

# SPECIAL REPORT

# APPTASTIC!



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The State of Ed-Tech

Designed for Digital Workflow

On the Road to Apptastic

# Superintendents of Software ...and also, Teachers & Buildings

The ideas in this report are different than any other ideas you will see across the education landscape. The reason they are is because we did not look in the existing structure and processes of education only. We looked from the outside, from a greater tech reality in other industries that has clearly revolutionized everything from organization to function and results. Those changes have accumulated to sharply altered lifestyle, culture, and an entirely modernized economy. You know the ones: FedEx, Amazon, Uber, Google, Facebook. Retail has moved unilaterally in what some call the “retail apocalypse” away from physical stores, modern shipping logistics now provides some items within hours on doorsteps, a dramatic shift in media and entertainment to mobile and on-demand, ride-sharing by anyone with any vehicle, storefront banking disappearing, tele-medicine and more. What’s behind all of those things is a fantastic depth to technology systems.

What’s driving them is a collective human longing for quality of life through time and distance efficiencies being met by mobile and online technologies. Schools, meanwhile, are still structurally and schedule-wise largely the same despite the pile-on of technology into the classroom. Administrations are locked into an organizational structure and expectation of schedules, testing requirements, buildings and ringing bells, and primarily utilizing teachers as the center-pin of delivery.

Meanwhile, millennial parents and their children are users of search engines online and get immediate answers through voice-command from devices sitting on the kitchen table. Youngsters have typically already learned the entirety of the usual kindergarten curriculum before they ever arrive in school using Apps parents have found to teach the alphabet, numbers and reading through games. With an ingrained search-and-shop mentality, they see the district web site as one of the local sources and the default free one, alongside other options including fully online and private schools. They also see

invitations to learning Apps, some offered with all subjects for all grades. They are increasingly attracted away to alternatives that provide flexibility, safety, and a somewhat personalized path of achievement.

We are at a moment of divergence, often misidentified as either online or classroom blended-with-tech learning. It’s not that black and white anymore. It may not even be the alternative school that is sought. An alternative function and organization of learning, an admixture of digital-first personalized learning alongside real-life experiential learning – without extremely strict adherence to schedules – is more likely to satisfy society. The idea to attain this is that schools reverse engineer education from the tech side backwards, blending the whole organization of learning into the present age. But how to do it? Most schools are changing in stages, and there are a lot of details.

If you are an administrator in any school, the way to start thinking is that you are the leader of a digital-first entity now and your physical environment and human staff remain important parts of that service. When your site and software carry the bulk of the delivery load of learning as in other industries, schools can naturally leverage people and places to greater effect and lower cost.

To transform and become educationally “apptastic,” the only cost that matters is the cost of changing viewpoints.



LeiLani Cauthen  
CEO & Publisher



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Research and Context on the Digital Education Experience

Through consulting services and research, to events, custom publishing and online editorial, the Learning Counsel provides dynamic and diverse opportunities for private and public sector leaders to collaborate for positive change.

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The Learning Counsel helps our subscribing 215,000+ education professionals in the K12 and Higher Ed sector gain context on the shift to digital curriculum. Our mission is to help districts and schools reach real transformation through strategies for digital content and curriculum.

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# Goal:

## Learning Equity through Personalization

A national awareness that there are entrenched financial inequities fuels continued talk of inequity, but there is another inequity that schools and districts can address directly – with technology.

Technology has the innate ability to provide individually responsive interaction at scale. Bringing this to bear universally for students *directly* is the province of adaptive digital curriculum software and a lot of the management systems that put frameworks around individual files. Since software can address students directly, they also address the issue of teacher bottlenecks known as allocative inefficiency. Allocative inefficiency in education means some teachers who are allocated to do all the work in a classroom are capable while others are not in one or more subjects or methods. They just can't get to every individual learning need. It also means that an institution may be inefficiently allocating teachers for their unique abilities for any one student or set. Simply, teachers are people and they vary wildly yet are typically a "constant" in many schools, preassigned for location, grade and subject. Students, too, are wildly variant and are generalized into a "constant" by age or grade level. When students are fairly homogenous in ability, willingness and culture, there is



"Our efficient lecture, in which all well-prepared and equally well-served by a uniform delivery method, becomes ever more poorly suited to reach our students (when they come from different levels of understanding)...we need the instruction for these students to be individually responsive, not broadly scalable."

– Gavin La Rose  
University of Michigan

usually great learning production efficiency. When there is no homogeneity and additional factors enter in to disrupt old ideals of normalcy such as neighborhoods with a lot of single mothers or students who attend from multiple foreign language homes, there is typically production inefficiency and inequity. The rising tide of these endemic inequities demand additional resources, a responsiveness that schools cannot typically fund. If they do fund some of them, an imbalance occurs in other areas, perhaps for the smarter students who need more advanced work. Administrators feel that the more they try to manage the lack of homogeneity, the less they accomplish overall because there is always some need unmet.

On a micro-scale within the classroom, this same disparity plays out daily all across world. Some students stick with the whole-group lesson, others fall behind. Teachers “catch up” with direct instruction those students they can, but they are frequently in triage mode – making decisions on-the-fly as to which students are worth their limited time. Teacher decisions are inevitably focused on what overall test scores will look like, and those students who are just not going to make it are regrettably left behind.

Dartmouth authors Amitabh Chandra and Douglas Staiger wrote a paper in 2016 entitled “Value-added Models: New Methods and Applications: Sources of Inefficiency in Healthcare and Education,” complete with an algorithm on how to overcome the inherent inefficiencies in both sectors because they are the most human-intensive of all industries. They summarized that, “while research in education has focused on value-added models of teachers and schools, there is still work to be done on understanding what to make of variation in the use of inputs.” This means that their mathematically-derived conclusion of how to fix learning rests on the demand side (input), one of which is what the student needs, as in 1) which school, 2) which teacher, 3) which lesson, 4) when, and probably 5) how (lecture, reading, video, courseware, project.) All of these are deliverable by technology, differing only in the structure of how

## Being Apptastic

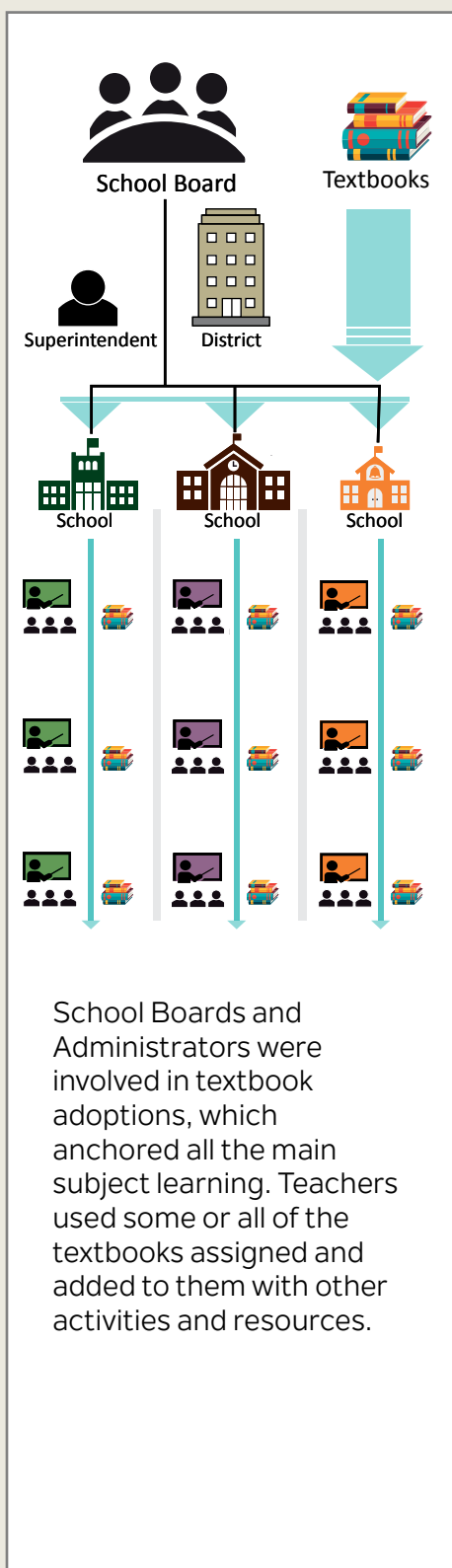
Being educationally fantastic applying tech; having a great mix of software Apps, hardware and training.

When an education institution is Apptastic, individual students benefit from truly personalized and highly variable pathways that intersect with teachers and fellow students for quality interactions.

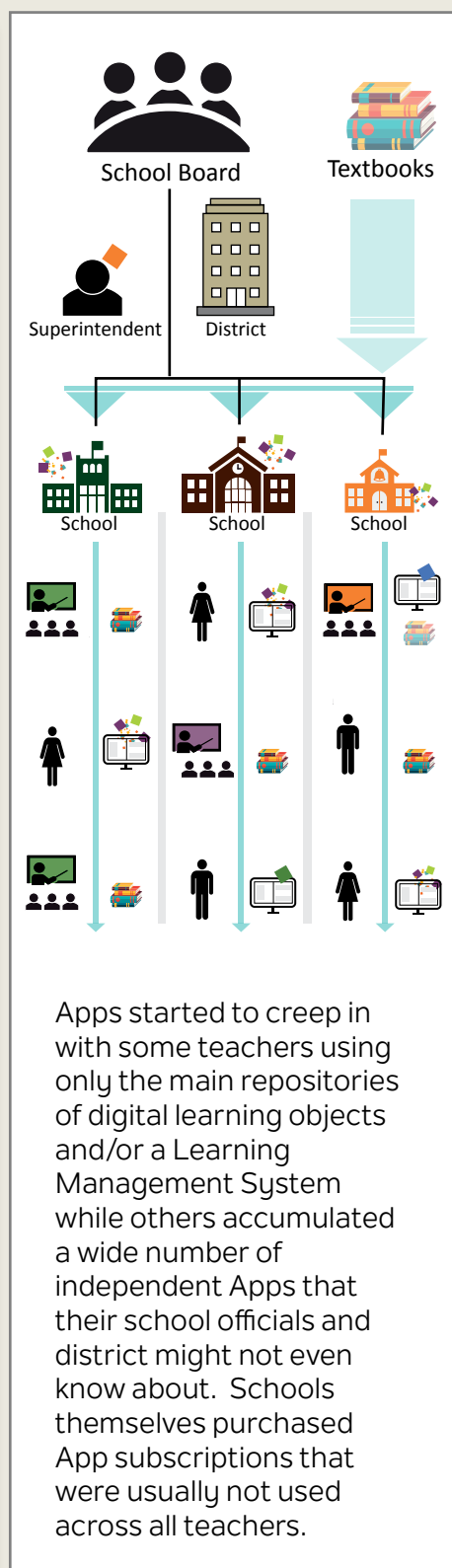
it is organized on the other side: the supply-side of teachers and institution. The intersection with live humans and guidance is re-orchestrated.

To put this in perspective, if you can select which day, which time, which flight to take and pick out your exact seat when booking a flight; if you can order one of dozens of nearby Uber drivers to arrive from an App on your phone within minutes to drive you somewhere; if you can download a book or watch a video teaching you something at any time; if you can order a painting that will ship to you all the way from China automatically on Amazon and then visit a page to see it's shipping progress at every stage; then personalization is possible in schools with tech.

