategy. But what exactly does that mean?

A good digital curriculum strategy starts by organizing all of the pieces available, and there are quite a few in play for school districts. These include:

- Portals
- Devices
- Networks
- Professional Development
- Apps
- Office Suites
- Collaboration tools such as video conferencing
- Paid Subscription Services
- Free Subscription Services
- Digital/Digitized Elements (such as documents, video, e-books, lesson plans)
- Resource services (such as plagiarism checkers, online chat staffing, special needs such as speech therapy distance educators, Youtube and more)

- Drivers (for printers and 3D Imaging)
- Learning Management Systems (LMS)
- Student Information Systems (SIS)
- Instructional Management Systems (IMS)
- Library Management Systems
- Talent Management Systems
- Financial Management Systems
- Procurement Management Systems
- Device Management
- Technical Skills Software such as Adobe Illustrator, or AutoCAD
- Project based hybrids (such as software to run a robot or science instruments and calculators)
- Other tools such as clickers, polling, testing devices, whiteboards, portfolios

This list is added to on an almost continual basis as new publishers provide more digital curriculum and tool choices or refine the systems that deliver them. A strategy needs to account for these pieces and figure out how they're going to be used within the new system.

Taking Budget into Account

Part of any strategy is figuring out the budget. Superintendents often say that they don't have the money for digital implementation. While this is a valid concern at first, the more that a curriculum becomes digital, the less need there is for the purchase of textbooks. Eventually, digital curriculum will replace textbooks all together, and free up more than enough budget to pay for itself.

Keeping this in mind, a district should consider how much they have to spend on the transition, since this will partially determine the speed of implementation. Districts with extremely tight budgets may need to draw out implementation, while districts with slightly more of a technology budget can fully transition to digital curriculum at a much greater speed. Regardless of district's budget, it's important to begin the process, even if it's at a slow pace.

Tactics vs. Strategy

During planning, it's important to understand the difference between tactics and strategy. A tactic is an individual action that is taken in the implementation of a larger strategy. An example is the distribution of iPads to all students. This is a tactic, and a perfectly good one as long as there is a strategy backing it up.

A good strategy will provide the oversight and direction to use those iPads to change the students' approach to education.

And that is one of the strengths of a strategy. When digital innovations were previously offered to students, like a computer in the classroom, the decision of how to use it was often made on a teacher level, such as what programs might be on it. Fully implementing digital curriculum is simply too large of an issue to be decided on a classroom by classroom basis exclusively. In order to be effective, a strategy will lay out how every part of the curriculum goes together. Take the straightforward task of taking notes. There are a large number of note-taking apps out there. Deciding on a single note-taking app that students will use through multiple grades means they don't have to learn a new app with every new grade level.

What's interesting is that many school districts are already set up to accommodate this oversight. School boards were originally created so there would be a vetting and oversight process for the materials used in curriculums. That same process should be applied to new digital curriculum materials. Rather than simply letting students use any app, or letting teachers select the apps that they like, a good strategy can ensure that every app available fits the overall strategy.

## Building the Digital Curriculum Transition Architecture

School districts usually already have resources available to help in formulating a digital

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Presentation Layer:
How will students, teachers, parents and administrators access content? Portals and App Gates.

Campus Management Systems:
- Administrative tools such as:
- Learning Management Systems for housing content, quizzes, homework assignments, and facilitating communication and collaboration. May house individual learning plans (or these may be in another system.)
- Student Information Systems for enrollment, grading, assessment data, student attendance calendars, other data reporting (District and State), and longitudinal behavior and achievement data.
- Instructional Management Systems for housing teacher created materials, lesson plans, and resources.
- Assessment Systems.
- Talent Management and Human Resources Systems for tracking professional development, training and staff assets.
- Library Management Systems.
- Procurement Management Systems
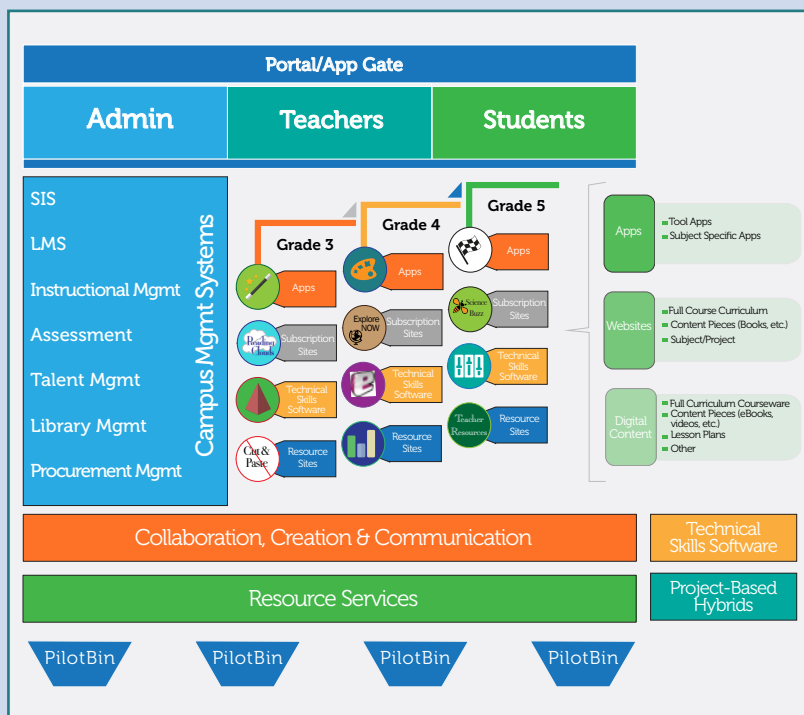
Collaboration, Creation & Communication: Video conferencing systems, social media, Office365 or Google Apps for Education.