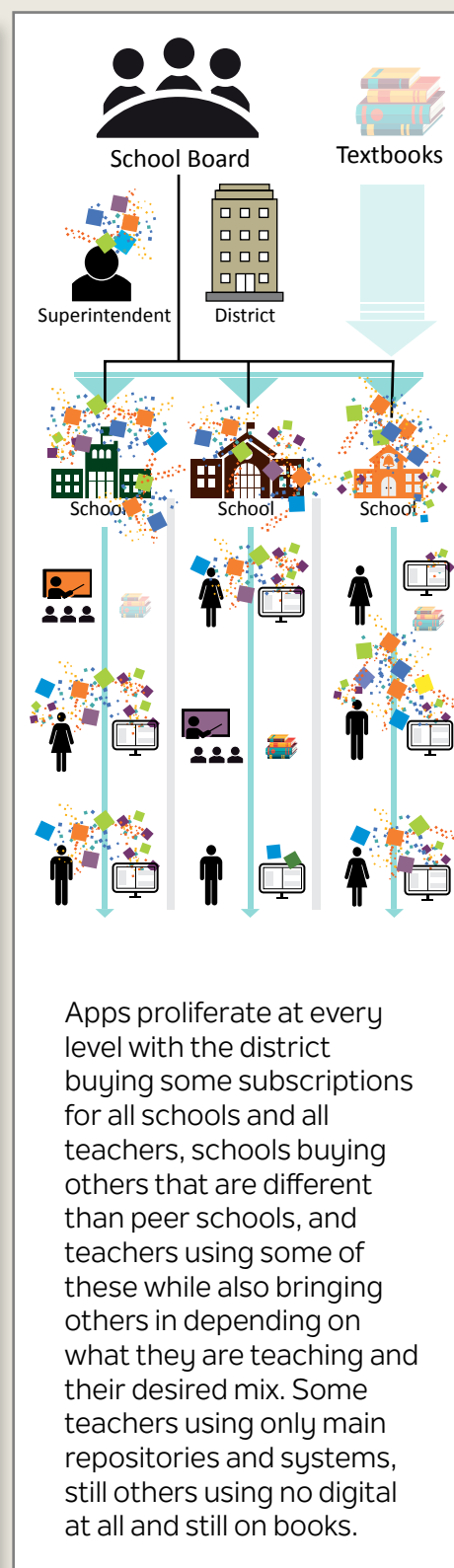
## The Old Days / School Structure



## Initial Tech Transition/ School Structure

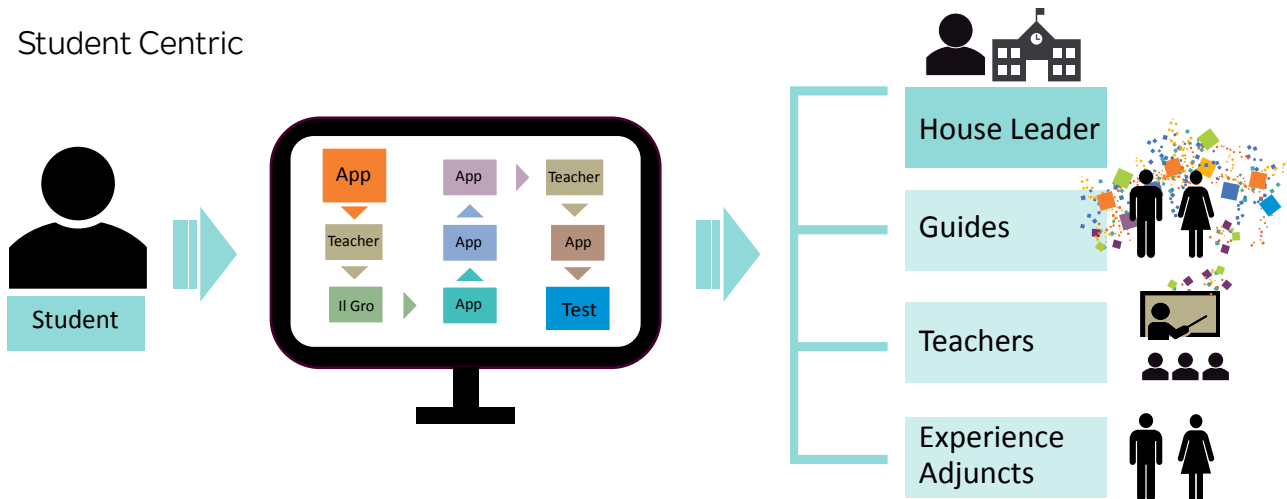


## Advanced Tech Transition/ School Structure

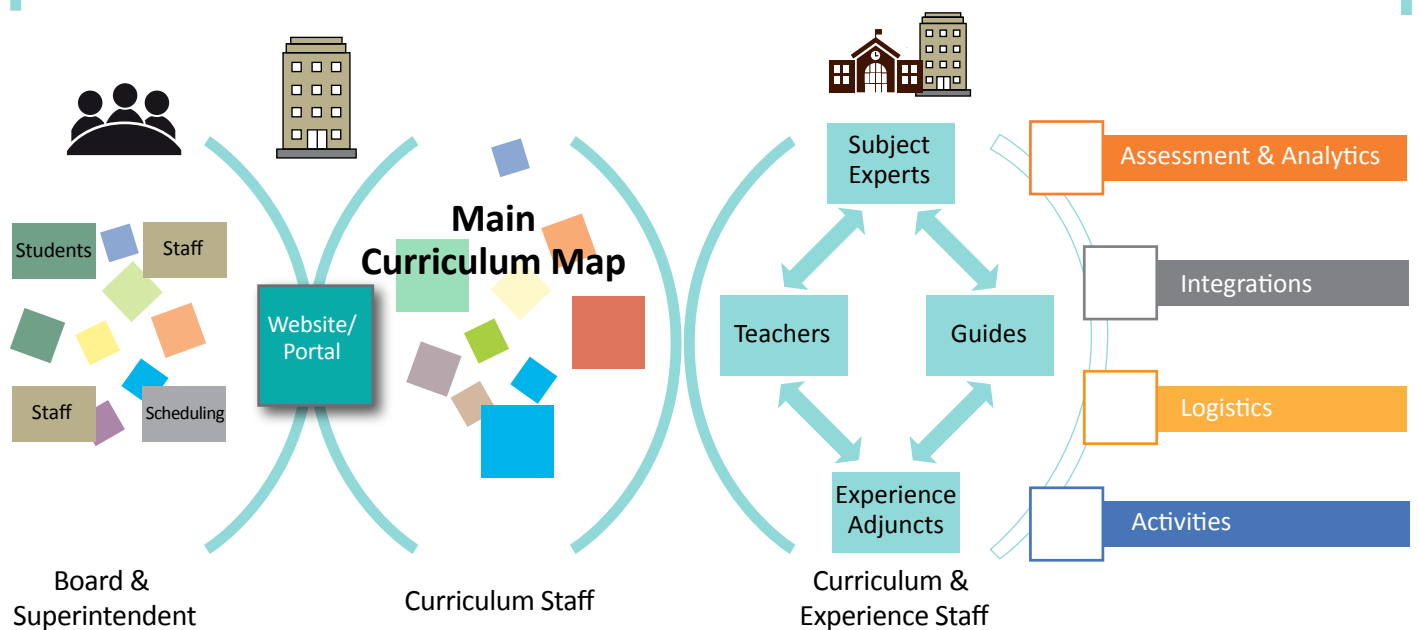


## Full Digital Transition/ New School Structure

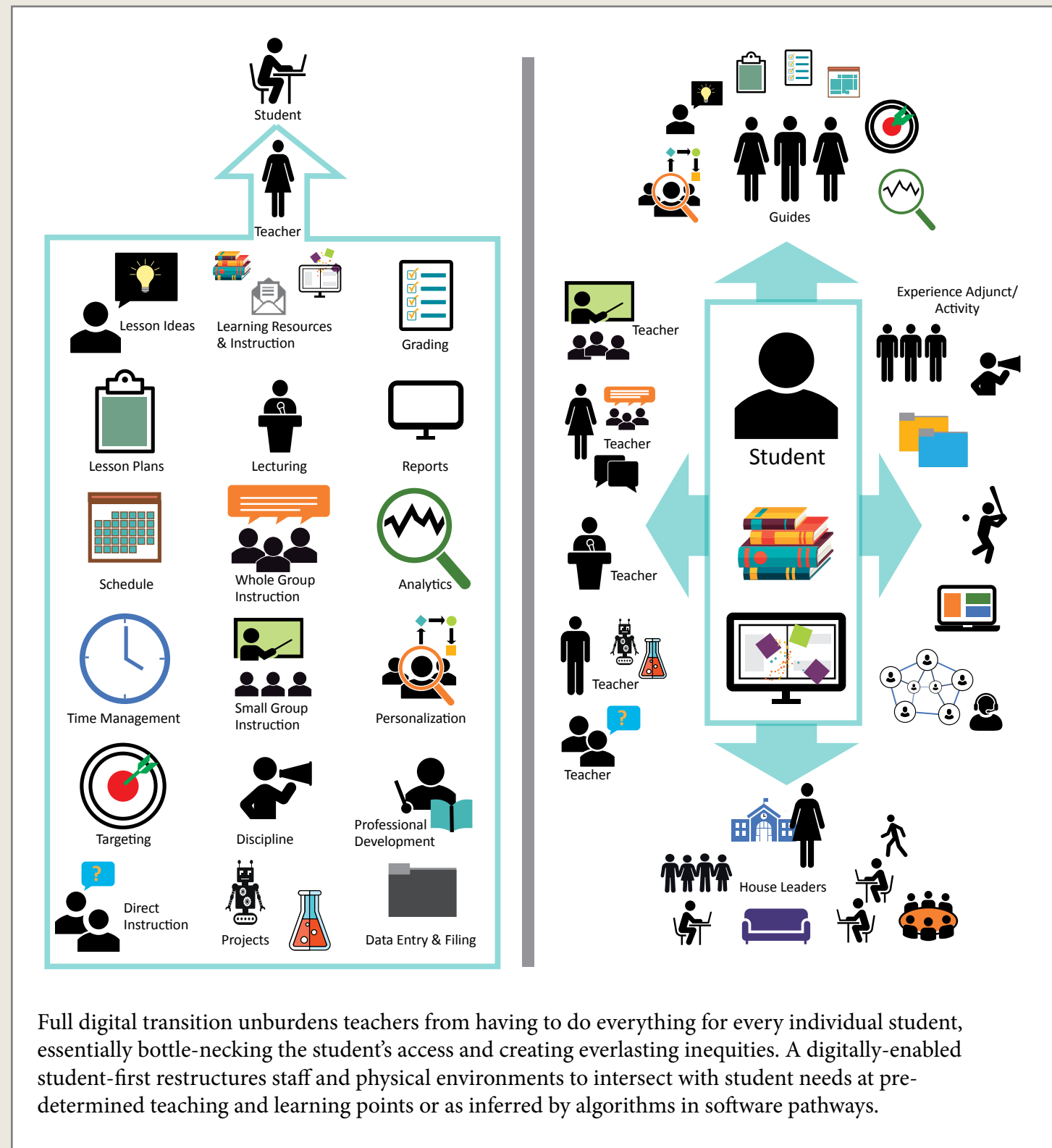
### Student Centric



### Reorganized District and School Services



Administrators realize that they have lost control of the continuity of their operations in curriculum and start to reorganize around what Apps, and for what uses. This leads to realizing App access can be fully personalized and a restructuring of staff and physical environment can happen.



Full digital transition unburdens teachers from having to do everything for every individual student, essentially bottle-necking the student's access and creating everlasting inequities. A digitally-enabled student-first restructures staff and physical environments to intersect with student needs at pre-determined teaching and learning points or as inferred by algorithms in software pathways.





# The Troubling App Tribbles

Schools and districts have rounded the corner into realizing their habit of procuring technology are like Star Trek's famous "The Trouble with Tribbles" episode. Little fuzzy aliens got onto the spaceship and kept procreating until their cute little round forms were everywhere. Apps in schools have similarly overly propagated into every nook and cranny. Stories abound of opening closets in some schools to find them packed with never-used iPads, and dusty interactive whiteboards. The average teacher typically has 50-75 log-ins, which is only now finally being resolved with single-sign-on systems in the schools.

Schools start out using a few Apps, maybe just a student information system (SIS) and an Office Suite from Microsoft or Google. This allows teachers to substitute some things for digital documents and functions. Later some teachers augment with some Apps and even some courseware while at the same time both district-level buyers and principals weigh in with some purchases and licenses for all. Still later teachers and schools modify by largely walking away from the use of textbooks and paper and go fully digital. It is at this stage that the proliferation of tech makes it apparent that there is a lot to integrate, a lot of incoming data



to analyze, and a lot to change in teaching behavior and student agency. Screen learning can do a lot of the heavy lifting, but teachers remain the centerpin and do not or will not use full digital courseware for fear it could “take over the teaching.” They side with parents who’ve been convinced that “too much screen time” is bad.

Yet all online and only screen learning doesn’t make sense for a large number of students. Schools generally operate within the confines of their existing human structure, depending on teachers to use perhaps a small amount of digital courseware while doing a lot of other lesson planning that is digital discrete content or documents, plus adapt all of that to each individual, do the analytics for each student, as well as all the data entry reporting up to the top brass. While many teachers do an excellent job, the learning for the students is still in manufacturing-mode. It hasn’t been redefined to be fully personalized as long as it remains in the same structure.

A redefinition of how it could be organized becomes visible once administrators really understand high-end digital courseware and start to imagine the untethering of individual students and teachers from the way groupings and classrooms have always been done.

## Being Apptastic – Main Concerns

Schools and districts have been in software acquisition mode for a couple of years, and the average district now has thousands of Apps. Schools just starting on their digital transition can learn from those who have gone before. The possibility for *organizational* change and not just change-in-the-classroom, is the focus of this report. There are several areas of concern for curriculum and technology directors:

### 1) Concern for the End-Game

The end-game of moving to digital curriculum is truly personalized pathways for students and highly experientially-focused in-school work alongside screen learning. This is not the same as tweaking lessons slightly while maintaining whole-group patterns. All signs both inside the education market with leader discussions, and outside demonstrations of how tech enables true personalization in other industries, points to personalized learning as the true end-game.

It’s important to note that this idea is a sharp turn from other personalization ideas pervasive currently in education, which are largely threaded through existing whole group design of classes. Reorganizing for personalized pathways is what leaders are drawn to as a way to keep schools relevant against the rising tide of attrition and the threat of disintermediation from online digital curriculum or alternative schools. Yet, while educators might think personalization within their context is akin to some special address like Individual Education Plans (IEPs), regular people would define personalization as guidance on materials with one-on-one instruction, just for them, independently of other students. This is the same attitude people have with retailers like Mathnasium who is selling personalized student math achievement in every major city and growing their operation at a phenomenal rate. It’s also how “recommendations engines” automatically match you with people or products of like-interest in dating and shopping sites. Personalized means what it means, not a slightly altered plot of classes. There is no way to understand how deep the true personalization well goes until you experience the very best adaptive digital

curriculum which is teaching levels of knowledge just like a video game has levels. Many of these software programs are built with alerts for helping teachers identify important teachable moments and more.

While most schools struggle to see how this could be done clearly, many software pieces already exist so what remains is the collecting, integration, branding and redesign of school operations and personnel duties.

The struggle to attain real personalization will initially be several degrees of sophistication higher through applying concepts in this report. What's possible in the future is that augmented intelligence will increase the numbers of divergent question-answer paths for learning, with auto-grading, and execute through screen interactions in compressed time. Such innovation easily interests parents versus teacher ratios of 1-to-30 students and stretched-out time, which is why it is imperative for schools to co-opt it and retrain teachers to provide their value as humans with direct instruction to students in a wide range of disparate learning sequences. Systems could also add subjects through recommendations, overseen by teacher-analysts, and auto-predict other needed direct instruction. The whole job of teaching could be a series of very specific meetings 1-on-1 with students who need help, managing incoming alerts and grading notifications, helping stage collaborative student sessions, and providing the humanity.

Since technology can do all these things, and it already is within consumer learning products, the time is now to think about a survival end-game positioning for schools that uses human teachers for what they will always be best at: being human. Currently the majority of parents still want this, and probably always will.



## 2) Understand the Lay of the Land

If you are unfamiliar with the full breadth of offerings, the first thing to know is that there are literally millions of digital learning “things” out on the Internet, listed later in this Report by categories. The pedestrian view of all of this is one of fascination with a discrete function.

Time4Learning is one of hundreds of companies marketing direct to consumers with animated and fully-formed curriculum modules covering all needed subjects. Parents buy subscriptions, just like schools buy subscriptions from other professional publishers and have probably never heard of Time4Learning or many of the consumer-focused brands. Thousands of other software publishers offer things like career and elective courses, certain sets of grades for math that are fully automated and animated, or just quizzes, or just worksheets, or ebooks with a framework around them for reading levels and more.





Source: Time4Learning

The mobile APP stores carry thousands of various “learning” designated APPs, some mere “Applets” with single function or single topic orientation. Major publishers also have large numbers of offerings, from collections of discrete learning objects like documents and videos all the way up to services for fully online schools.

There are also many discrete administrative functions being offered to schools with software for specialized learning interventions, email monitoring for signs of student emotional issues that may call for action, integrations between types of software, storage for all the types of things (repositories), and much more.

### 3) Concern for Inventory

Most schools and districts have at least one central list of hardware and curriculum inventory. The problem with software inventory is that it is an extremely dynamic field. Software companies are doing never-ending updates, new items and modules show up constantly in the market, links break and lessons have to be redone, old items that were so exciting initially turn out to have less utility than thought, and then there is the redundancy of items and lack of fidelity of implementation.

The act of taking a manual inventory should include what is in use for hardware and software. Software inventory is harder to do, and typically schools have no idea what all is in use. A valid inventory for purposes of planning needs towards personalizing curriculum has to be very detailed. Besides a general type of software, the character of it is important: whether core or supplemental, the enhancements within it including security, what platform it runs on, what file type it is, whether it is integration standard compliant, what academic standards it meets, what the pricing model is, and what amount of lesson time it uses. All these are important tags to systems or discrete software objects so that the act of personalizing is easier to automate.

The Knowstory social media site is one that offers a new answer for dynamic inventory where all levels from administrators to teachers and students make records of what they are using, and the site aggregates all the individual libraries into one group. Every change can be monitored, and administrators can distribute and track numbers of licenses. Other programs exist for inventory entry, but without the feature of combining dynamically all potential sources of any software inventory at the district, school or teacher levels to keep up with frequent changes.

### 4) Tribbles, Standards & Triage

There are several types of standards in the grand game of education – academic, technical and others. (There is a whole chapter about this in the book, *The*



*Consumerization of Learning*.) Speaking first about the academic standards like Common Core, these little code-like commands are numerous and continuing to further fracture with various states doing their own. This puts a heavy burden on software companies building any kind of content. Conversely, a school trying to build all of their own digital content typically lacks the expertise of true digital learning design (which is different than plain instructional design), so their content gets trapped in the mostly document-or-graphic image-or-video dimension. Academic standards by schools are also mostly treated individually because it's the "fastest" way for teachers to address them. They don't have the time to gather a large design team who cross-walks all the standards and all the paper-based and digital learning objects into a subject, topic, and utility matrix with the most efficient learning paths plus variable routes for fast or slow learners. That takes a lot of money and time. Professional courseware does this automatically but may not provide contingency paths outside of grade levels to allow for true personalized paths. That's where ensuring a good amount of pre-vetted discrete modules of content remains in repositories for at-will mix-and-match for personalization.

Tech standards are another level of the discussion and have now gone beyond the transmission and file structure issues that are not unique to education into integration issues that definitely *are* education's problem. There are two levels: the first is integration so that data can be shared with other institutions and systems via export and report, and second the data fields themselves and file structure. The first is the real trouble with the tribbles in education in terms of the proliferation of integration complexity. Tribbles are respectfully characterized here as the Apps that provide great universal utility (Microsoft Office 365 or Google Docs), framework systems of all kinds, *and* the ones that provide very discrete function (calculator and letter-number types of Apps and others), which are numerous. However, they *need* to continue to multiply until we get to a very high level of software sophistication. This is because schools lament that they need a "full coverage model" with easy click-and-drop clarity for digital curriculum mapping. There aren't even auto-recommendations engines for all of it yet. Plus, we all know learning content will never be "done" because the goal-posts will constantly move.

Triaging what has good utility is not easy. One school district executive who attended the recent Learning Counsel events in San Jose Digital Transition Discussion event said they have "3,200 Apps and only 600 students." That's the new reality. There are quite a few other major districts with thousands of Apps, including Houston ISD who on last report had over two million digital resources. How great, you might say. Yes, but *disruptive* unless carefully curated for real-time use. In some instances, leaders cannot tell if a student is failing because of the teacher, the App or the mix because no one is using the same things. They have no data trail emerging on much of it, so testing is increasing, so teachers and students are further frustrated, so alternatives are emerging, so... see what's happening here? Whenever there is change, the first thing to appear in a group is a confusion of emotions and operations which in this case comes from untold numbers of Apps. Leaders bring order to this actively to get the organization through to a new and higher sense of order. Hopefully towards the real promise of tech which is truly personalized learning. ■





## Design Basic: Workflow

The Learning Counsel has been studying several types of systems to learn the probable directions of future teaching and learning orchestration. A main driver has been the increasing rates of failure for the existing structure and for students. Just looking within schools for a “why” of failure, is insufficient. There are just too many students being failed and too many schools trying and not succeeding wholly, exhausting teachers, and still waking up to increasing attrition.

Failing models include traditional physical schooling, fully online learning when it is merely distance-oriented like a correspondence course, a virtual school with no physical collaboration and activities, and the new blended classroom which generally changes nothing about teacher workload and misses on real personalization. All of these have failures and leave students behind. The Learning Counsel believes this is because there is one pillar still left standing in all of these models: teacher centrality rather than student centrality and personalization. All the models and all

the framework software is built to do something *to you* as a student by teachers or software.

Teachers are, in fact, unbelievably essential for some students at precise points in their learning, and wholly unnecessary at other points or there would never be free reading and homework. Schools pay for them to be one hundred percent of the delivery mechanism, point of analysis and personalization, and to carry the full weight of all decision making, activity or orchestration, and still in many ways be the unquestionable source of the subject knowledge.

Analysts, stagers-of-projects, data-entry clerks and other functions have all been added to the traditional teaching role. Essentially these together add up to an inefficient bottleneck.

Outside reorganized systems show promise as examples of function to consider, especially since uniquely applied technology has upended those whole industries. Systems reviewed included:

- Retail ecommerce systems (Amazon)
- Shipping systems (FedEx & UPS)
- Airline reservations systems (SABRE, which stands for Semi-Automated Business Research Environment)

- Social media systems for auto-notifications and messaging (Facebook and others)
- Algorithms for judging, filtering, penalizing, and rewarding content search, data collection algorithms, context algorithms (Google), ask-specific algorithms, organizing algorithms (Uber, AirBnb and modern courseware)
- Website “seasoning” or search engine optimization and marketing (Marketo)
- Identity provisioning systems (Okta)
- Supply chain management (Oracle)
- Workflow management (Canon, Microsoft Sharepoint-Workflow)
- Chatbots and Live Chat (ZenDesk)
- Inventory and Supply Chain Management (Zoho)
- Middleware, education-specific integration scrimmage between applications (Randa Solutions)
- Crowdfunding (GoFundMe)
- Digital democracy (VocalEyes)

All of these technology areas have functions that our research indicates will be necessary to the future of teaching and learning, particularly personalizing learning.

## Definition of Workflow

- **Merriam-Webster defines Workflow** as the sequence of steps involved in moving from the beginning to the end of a working process.
- **ProjectManager.com defines Workflow** as the definition, execution and automation of business processes: where tasks, information and documents are passed from one person to another for action according to a set of procedural rules. It involves work by one or more people, and transforms materials, information or services.
- **Learning Counsel defines it in advanced learning environments** as the transportation messaging like an independent digital agent between disparate systems and learning objects for tasks and information routing and completion; independent sequencing for personalized learning, grading and compliance approvals; usually using structured forms known as checksheets, coursesheets, worksheets and routing forms, some of which may depend on manual or automated answer keys and automatic calendaring.



A base repository gives the working ingredients for full personalization. Full pre-built courseware helps teachers contextualize and do some personalization, but this work is still predominately on teachers and not directly distributed to students.

When considered against the array of existing technologies in education, the one to start with is workflow to re-order and automate more learning, quickly followed by identity management (provisioning) since the detail work of personalizing learning is going to complexify rostering. Workflow for individual pathways is evident in both the shipping and airline industries which use a form from transaction inception point with routing through various hubs (like schools or grades) and planes/trucks (like mobile classrooms as an analogy). Online retail cataloging with follow-on scheduling for shipping presents consumer options which are already echoed in major digital collections websites of books and learning objects for education, but schools themselves have yet to really harness this user experience for individual students. Some virtual schools have more advanced systems, but most are still built for a linear path of content with some distance teacher interaction. They are not necessarily built for tangential side-journeys or remediation trigger points to automatically loop in teachers.

Most schools have Student Information Systems (SIS) which hold rosters, grades and schedules. Like Learning Management Systems (LMS) an SIS is a framework system sold to schools or districts as an Internet walled garden or individual account instance. An LMS adds many features for teachers to build and automate lessons, but this added work on them doesn't really get to the ideal level of personalization. An LMS, or a learning object repository (a "LOR" or data warehouse like Safari Montage), are necessary for the construction of a robust offering by schools because courseware and digital content collections from outside publishers are not collated into individual pathways and need a lot of human distribution effort around them for students. A base repository gives the working ingredients for full personalization. Full pre-built courseware helps teachers contextualize and do some personalization, but this work is still predominately on teachers and not directly distributed to students.

### Curriculum Planning

How do schools "do" curriculum planning right now? Roughly, they have these ingredients as their starting points:

1. Annual schedule, divided by holidays, testing dates, length of school day
2. Subjects and academic standards in master curriculum frameworks
3. Teachers do lesson plans against the frameworks
4. Other existing curriculum resources, paper and digital

The academic frameworks are rough guidance and timing for all required subjects. These are largely the main areas of math, language, science, and social studies which mutate over time to match teaching trends and new academic requirements set by some level of government. Some subject areas have some detail with courses laid out step by step by top-level planners doing the frameworks. This used to be fairly simple with textbooks and workbooks which served as the scope and sequence baseline. Teachers could pace students through each grade-normalized sequence and add to that with video, projects, and lectures.

The general frameworks are handed off to teachers for all the details of execution, including instructions for any specific special learning needs. Individual topics of any



subject are planned into class-time for a whole group, with minor individualization for a few students. The workflow is for general subjects scoped by general age groups. Again, this is the current design of nearly all software systems.

A new design basic uses an individual workflow by learner for curriculum planning. The design reason for this is the fact that schools use many different types of software, some repository-like, others full-formed courseware, alongside various narrow-subject apps and office suites. Since collating these into any sort of coherency requires teachers, without workflow that weaves between all of them, a bottleneck remains. While workflow as will be later described is not a totally new concept in practice, the addition of digital enhancements and algorithms makes a significant difference in scaling it to provide a myriad of divergent paths. A school would need to detail learning plans down into individual workflow forms of what items to read and do and how much time each should take on average instead of general plans that are detailed by teacher daily lesson plans as before. This shifts the burden of planning to a central administration, away from teachers. While there would be resistance to this by many teachers, the trade-off is a refined leverage of their human skills. It is also not so different than the age of textbooks since those were selected by a central authority, namely school boards.

## Old versus New Forms

There are many terms in the landscape of K-12 education about forms, but digital forms are here being discussed as also having more function. The term “checksheet” typically refers to forms showing an education plan with all courses needed, requirements and credit hours in colleges and has an equivalent structure to a “personalized learning plan” or “individual education plan (IEP)” in K-12. Essentially these are dictating a structure and character to learning workflows. Most administrators associate an IEP with a special need being met with adaptations to the existing courses such as a hearing loss or learning difficulty.