Curriculum & Content: Apps, subscription sites, other resources including textbooks, etc.

Technical Skills Software: Professional software such as Adobe Illustrator, AutoCad, Robotics Software, etc.

Resource Sites & Services: Sites acting as directories, YouTube, plagiarism checkers, Whiteboard lesson sites, lesson plan sites, etc

Project-Based Hybrids: Robotics software, lab probeware, calculator and other mathematics or physics software, science and art software.

curriculum transition architecture, especially in the area of personnel. These are a great asset and should be brought together early in the process. For example, normally the Chief Information/Technology Officer will function independently of the Curriculum Specialists. In a digital curriculum strategy, both of them should work hand in hand to construct the digital curriculum architecture.

To help provide a starting point, the Learning Counsel has put together a model digital curriculum architecture. Data used to construct the architecture was gathered from interviews with hundreds of education leaders and publishers, as well as discussion meetings in nineteen cities across the country. This is a basic, symbolic architecture that can be adapted to fit the unique requirements of each school district.

The architecture provides a graphical representation for the organization of a digital curriculum structure. A portal at the top controls access to the system as a whole, and users are typically directed to three different access points or levels to differentiate for administrators, teachers, and students. Administrators are given the capability to oversee the individual pieces and larger systems of the curriculum, while teachers and students, including parents, have access relative to their roles.

Tying all of that together is how the pieces communicate with each other, such as integration between apps or inter-school cloud computing. Additional resources and services are available as needed, such as plagiarism checkers, directories, or white board apps for lesson planning.

Pilot programs, shown at the bottom of the architecture, are key. Digital curriculum is a constantly expanding field with constantly changing assets. Pilot programs allow a school district to explore additional options in a safe environment and further refine their system as they progress.

No School District is on Their Own

The articles that follow in this Special Report include stories from education leaders who have worked hard to implement digital curriculum in their districts or states. The solutions they used to overcome their struggles can help districts new to the process take charge of their own transition.

The goal of digital curriculum implementation is to bring all school districts into the modern digital age and revolutionize the field of education. It's a large undertaking, but the rewards are well worth the effort. And the best way to arrive at that goal is for school districts to collaborate, innovate and thus progress.

Top 5 To-Do

1) Assess current policies – what restrictions are there and what freedoms do you have?

2) Take an inventory of what your district, your schools and your individual teachers each have for digital content resources or curriculum assets.

3) Have teachers make a rough subject list of what they teach and against it the preferred pedagogy. Compare and contrast that pedagogy against the choices for digital materials. The teacher can chose to use simply augmentative materials to help engage students, just documents or simple apps or videos. At an intermediary sophistication level, the teacher could also chose simple substitutes for past textbooks from "chunked" texts purchased from publishers or obtained from open resources and build lesson plans around those. At the most sophisticated commercially-available level of software, the teacher could go with new "immersive-environment-adaptive digital courseware," full of functionality including animations, gaming rewards, complete libraries and intelligent learning engines that fit the units to the individual student and allow the teacher uber levels of personalization and analytics.

4) Have a plan for transition by subject, by grade, by teacher – and don't bite off way more than you can chew in the first year.

5) Have a plan for professional development. (We suggest also looking at online PD subscription resources like RedBird Learning.)

Contact the Learning Counsel to learn about using a full administrative scale to set goals, write policies and actually execute wisely and in a timely manner all of the above and your own custom strategy.