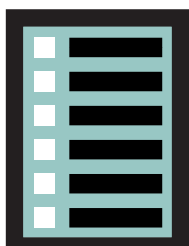
Courses in higher education as well as K-12 may have a hand-out at the beginning called a syllabus, which essentially broadly introduces the content to be covered, goals, and elements plus a schedule. It’s not exactly workflow oriented. Another type of form is a worksheet, which is more synonymous in K-12 schools and with hand-outs for student work on a single objective.

If you make the mental shift to personalized workflow, you see the holes in how workflow is done. There could be workflow inside a Learning Management System or inside an office suite, but not necessarily between all the types of things such as separate subscription courseware, an ebook on yet another site, a video somewhere else. This leaves all the machinations of daily schedule grounded in whole group process directed by teachers, unable to move to fully personalized paths. Another way to see the workflows needed is a tiered structure with one wildcard – the routing form. Here’s how they could be defined and what they mean as agents of the motion towards achievement as they live between all the other software things on the landscape.

### Starting Points – Curriculum Planning

- 1 Annual Schedule, divided by holidays, testing dates, length of school day
- 2 Subjects and academic standards in master curriculum frameworks
- 3 Administrators and Guides build a tiered structure of lessons against the frameworks allowing for personalized pathways using a mix of screen, project-based and whole or small group.
- 4 Other curriculum resources, paper and digital, are used for additional personalization by Guides and Teachers.





## Checksheets

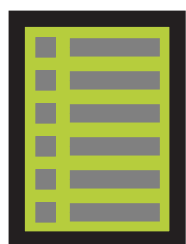
Grade/Competency-Level, by Subject,  
Listed in Sequence

### What Administration Does

- Lists academic standards and groups them with any other objectives by grade and/or competency level, by subject, into checksheets. Assigns the checksheets a symbolic value such as “Blue” for the level and the name of the subject, “Blue – Math”; sub-groupings later become coursesheets and are modularized into “Blue – Math 1” and so forth to be progressed through by students.
- Reviews courseware and other resources to use and plots those generally into the leveled checksheets by subject.
- Writes each checksheet level/subject an appealing and descriptive objective, referencing any pre-requisites.

### What the Student Does

- After onboarding a.k.a. joining the school online socially or registration, student’s select preferences and electives, plus pre-testing online, and gets assigned a master checksheet indicating which level by subject, including the first coursesheet for each. This version should also contain their own electives and personal objectives.



## Coursesheets

Courses, Modularized Subject Workflows (A sub-workflow to Checksheets)

### What Administration Does

- Checksheets broken into modules of any length and termed a “course,” with steps to complete in sequence.
- Purchases and/or makes and plots all reading, courseware segments, worksheets, student demonstrations required, quizzing and testing into appropriate sequences.
- Each coursesheet has an accompanying Answer Key for teachers with approximate times per each item on the course, unless automated inside courseware.
- Includes items on the list of the coursesheet of any needed lectures, projects or collaborative activity.

### What the Student Does

- Student receives multiple coursesheets for all subjects, electives, and an open one for filling out on any personal objectives.
- Student progresses on the individual coursesheets until complete, then is routed to the next subsequent coursesheet.
- Routing forms and calendar items are automated based on the coursesheets.
- Worksheets are sub-lessons or one-off assignments.

### House Leaders

- Manages locations, sources staffing including online special subject teachers, oversees one “house” of student members, schedules whole-group meetings as needed.
- Subject and Personalization Analysts
- Build out basic coursesheets with blank items for personalization. Works with teachers for scheduled lectures, technicians and para-professionals for lab and project staging, testing and data reporting.

### Teachers/Supervisors

- Manages subject area and has specific office hours for student help, rotates in for main House room oversight and separate classroom lectures or labs, physical class oversight, direct instruction as needed, assigns extra worksheets or resources as needed in coordination with analysts, unravels student problem, uses the Coursesheet Answer Keys to grant a grade or mark, partners students or teams for co-work or one student helping another or grading another using Answer Key.

### Technicians and Para-Professionals

- Stages labs, helps with online student questions, rotates into time slots for main House room oversight, data entry, helping teachers with projects.



### Answer Keys

The answers or parameters for student achievement matched to the course-sheets, in modules (some software does this automatically so no Key is needed)

#### What the Student Does

- Student may use the keys to self-grade some work, or in courseware is already receiving automated grading and remediation until they understand and pass.
- Some professional publishing companies have Answer Keys that are geared for peer grading by students ahead in the modules or at any point if the grading of that part does not require already understanding the material but just checking for understanding of information that is read in the answer part; as allowed by teachers or potentially automated in peer session online so that interaction and grade is captured and funneled to teachers and analysts.

#### Subject & Personalization Analysts

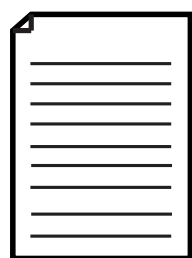
- Monitors answer keys whether digital document or within full courseware with analytics of whole groups.

#### Teachers/Supervisors

- Monitors answer keys whether digital document or within full courseware with analytics of whole groups and allows students forward to next modules.

#### Technicians & Para-Professionals

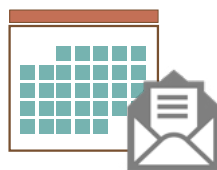
- Assists if online remote monitoring is needed, or class assistance while teachers do direct instruction to catch-up students in need.



### Worksheet

A Lesson

- A sub-part of a coursesheet, one lesson or assignment as needed. May be a practice drill for a dozen math problems or other fill-out form for students to complete.



### Routing Form/Calendar Item

A Wildcard Form for transporting a specific task or making an appointment.

- Workflow-oriented messaging vehicle carrying the next worksheet or link, coursesheet or checksheet, or authorization to next item.
- A completed item routed from student to teacher for checking or grading.
- A calendar item scheduling a teacher meeting, class lectures, labs, small-group projects or other learning activity.
- A hall pass, notification, or alert sent via typical messaging structures in social media, office suites, or within courseware and LMS's.

### Try a Pilot

It's advised to pilot one subject at a time and try to plan the workflow forms to include automated courseware that is already built with scope and sequence internally. That way the form has fewer total items to plan but should include hands-on work and human interactions where feasible rather than all screen learning. It's also advised that each one subject has alternate paths including remediation, but that sophistication can be built over time. Start with the whole-group teaching mentality and create one subject, one set of workflows. Then monitor progress as has been traditionally done, keeping an eye on what is needed for further sophistication.

Students do each item one at a time, checking them off and getting sign-off from teachers as needed as they progress. Youngest students could be kept together on one form or given adequate free learning time to do individual forms outside of group activities. The forms, which should be digital for easier management but could also be paper-based, include moments that need two students to work together, a whole class, or a teacher lecture. These moments are individual items on various forms that a teacher or the digital system monitors daily. The teacher or system schedules these meet-ups based on students close to or arriving at those points on the forms. Built into the subject forms are remedial practice and the ability to move on to more of the form or higher forms while meet-up intersection points are being scheduled if they cannot be done immediately. Major lectures, films, labs and field trips are annually pre-scheduled on an overarching grade-level form for simpler administration.

By piloting one subject area and only one grade or cohort, a school can reconfigure for personalized learning with work forms or lesson plans in modules, plus changed space and points of intersection with teachers.

This type of blended workflow allows students to progress with resources and assessments independently but intersect with teachers and other students who are learning at roughly the same pace prescribed in the forms. Subject leaders and teachers are thus leveraged to help those who need it the most, either slow or overly fast in pace. Curriculum planning of the lesson forms would include prior-identified sticking points for students so that teachers can be automatically notified to help. Teachers will still teach, but grades and classes can now be more personalized, probably even separated into logical cohorts. Incredibly, the cohorts could change dynamically, just like airlines alter flight plans on-the-fly and sometimes reschedule some travelers onto one flight and others onto different routes.

When moving to workflow-enabled personalized learning, a new structure of organization can come into focus. Students will not need constant teacher oversight, but will need other supportive labor in analytics, form lesson planning, perhaps manning large homerooms as student “houses” on campus to oversee various levels of forms across multiple grades, manning labs, and staging hands-on projects. In this scenario, more classrooms become scheduled meeting spaces, labs and project areas. Teaching staff are repositioned to maximize expertise in a matrix of duties. Competency demonstration can be done at the appropriate points with teachers if that is the desired pedagogy, or even with other students who have already passed provided they have a pre-set resource for applying a grading standard and their manners and duties are clear-cut. Pairing up students in this way could use a corner area of a main “house” room for students to do any practical co-work while other students are individually learning or meeting with teachers.

These ideas shift structure to student-centric workflow. Spaces, teaching, and other work are all large contingencies based on student need.

### Use the Killer App First

Let's say your school or district decides to pursue real personalized learning enabled by adapting the technologies of all the digital first systems like FedEx, Amazon and the like. You know you have to think with individualizing workflow, and that means a conflating of what you do with time, subjects, people and your space. You'll need to have a “minimally viable product,” a.k.a. MVP just like entrepreneurs talk about all the time in the software application world. To do *that* means you'll need to step back and look at what is the *most* killer App in demand by your local public. It's the “hook” that will cause a cascading flip to a digital-first entity. For many schools right now, that's their Office Suite. For others it's one subject that has a great courseware subscription.

By piloting one subject area and only one grade or cohort, a school can reconfigure for personalized learning with work forms or lesson plans in modules, plus changed space and points of intersection with teachers. These sorts of plans are typical of virtual and online homeschool services, except for enhancing the intersection points with teachers to be in-person whenever possible, using technology to automate and create more time to have hands-on teacher led-projects and live student collaborations. This new “blending” is the hardest part, but possible with attention to the technology details. Some schools are already finding their way for parts of this overall vision. ■





# The State of the Ed-Tech

There are over 7,500 companies in the ed-tech software space just for K-12. Adding consumer-level Apps, and every discrete learning object and large collections websites, plus ebooks, and you get a picture of millions of things across the landscape. It's important to mentally organize these by functional area.

An underbelly of networks that advance from in-building wireless all the way up to community-wide access, school work with telecom and networking companies to build that infrastructure. On top of that is the local computing, local printing on up to enterprise-level computing, storage, security and printing. Cloud storage and on-site data centers anchor the software unique to a district or school, and layering over that are all the other systems and Apps.

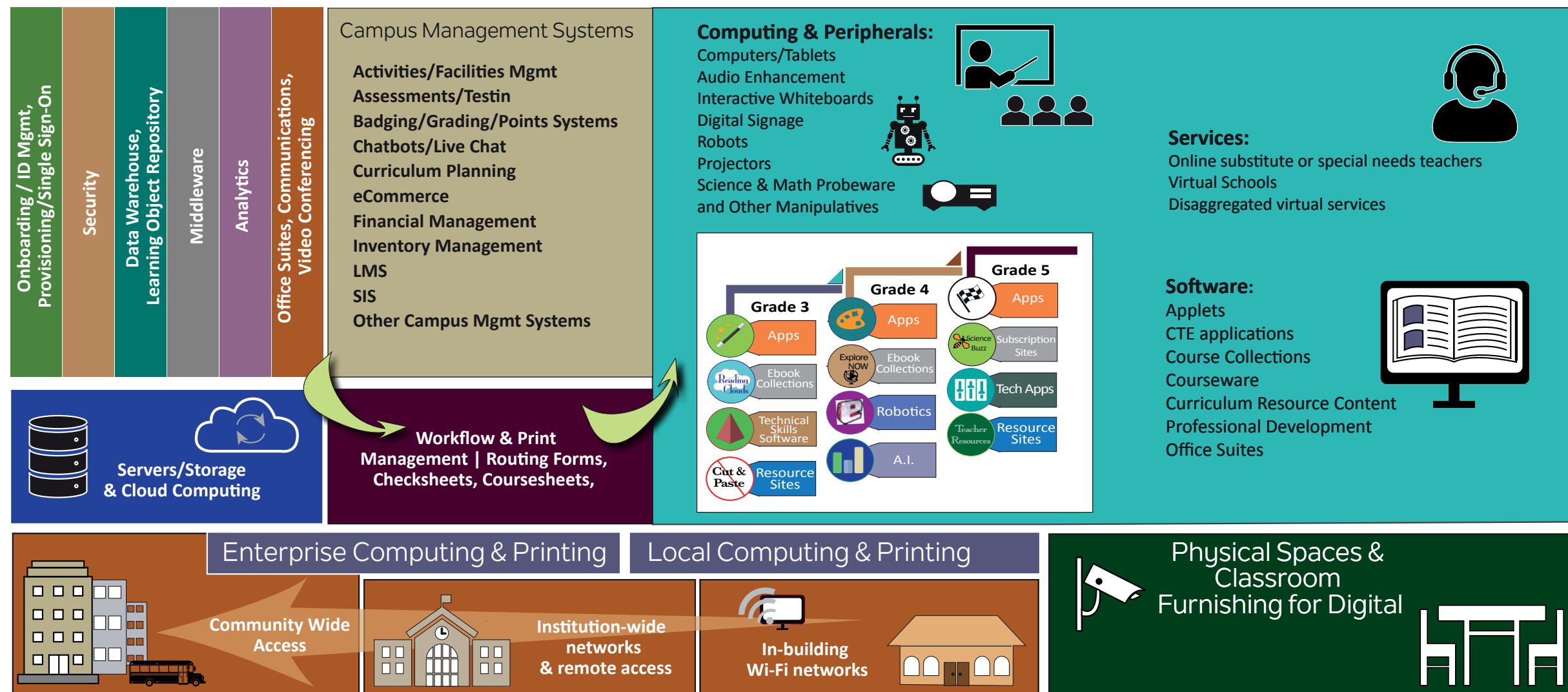
At the first interface point for students and staff is typically a website and portal. These may have surveys and pre-testing once a school starts thinking about their website being more than informational and leverages it for the functions of personalization. A site might also present catalogs of offerings for courses and pathways, a social media relay and paywalls for collecting everything from donations to course fees.

At the center is the function of *workflow*. This is a critical tech architecture piece to attain personalized learning.



# Ed-Tech Model Architecture

Websites, Portal, Course Cataloging, Paywalls, Social Media, Portfolios, Surveying/Pre-Testing



conferencing are also layered in mostly at the district or school-wide level for all users.

At the curriculum planning and teaching and learning levels, all the various other Apps come into play in various mixes by subject, topic, user-need and utility. These may be intermixed with unique hardware types such as microscopes or temperature gauges that plug into laptops for science experiments, or robots and virtual reality headsets. Other services and professional development for teachers are also at this level, being mixed into use as needed.

At the center is the function of workflow. This is a critical tech architecture piece to attain personalized learning. It may be a function inside many major systems and individual Apps but is more critical to understand as the personalized path amongst all the systems and learning objects. A workflow is like an independent agent navigating all the other systems, especially of learning, staff allocation, schedules and access to resources such as printers, peripherals, and more.

Behind this are the major layers of the tech staff's workload. All of the campus management systems, and there can be many, are "framework" systems with a lot of fields for ingesting data of all kinds and performing functions for rostering, learning, grading, finance and more. A separate ID management function known as "provisioning" may be taking data from another system and relaying it for which

resources are allocated to which individuals. While security function may be inherent in individual

Apps, layers of other security rest on the network side or around the portal as a firewall, plus other security systems physical and digital.

Middleware is software that performs functions in between other systems for transiting data, collecting and collating data to fit into the right places and more.

Analytics "caps" may take data from some middleware to put it on display to various administrators and teachers. Office Suites and other communications Apps like video

# Major Categories of Ed-Tech



The major categories in the landscape of Ed-Tech include the following, with many definitions found in the “100+ Characteristics of Digital Curriculum” freely available for download at LearningCounsel.com.

Advertisers and some example companies are threaded into categories in this issue. There are many other companies and products not mentioned in these lists that sell to schools. Some companies could have features and functions in other categories such as offering analytics or aspects of security within their software.

## Major Categories of Ed-Tech

### Activity/Facilities Management

#### Analytics

Decision Ed [decisioned.com](http://decisioned.com)  
Forecast5 Analytics [forecast5analytics.com](http://forecast5analytics.com)  
Scantron [scantron.com](http://scantron.com)

#### Applets (single-subject/single-function)

My School Dance [myschooldance.com](http://myschooldance.com)  
LEAPS [SELforSchools.com](http://SELforSchools.com)  
InferCabulary [infercabulary.com](http://infercabulary.com)  
Foundations in Learning [foundations-learning.com](http://foundations-learning.com)  
PlotagonAB [plotagon.com](http://plotagon.com)  
Youth Development Systems [ydschess.com](http://ydschess.com)

#### Assessments/Testing

Scantron [scantron.com](http://scantron.com)

#### Badging/Grading/Points

E4Effort [e4effort.com](http://e4effort.com)  
Knowstory [knowstory.com](http://knowstory.com)

#### Career & Technical Applications

#### Chatbots/Live Chat

#### Classroom Furnishing for Digital

BenQ (Audio Enhancement) [benq.com](http://benq.com)  
MooreCo [moorecoinc.com](http://moorecoinc.com)

#### Computing (tablets, laptops, desktops, other hardware)

BenQ [benq.com](http://benq.com)  
KinderLab Robotics [kinderlabrobotics.com](http://kinderlabrobotics.com)  
OWI [owi-inc.com](http://owi-inc.com)

#### Course Cataloging

### Course Collections

Safari Montage [safarimontage.com](http://safarimontage.com)  
Socrates [withsocrates.com](http://withsocrates.com)  
Zia Learning [zialearning.com](http://zialearning.com)

### Courseware

Achieve3000 [achieve3000.com](http://achieve3000.com)  
LEAPS [SELforSchools.com](http://SELforSchools.com)  
Safari Montage [safarimontage.com](http://safarimontage.com)  
Socrates [withsocrates.com](http://withsocrates.com)  
StrongMind [strongmind.com](http://strongmind.com)  
STEMscopes [stemscopes.com](http://stemscopes.com)

### Curriculum Planning

Mackin [mackin.com](http://mackin.com)  
Decision Ed [decisioned.com](http://decisioned.com)

### Curriculum Resource Content (Discrete Objects or Collections)

BenQ [benq.com](http://benq.com)  
Decision Ed [decisioned.com](http://decisioned.com)  
InferCabulary [infercabulary.com](http://infercabulary.com)  
Mackin [mackin.com](http://mackin.com)  
OverDrive Education [company.overdrive.com](http://company.overdrive.com)  
curriculum or [overdrive.com](http://overdrive.com)  
Safari Montage [safarimontage.com](http://safarimontage.com)

### Financial Management

Decision Ed [decisioned.com](http://decisioned.com)

### ID Management/Provisioning

Tools4Ever [tools4ever.com](http://tools4ever.com)  
IdentiMetrics [identimetrics.net](http://identimetrics.net)



## Inventory Management

Knowstory [knowstory.com](http://knowstory.com)

## Learning Management System (Framework, no Content)

## Learning Object Repository

Safari Montage [safarimontage.com](http://safarimontage.com)

## eCommerce Paywalls (Fundraising)

My School Dance [myschooldance.com](http://myschooldance.com)

## Middleware

Tools4Ever [tools4ever.com](http://tools4ever.com)

## Peripherals/Interactive Tools/Audio Enhancement

BenQ [benq.com](http://benq.com)

OWI [owi-inc.com](http://owi-inc.com)

MooreCo [moorecoinc.com](http://moorecoinc.com)

KinderLab Robotics [kinderlabrobotics.com](http://kinderlabrobotics.com)

## Portals

E4Effort [e4effort.com](http://e4effort.com)

## Portfolios

Knowstory [knowstory.com](http://knowstory.com)

Decision Ed [decisioned.com](http://decisioned.com)

## Professional Development

ObserverTab [observertab.com](http://observertab.com)

Zia Learning [zialearning.com](http://zialearning.com)

PlotagonAB [plotagon.com](http://plotagon.com)

## Office Suites/Apps (Documents, Communica- tions, Video Conferencing, Presentations, etc.)

Buncee [app.edu.buncee.com](http://app.edu.buncee.com)

PlotagonAB [plotagon.com](http://plotagon.com)

## Networking/Telecommunications

## Security

IdentiMetrics [identimetrics.net](http://identimetrics.net)

Gaggle [gaggle.net](http://gaggle.net)

## Server/Storage

## Services

My School Dance [myschooldance.com](http://myschooldance.com)

LEAPS [SELforSchools.com](http://SELforSchools.com)

InferCabulary [infercabulary.com](http://infercabulary.com)

## Major SUBJECT TRENDS that Cross Multiple Categories:

### Personalized Learning

Achieve 3000 [achieve3000.com](http://achieve3000.com)

Decision Ed [decisioned.com](http://decisioned.com)

Foundations in Learning [foundations-learning.com](http://foundations-learning.com)

Mackin [mackin.com](http://mackin.com)

Safari Montage [safarimontage.com](http://safarimontage.com)

Zia Learning [zialearning.com](http://zialearning.com)

### Teacher Professional Development

LEAPS [SELforSchools.com](http://SELforSchools.com)

ObserverTab [observertab.com](http://observertab.com)

Mackin [mackin.com](http://mackin.com)

Safari Montage [safarimontage.com](http://safarimontage.com)

Zia Learning [zialearning.com](http://zialearning.com)

### STEM

Achieve 3000 [achieve3000.com](http://achieve3000.com)

STEMscopes [stemscopes.com](http://stemscopes.com)

KinderLab Robotics [kinderlabrobotics.com](http://kinderlabrobotics.com)

### Single Sign-On

Tools4Ever [tools4ever.com](http://tools4ever.com)

E4Effort [e4effort.com](http://e4effort.com)

### Social Media/External Communications

Decision Ed [decisioned.com](http://decisioned.com)

Knowstory [knowstory.com](http://knowstory.com)

PlotagonAB [plotagon.com](http://plotagon.com)

### Student Information Systems

Bocavox [bocavox.com](http://bocavox.com)

### Virtual Schools

### Websites/Web Marketing

### Workflow & Print Management





Language  
18 products



Math  
143 products



Science  
13 products



Social Studies  
21 products



All Areas of Learning  
143 products

You can find all of these companies at [Knowstory.com/marketplace](https://www.knowstory.com/marketplace) or at the URLs they list. While there are hundreds of thousands of potential resources for schools and districts today, making sense of them is hard. Learning Counsel invited these companies to sponsor and showcase their particular products. Some fit in multiple sections of the tech categories we explain in this issue.

Please help us help them with your support through interest in their product. It is through their underwriting that we can bring this Special Report to you.

### Analytics

Leveraging Data  
for Performance  
Education

DecisionEd

DecisionEd delivers the most powerful, easy-to-use, easy-to-understand data dashboard and analytics solution available. We integrate ALL current and historical data from every subject area to positively impact student performance and educational outcomes. Dashboards provide rich insights to administrators and teachers. Predict future results with our embedded AI and predictive analytics. Visit [DecisionEd.com](https://www.decisioned.com) for more.

### Analytics

5Lab FORECAST5  
ANALYTICS

5Lab is a student achievement and performance tracking tool that connects disparate student data into a single analytics platform. Users can create customized dashboards, their Every Student Succeeds Act (ESSA) report, and presentations to help better determine the health of the district, all the way down to the individual student. Go to [Forecast5analytics.com/product/5-lab](https://forecast5analytics.com/product/5-lab) to learn more

### Analytics

Scantron Analytics SCANTRON  
LEARNING AND ASSESSMENT SOLUTIONS

Scantron Analytics provides at-a-glance visualizations and interactive dashboards to support your evidence-based decision-making. Easily view accountability measures from most data sources without the expense of a data warehouse. Aggregate and disaggregate groups dynamically so you can answer questions as fast as you can ask them. Smart accountability starts here. Visit [Scantron.com/assessment-solutions/analytics](https://www.scantron.com/assessment-solutions/analytics) for more.

### Applets

Access Code Foundations  
in Learning

Access Code is a blended assessment-intervention system for students who persistently struggle with reading comprehension and fluency. It enables teachers to diagnose struggling readers and deliver differentiated instruction in a digital learning environment to address students' decoding deficits and help them develop automatic word recognition. Visit [Foundation-Learning.com/products/access-code-intervention](https://www.foundation-learning.com/products/access-code-intervention) to learn more.

### Applets

Turn ordinary  
text into  
movie magic

Plotagon

Plotagon Studio turns ordinary text into colorful and engaging animated movies, starring your own original avatars and characters! No experience necessary. The perfect way to train staff, engage students of all ages, and add life to parent communications. Special pricing for education professionals. Free trial at [plotagon.com](https://www.plotagon.com).

Fun with Chess  
Learning System  
A Chess Learning System

YOUTH DEVELOPMENT SYSTEMS INC.  
A U.S. Chess Federation Affiliate

The Fun with Chess Learning System® (FwC) engages and entertains while improving focus, concentration and analytical (critical thinking) skills. Unique features allow students who may need more repetition and memory cues to benefit. Activity reporting at student, teacher, school and district levels help assure a successful online chess training program. For more, visit [FunwithChess.com](https://www.funwithchess.com).



## Badging, Grading, Points Systems


**E4Effort**

**E4Effort**

The E4Effort System improves student engagement by adding a 2<sup>nd</sup> metric to the academic metric: *in-class student effort*. Employing both metrics gives a truer picture of overall student performance. Recognizing and scoring students on their in-class effort offers immediate and actionable feedback and encourages students to stay focused and on task. Visit [e4effort.com](http://e4effort.com) for more information.

## Courseware


**SOCRATES**

Award-winning learning platform that creates dynamic personalized learning paths for any student. Games and rewards keep kids engaged. Reporting provides valuable insights and tools for teachers and administrators. Common core Math, English, and Science with more on the way. Proven to increase test scores. Special Education and Spanish editions available. Visit [with-Socrates.com/school/](http://with-Socrates.com/school/) to learn more.

## Courseware

Reinventing  
the learning  
experience


**STRONGMIND**

StrongMind™ is dedicated to fostering student success and igniting a passion to learn. StrongMind's standards-based, digital content provides a robust and future-thinking curriculum with deeply engaging media, scaffolding to support success for all students, dynamic data analytics and reporting for stakeholders, and flexibility to work with district technology plans. Visit [StrongMind.com](http://StrongMind.com) to learn more.

## Curriculum Resource Content (Discrete Objects or Collections)


**InferCabulary**

**InferCabulary**

InferCabulary, the fun, K-12, web-based application improves critical thinking and Tier Two/Academic vocabulary. Students analyze the common thread among carefully chosen images presented simultaneously. Through this Semantic Reasoning process, students infer deep meaning of words, mimicking the natural, but lengthy process of inferring word meaning from avid readership. Visit [InferCabulary.com](http://InferCabulary.com) to learn more.

## Curriculum Resource Content (Discrete Objects or Collections)



MackinVIA, named 2019 Product of the Year, is a multi-award-winning, digital content management system, providing easy access to eBooks, read-alongs, audiobooks, databases, and videos. With just one login, users can view, utilize, and manage all of their digital resources. Further, MackinVIA allows simultaneous, unlimited access to multiple users on all platforms, and is mobile friendly. Visit [Mackin.com](http://Mackin.com) to learn more.

## Curriculum Resource Content (Discrete Objects or Collections)


**Sora**


Sora is the student app designed around the modern reading experience. In addition to the most extensive and diverse catalog of eBooks and audiobooks available to schools, students can also use Sora to access the digital collections of their public libraries. Whether students are reading for class or fun, Sora makes it easy. Powerful learning tools paired with essential titles means students gain 24/7 access to the content they want and the personalized support they need. Visit [meet.soraapp.com](http://meet.soraapp.com) to learn more.

## ID Management/ Provisioning


**HelloID**

**TOOLS4EVER**

HelloID allows students and staff to login to a customizable portal containing all their approved applications. The portal can be securely accessed from anywhere, on any device, at any time. Data owners be appointed to autonomously manage access to applications on both a user and group basis without IT intervention. Go to [Tools4ever.com/software/helloid-ideas-cloud-single-sign-on](http://Tools4ever.com/software/helloid-ideas-cloud-single-sign-on) for more.

## Learning Object Repository

The Leading  
Learning Object  
Repository

**SAFARI  
MONTAGE**

SAFARI Montage is the leading K-12 Learning Object Repository, Video Streaming Library, IPTV & Live Media Streaming provider. The system provides an interoperable foundation for a Digital Learning Ecosystem where teachers and students can access procured, created and curated educational digital resources, create playlists and integrate items into their LMS. For more visit [SAFARIMontage.com](http://SAFARIMontage.com).

## Office Apps

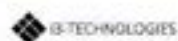
One Tool,  
Endless  
Possibilities

**buncee**

Buncee is an award-winning creation and communication tool that allows students, teachers and administrators to easily share visual representations of content, across grade, age and learning levels. Create from scratch or use our templates to quickly and creatively innovate instruction, making learning fun for students of all ages. Learn more at [app.edu.buncee.com/what-is-buncee](http://app.edu.buncee.com/what-is-buncee).



### Office Apps



Designed to keep students focused by using the interactive touch display. i3 Learnuhub is a cloud based collaborative learning platform that allows teachers to prepare and share lessons with students anywhere and anytime. Featuring Plug & Play, android on board, touch technology, note taking software & intelligent pens. Visit [MooreColinc.com/product/i3touch-touchscreens](http://MooreColinc.com/product/i3touch-touchscreens) for more information.

### Peripherals/Interactive Tools/ Audio Enhancement

Technology &  
Professional  
Solutions Provider



BenQ is a world-leading technology and professional solutions provider serving the enterprise, education, and entertainment markets. Their solutions include digital, laser, and interactive projectors; premium flat panels; and interactive large-format displays that take visual enjoyment to new heights in classrooms and lecture halls. More information is available at [BenQ.com](http://BenQ.com).

### Peripherals/Interactive Tools/ Audio Enhancement



OWI AMP-HD series is a classroom audio solution of 1-4 speakers that provides robust and intelligible audio enhancement, while also integrating with paging and life safety systems making it quick, easy and cost effective to be NFPA72 life safety as well as ADA (hearing impaired) regulations compliant ready. Visit [owi-inc.com/products.html](http://owi-inc.com/products.html) to learn more.

### Personalized Learning

Differentiated  
Instruction.  
Accelerated  
Learning.



For your English language arts, science, and social studies classes with a mix of student abilities, Achieve3000's PRO is the differentiated literacy solution that accelerates reading gains for all students – all in a single classroom! Delivering fiction and non-fiction content, and lessons supporting a proven instructional strategy. Visit [Achieve3000.com/demo-request-landing-page](http://Achieve3000.com/demo-request-landing-page) for more.

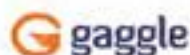
### Professional Development



Data driven, digital PD for new and struggling teachers seeking to improve their skills as they learn, collaborate and practice effective teaching strategies proven to increase student engagement and achievement. Research based resources and tools save teachers time zeroing in on specific skills and best practices. Call for a demo. For more, visit [ObserverTab.com](http://ObserverTab.com).

### Security

Real Safety  
in Real Time



Protect your students and ensure their well-being with the most proactive tool in digital safety. Whether your schools use Google, Office, or Canvas environments for digital communication, we have you covered. Using machine intelligence and trained safety experts, we monitor students' online behavior and flag potential harmful situations. Visit [gaggle.net](http://gaggle.net) to learn more.

### Security



identiMetrics Biometric RallyPoint Control™ adds a critical piece to your school safety plan. It's designed for school administrators who want to greatly enhance parent communication, provide real-time student and staff information for emergency responders, and ensure safe and orderly reunification of students with parents during an emergency evacuation. For more, visit [identimetrics.net](http://identimetrics.net).

### Services (Online Schools, other services)

Empower Teachers.  
Inspire Students.  
Transform Your  
School.



Leaps is the most comprehensive K12 program for SEL, Behavior & Mental Health for schools. With 30 years of research, Leaps provides age-appropriate lesson plans, assessment and reporting tools with the promise of a positive impact on grades, attendance, behavior, community and culture. A complete solution for teaching what matters most. Go to [LeapsForSchools.com](http://LeapsForSchools.com) to learn more.

### Services (Online Schools, other services)

Free Dance & Event  
Management  
Platform



My School Dance is a free dance and event management platform that provides teachers and administrators with the digital tools needed to take the burden of school event management away. Our platform saves schools hours on tasks such as selling tickets, collecting permission forms, and checking students in and out. Visit [MySchoolDance.com](http://MySchoolDance.com) for more information.



## STEM



The KIBO robotic kit is an easy and fun way to bring robotics and coding to your young learners and spark their interest in **STEAM**. This screen-free, hands-on robot is designed for students 4- to 7 and offers kids a **playful and creative** way to learn to **code**! Visit [kinderlabrobotics.com/kibo](http://kinderlabrobotics.com/kibo) for more.

## STEM

The Leader  
in STEM  
Education



STEMscopes™, created by Accelerate Learning Inc, is an award-winning, research-based national leader in PreK-12 STEM curriculum. Used by over 4M students across all 50 states, STEMscopes provides comprehensive digital resources, supplemental print materials, and hands-on exploration kits that drive engagement and academic growth. For more, visit [STEMscopes.com](http://STEMscopes.com).

## Student Information Systems

Maestro SIS,  
Hub of the  
Learning  
Universe



MAESTRO SIS by BocaVox is a customizable student information system built with the latest technologies. Maestro empowers institutions by automating administrative tasks - from lead to alumni - with unparalleled support. Features include: LMS & payment integration, CRM, registration, reporting, ledger, academic pacing, grades, transcripts, attendance, multiple communication & retention tools. Visit [BocaVox.com](http://BocaVox.com) for more.



## FREE

- Student, Educator & Agent (Company) Profiles
- Social Posting & Private Messaging
- Student Portfolios & Badges
- Shop the Marketplace of any Publisher or Free Resource Links
- Keep & Share Learning Resource Records
- Learning Groups



Visit [KnowStory.com](http://KnowStory.com) to learn more.



# Designed for Digital Workflow – Personalized Learning

Becoming a digital-first school means arriving fully as an Internet entity, not just with websites and portals, but using these for the work of recruitment, retention, and the daily operation of the entire enterprise.

This article is a walk-through of the major areas new school curriculum and tech planning starting with situational and geographic awareness and then moving through tactics to manifest the whole organization in the digital sphere to onboard students, assign and schedule them with all the learning and experiences they need for a robust education.

## Step 1 – Needs Assessment

Pretend you won't get every student in the area, that their parents may consider an alternative school or opt out to homeschool. Loss of students for districts in many cities is causing significant shortfalls in budget and forcing staffing cuts. Schools willing to change to meet needs in their local area, to compete aggressively, must think about their Internet "face" and how it engages rather than just informs. Commercial companies marketing on the Internet often engage customers through pre-profiling like [StitchFix](#), a company promising personalized shopping based on a person expressing style by selecting pictures of various items shown. Schools can learn from this initial personalization to capture student interest and registration. By devising similar interest-surveys and needs for different ages, schools can offer the reward of membership into a club-within-the-school of some sort that fits their profile, similar to the "sorting" that Hogwarts school of the famed Harry Potter world gave new students with a magic hat, putting each into one of four major "houses" that they would be members of along with other students of all ages.

Later assessments for abilities could further differentiate learning pathways for any one student even before the start of the school year and provide guided study options any time they need. This step moves leadership into thinking like an online social membership organization and creates a sense of inclusivity.

### Key Technologies

- ❖ Online Survey Systems and/or Workflow Forms
- ❖ Mass eMail and System Notification to Individual Users
- ❖ Analytics

## Step 2 - Draft Strategic Plan/Goals/Policies/Purposes

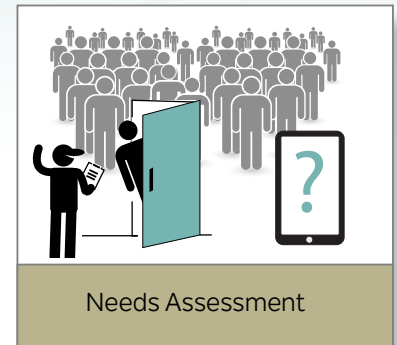
Since schools are now pre-profiling students, a custom-fit strategy of curriculum can come into focus. This step is the work of making a baseline workable curriculum for academic requirements and then putting around them divergent paths, electives, and customizations that will fit student needs based on the pre-profiling and pre-assessments. This should include a time schedule for students who could mostly be at home but come in for a certain lecture classes, labs, sports, or teacher meet-ups.

### Key Technologies

- ❖ Curriculum Planning/Inventory Systems
- ❖ Student Information System(SIS) and/or Learning Management System (LMS)
- ❖ Workflow Forms
- ❖ Learning Object Repository (LOR)
- ❖ Scheduling Systems

## Step 3 - Marketing Appeal & Orientation

Now alterations of what the websites say for appeal to students for that year, for which grades or houses, can be marketed with notifications going out to all potential or registered students. This step provides a window for registration similar to web store sales, indicating there are innumerable pathways but limited scheduled "seats"



Step 1



Step 2



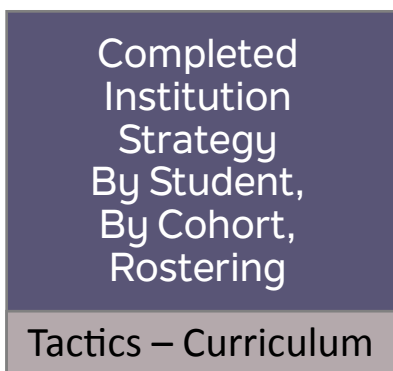


### Step 3

for certain activities so parents and students should hurry up and register. Once registered, students go through an “onboarding” orientation sequence and are given their initial credentials (identity) with a library of resources and their own dashboard. They can start earning “points” or “badges” immediately with communication across to other students in their house and more. Meanwhile, they are told that their precise schedule is being worked on and to expect a notification sometime soon.

#### Key Technologies

- ❖ Websites/Portal
- ❖ Assessment/Testing Systems
- ❖ Points/Badging System
- ❖ ID Mgmt



### Step 4

#### Step 4 – Tactics - Curriculum

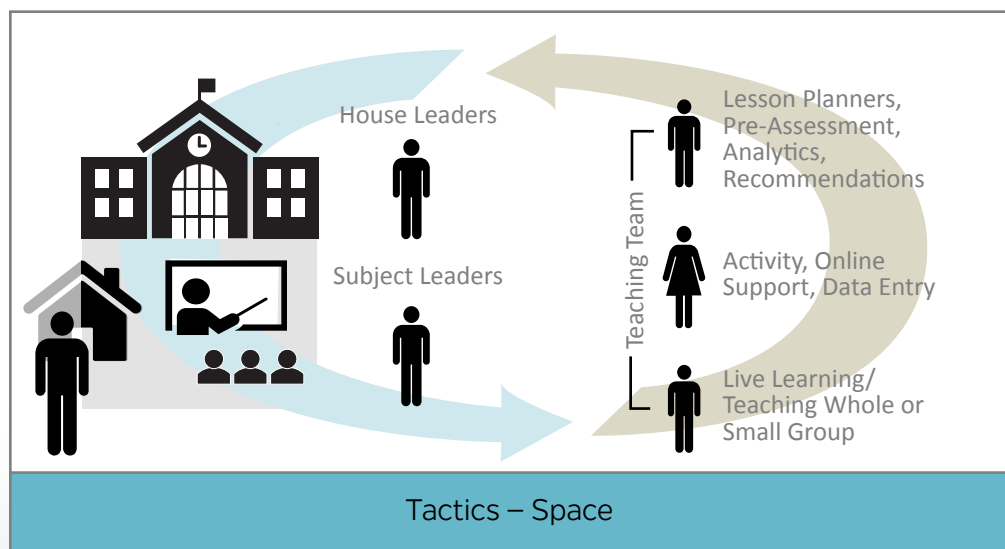
Now the real work gets going on the backend with planning down to the individual student, then cohorting students of like ability from all the membership houses for the following school year in general, and specifically the first three months of work with courses.

#### Key Technologies

- ❖ Workflow Forms
- ❖ Courseware
- ❖ Learning Apps
- ❖ Learning Games
- ❖ Resource Collection Sites (ebooks)
- ❖ Learning Object Repositories (LOR)

#### Step 5 – Tactics - Space

Students get notified where their house room is on campus while the house leader, subject leaders, and teaching teams work furiously to calendar all cohort intersections with live teaching and get out all the digital resources with instructions.



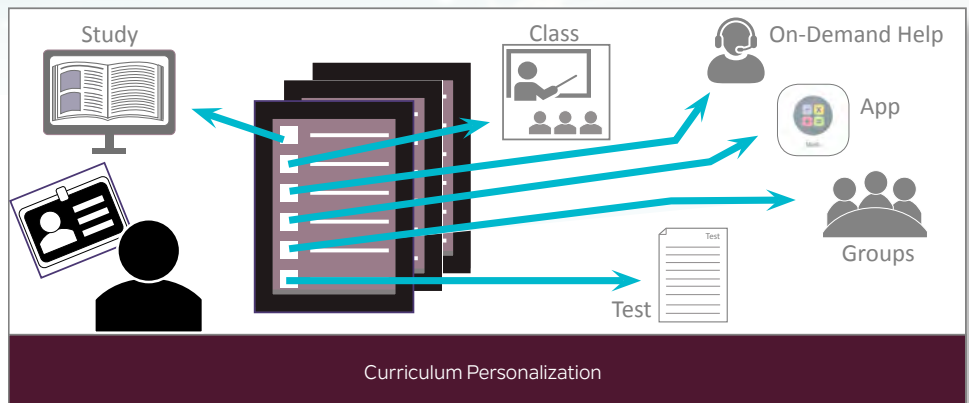
### Step 5

#### Key Technologies

- ❖ Same as all previous Steps, plus Office Suites.

## Step 6 – Tactics – Curriculum Personalization

School year begins and students who need to be on campus all the time study in their house room a large portion of the time. Since they are on a personalized pathway, planners and algorithms take over to infer when they will need direct instruction, or they can ask for it at any time. Certain lectures are planned along with labs and electives on the calendar for all students, with some of the same lectures recurring throughout the year as different cohorts ripen to those points of intersection with the need for live lectures, whole class or small group work.



Step 6

### Key Technologies

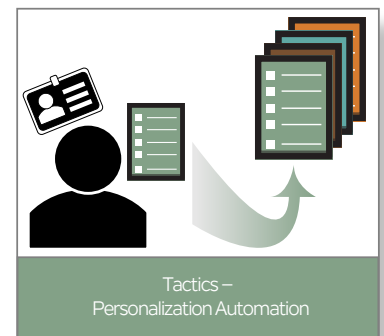
- ❖ Workflow Forms
- ❖ Notifications, Approvals
- ❖ Courseware
- ❖ Scheduling
- ❖ SIS & LMS
- ❖ LOR

## Step 7 – Tactics – Personalization Automation

Planners ensure as much of the learning as possible is personal-pace auto-advanced, with auto-cohorting, auto-scheduling, auto-reassignment to new teaching teams as needed. This will be rudimentary initially.

### Key Technologies

- ❖ SIS & LMS
- ❖ Office Suites
- ❖ Live Chat
- ❖ Video Players



Step 7

## Step 8 – Tactics – Records & Proofs

Student start accumulating records of their own, papers and proofs of all kinds they turn in to planners for grading. They need print access rights for somethings, and constant access to email, chat, video, and the ability to post socially or duplicate school posts to outside social media.

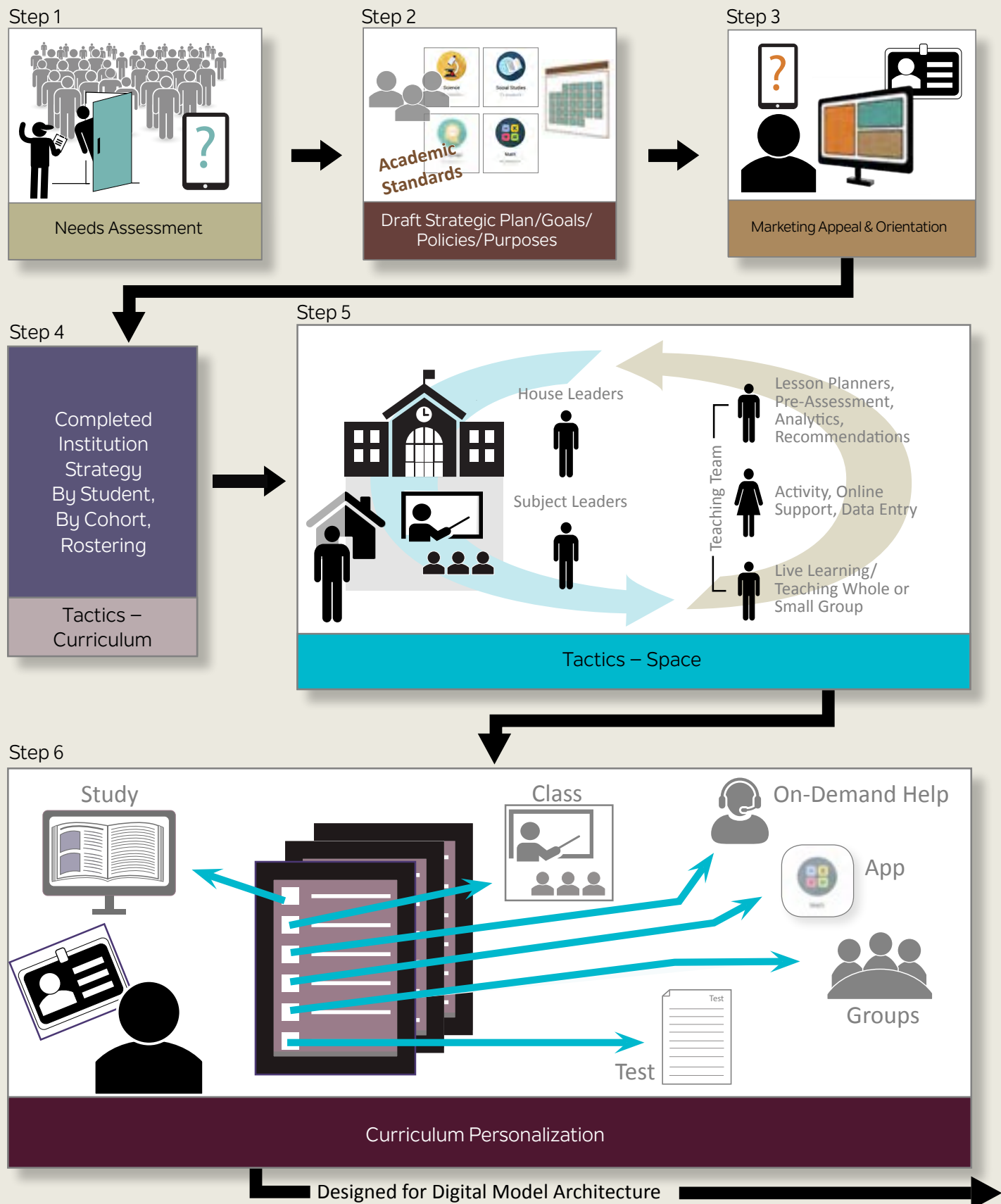
### Key Technologies

- ❖ Print Management
- ❖ Social Media
- ❖ Badging/Points Systems
- ❖ Storage
- ❖ Portfolios
- ❖ Office Suites & other creative “proofs” Apps such as mind-mapping, template animation and more



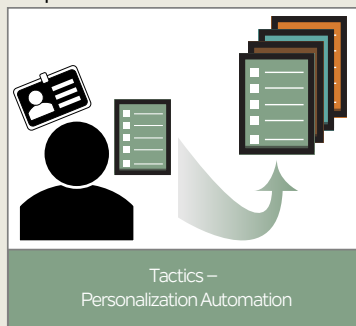
Step 8

# Designed for Digital Workflow– Personalized Learning





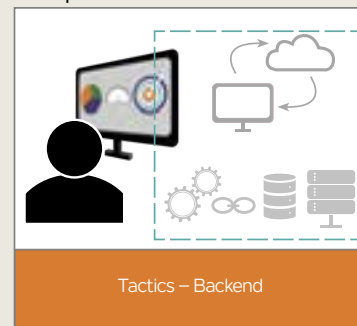
Step 7



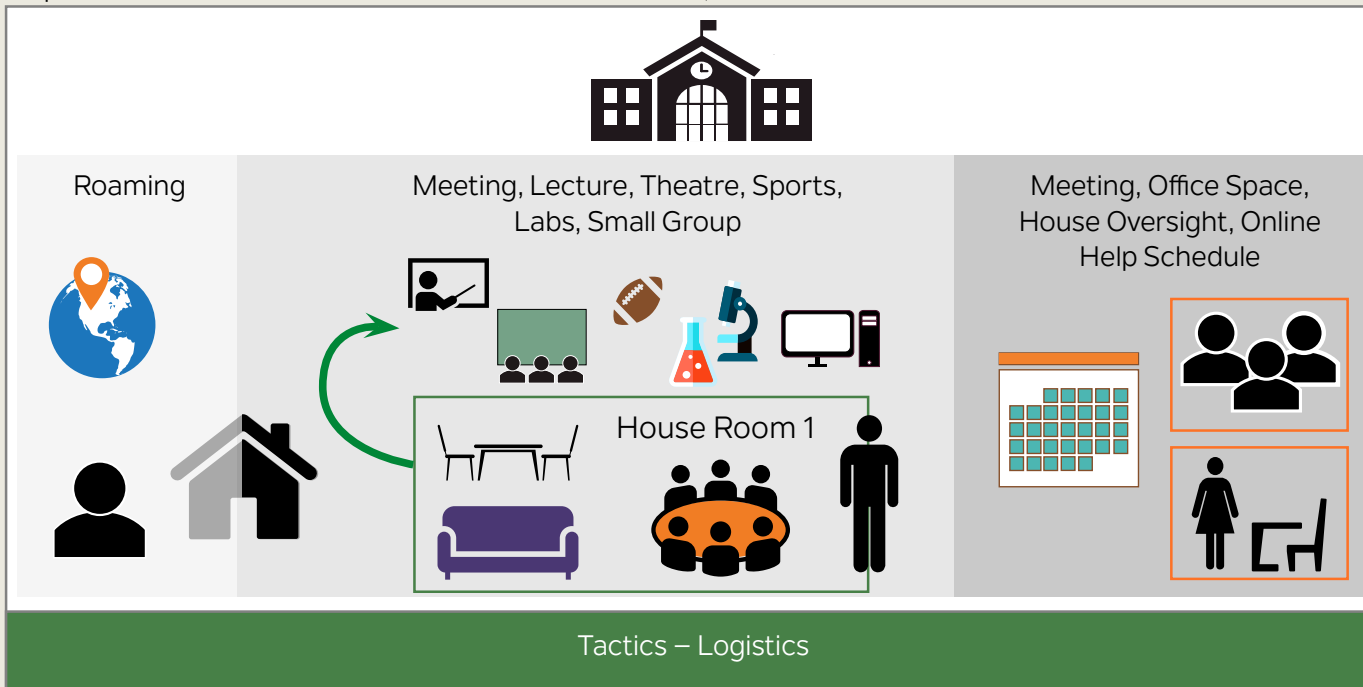
Step 8



Step 9



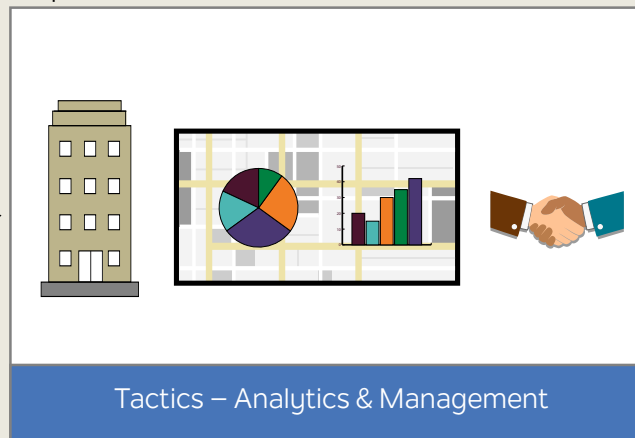
Step 10



Step 11



Step 12





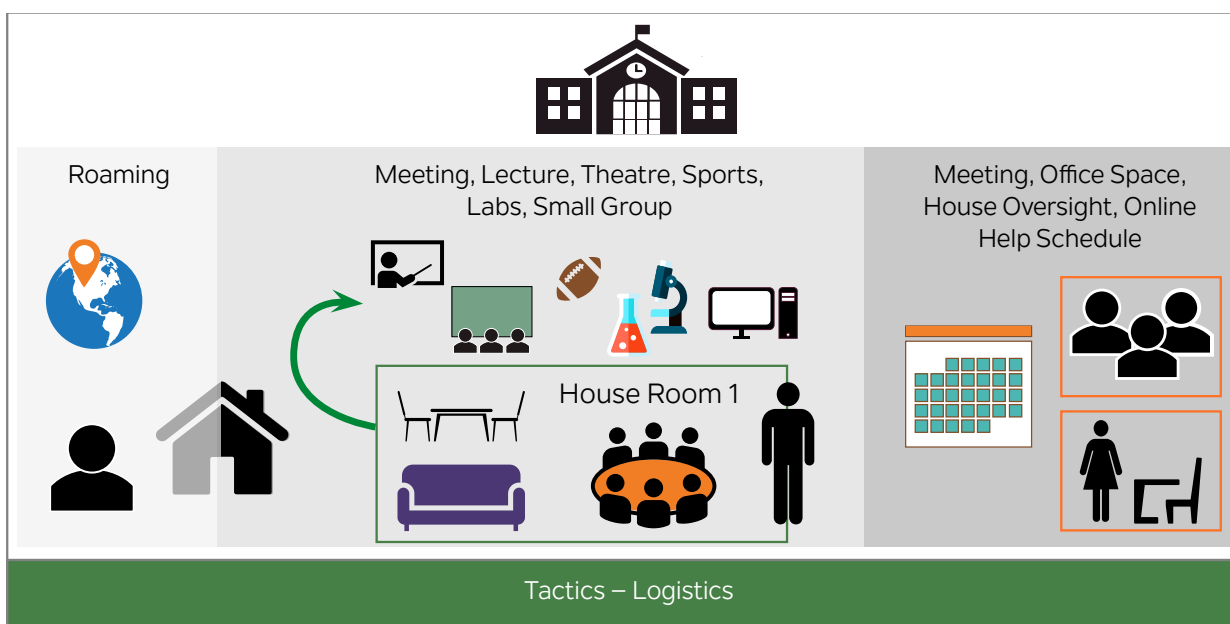
## Step 9

### Step 9 – Tactics – Backend

Care for everything being integrated and what a student and teacher sees on their dashboards for notifications, new resources through a single sign-on software like Tools4Ever are paid attention to by the tech team. Delays in resources create inequities of access for students.

#### Key Technologies

- ❖ Single Sign-On
- ❖ Analytics Dashboards
- ❖ Integrations
- ❖ Network Maturity



## Step 10

### Step 10 – Tactics - Logistics

Physical environment. Students have a campus experience that is untethered from the old construct of grade and class norms. Parts of the teaching team care for the overall experience across the main homeroom “house” and the various labs, classrooms, theatres and sports areas.

#### Key Technologies

- ❖ Furniture & Space Planning
- ❖ Workflow Forms
- ❖ Scheduling
- ❖ LMS
- ❖ Web conferencing
- ❖ Office Suites

Becoming a digital-first school means arriving fully as an Internet entity, not just with websites and portals, but using these for the work of recruitment, retention, and the daily operation of the entire enterprise.

### Step 11 – Tactics - Transactions

Back-end financial management of student accounts with school online paywalls for an easier parent interface, and other back-office activity.

#### Key Technologies

- ❖ Finance/Accounting systems
- ❖ Ecommerce
- ❖ Cataloging systems (course storefronts, school stores)
- ❖ Transportation systems
- ❖ Human Resource Systems
- ❖ Safety Incident Systems



Step 11

### Step 12 – Tactics – Analytics & Management

District analytics that allow schools to move into predictive modeling, specify needed community outreach and do calculated fund-raising.

#### Key Technologies

- ❖ Learning & Geo Analytics
- ❖ Social Media
- ❖ Portals
- ❖ Fundraising Apps



Step 12





## On the Road to Apptastic

Being Apptastic is a journey. It is a road that will take school districts, charters and independent schools from the old style of learning to a world where students direct their own learning experience using all the available advantages of technology to leverage the humanness of education.

The road to Apptastic is long, but each step increases the richness of the education experience for the learner. And although being Apptastic is the final destination, there are many routes to get there. Two wonderful examples of the journey are Gwinnett Public Schools and Classic Academies, both traveling in their own unique ways.

# Building a Learning Object Repository

*“The great challenge we are finding is devising a manageable process to assure that we as a district are providing the highest quality and most appropriate instructional resources to students.”*

— Tricia Kennedy  
Instructional Development and Support Executive Director,  
Gwinnett County Public Schools

Gwinnett County Public Schools, located in the metro Atlanta area, is the largest school system in Georgia, serving 180,000 students through 140 schools. By almost every measurable statistic, Gwinnett is a shining example of a successful large urban district. And like every large district, moving the needle on anything involves a lot of moving parts.

## Putting the Pieces Together

As the district transitions to digital, they are beginning to build a Learning Object Repository (LOR). Gwinnett has partnered with SAFARI Montage for their curriculum and instruction digital repository. At this point, all their district-wide digital content is delivered to teachers and students through the SAFARI Montage LOR. Teachers and students access hundreds of thousands of SAFARI Montage content items. In addition, they have many thousands of individual content objects that the district has purchased from 3rd party vendors that they distribute through the LOR. Over the next two years, they anticipate purchasing tens of thousands more as they go through a K12 language arts and social studies adoption process. Their instructional materials resources are moving more and more towards digital, with print becoming more supplemental.

Teachers are also able to upload and store their own web links, documents, and other content that they have created, and it is housed in the LOR. They can share this content among their colleagues at their school. At this point in their digital evolution, only district curriculum directors can share content across the district.

All the content housed in the repository can be embedded into courses in the district's learning management system, Brightspace by D2L. As the district brought SAFARI Montage into the ecosystem, Brightspace partnered with

them and D2L to provide an integration which allows teachers and students to access all the content within SAFARI Montage through their courses in D2L. This creates a seamless experience for students and teachers.

## The Vetting Conundrum

All instructional materials selected and purchased by the district undergo an extensive review process, and the digital content follows the same process. Content is reviewed for standards alignment, pedagogical framework, student accessibility, sensitivity, and bias, literary and aesthetic value, authorship and validity. For digital content, Gwinnett also reviews technical specifications, which include a requirement for single sign on delivery and an expectation for interoperability standards certification.

As the sheer number of learning objects increases, the vetting process becomes increasingly problematic.

“We are yearning for the day when algorithms, semantics engines, or AI . . . or whatever it takes . . . will relieve the



“...volume is not the greatest value for an LOR. If teachers (and students) cannot easily find valuable, effective instructional resources, then there is no point in having an LOR.”

– Tricia Kennedy

current human equation required to thoroughly vet digital content,” said Tricia Kennedy, Gwinnett’s Instructional Development and Support Executive Director. “The shift from static print resources to seemingly unlimited and dynamic digital resources is incredible for what it can mean for instruction and student learning. The great challenge we are finding, however, is devising a manageable process to assure that we as a district are providing the highest quality and most appropriate instructional resources to students. It was fairly easy to read every word of every textbook before distributing to students. That is not even feasible with the thousands of digital resources coming our way. I believe that even the industry partners who provide curation and standards alignment are still using human reviewers at some point in their processes.”

### Easy Access

Digital content objects are integrated into the LOR and are searchable by teachers and students. Teachers can search across all content items. They can create playlists within SAFARI Montage for student access, and/or they can pull selected content into their course pages within D2L for student access.

Because they have established single sign on through their district teacher and student portals for SAFARI Montage and D2L, when they bring new content items into SAFARI Montage LOR (whether that is a district content item, or uploaded by individual teachers), all the content can be accessed through the single sign on process. Teachers and students only log-in once to their portal, and then go directly to their course pages in D2L, or they can link directly into the LOR to search for content, without having to sign in again to those platforms.

D2L worked with SAFARI to create an integration link between their two systems. For teachers, this means that when they are in their course pages in D2L creating lessons for students, they can add any content that is in SAFARI by clicking a single link, which then takes them into SAFARI where they can search for content, make a selection and then click another link that directly adds that selection into their course page content. For students, once they are inside their D2L course page, any SAFARI content that has been added is viewed from within that course page. There is no reason the students would even know they had moved from D2L to SAFARI.

### From Thousands to Millions

Gwinnett has hundreds of thousands of content objects from SAFARI, and tens of thousands that were added from 3rd party vendors. At this point, because they are just beginning to grow the purchased and created content, they don’t know how large it might become. “It would not surprise me for it to move into the millions,” said Kennedy. “However, volume is not the greatest value for an LOR. If teachers (and students) cannot easily find valuable, effective instructional resources, then there is no point in having an LOR. There may be diminishing returns as volume increases. That is something we are watching. It’s like the trade-off between shopping in a super-store, where selection is amazing but it can take longer and be more frustrating to have to go up and down every aisle, and shopping in a convenience store where selection is limited but shopping is fast. We want the LOR to add value to teachers’ instructional planning - make it easier for them to find that exactly right resource for that group of students or individual student.”



Gwinnett spends a lot of time and resources assuring that content is closely aligned with the district standards and instructional core values prior to purchase. They have an 18-month review process, that includes lead teachers and community members for selection, and then all schools have the opportunity to pilot sets of materials/content before they make a final selection for district purchase. For digital content, because the volume is so expansive, the curriculum departments also conduct a separate review, searching for individual objects with key terms, and then checking the search items against the district standards and expectations.

In the district's most recent adoption process, they witnessed the fruits of their labor; teacher selection committees highly valued the digital content that was available for review. "We believe we have moved the needle over the last few years toward a preference for digital content because of its flexibility in delivery, the engagement it provides for students and the ease it allows for teachers to tailor or customize instruction for individual students," said Kennedy. "That said, we are not ready to go 'fully digital,' as our teachers and our students still value print materials for specific purposes.

## Always in Beta Mode: Is this education's future?

*"We all know that for students, one of the best things about school is engaging in projects that help you explore your passions and interests, and enable you to apply the content you've learned to real-world scenarios."*

— Stacey Perez  
Principal, Classical Academies

The Classical Academies is an organization of award-winning, tuition-free, Certified California Public Charter Schools serving North San Diego County in California. It is open by lottery to all students in San Diego County.

Each campus offers a flexible, personalized educational environment that blends independent study and the traditional classroom experience. These hybrid programs are designed to encourage students to explore their interests, accommodate their learning styles and reach their maximum potential by becoming thinkers, communicators, and achievers.

Classical Academy Online evolved from a four day, in seat, charter high school that served 800 students. Students were seeking options to the traditional high school format. Many needed flexible schedules, online access to curriculum and alternatives to sitting in a seat for their academic success. The program began as a full online program with access to a learning center and live credentialed teachers. Classical Academies now include seven physical locations as well as the original online school, and enrollment has climbed to more than 4500 students.

### Student-directed Format

Students set their own goals, schedule, and participate in weekly one-on-one mentoring. Classical Academies maximize student engagement by focusing on the habits of success and working towards mastery in 36 cognitive skills provides students the framework, vocabulary, and a consistent rubric to be successful.

The charter has been working with Summit Learning to provide online curriculum and approach to education. Within the Summit Learning platform, students are given choices how they learn content through a playlist of resources. They also partner with Schoology for their learning management system and Pathways for the student information system.

### Content Knowledge

In order to put Cognitive Skills to work, the students must develop a broad knowledge base. Students must understand academic subjects more deeply than a web search can provide. A foundational component of Summit Learning is that students demonstrate competency on standards-aligned Content Knowledge across all core subject areas. Content Knowledge includes a set of vocabulary, ideas, events, concepts, properties, and details related to a given academic discipline.

“...students are given choices how they learn content through a playlist of resources.”

– Stacey Perez

On the Summit Learning Platform, students independently progress through playlists of resources, mastering content across all core subject areas. Students take on-demand assessments when they are ready, rather than with the entire class at the same time. Tests can be taken multiple times until students demonstrate mastery. This student-directed acquisition of Content Knowledge accounts for 30 percent of a student’s grade.

Students are placed at the center of their learning journey, empowering them to set goals, understand how they learn best, and deeply understand content as a result.

There is substantial evidence in learning science that Content Knowledge supports and enables critical thinking (Willingham, 2009; Schwartz et al., 2016). The acquisition of basic familiarity with the language, details, procedures or terms of a given discipline, and the retention of that knowledge in long-term memory aid the fluency and expertise with which individuals can practice a given discipline moving forward. Cognitive scientists have demonstrated that having specific Content Knowledge in a given discipline accelerates mastery of the subject (Schwartz et al., 2016).

In the field of reading, for example, several studies have shown that background knowledge on a specific topic helps readers regardless of overall reading comprehension ability. In one such study, researchers compared middle school students who had tested as either “good readers” or “poor readers” on a standardized test of reading comprehension. Teachers then introduced a reading passage about American baseball to both groups. The teenagers who had previous background knowledge and expertise related to the details of baseball scored higher on the reading comprehension test regardless of whether they had been considered poor or good readers more generally (Recht & Leslie, 1988). Multiple studies have confirmed similar findings on the importance of background knowledge to the process of learning (Brown, Roediger & McDaniel, 2014).

### Personalizing Project-based Learning

“We all know that for students, one of the best things about school is engaging in projects that help you explore your passions and interests, and enable you to apply the content you’ve learned to real-world scenarios,” said Dr. Stacey Perez, Principal at Classical Academies. “With over 200 rigorous projects, students develop the cognitive skills necessary to be successful in college and beyond. Skills like critical thinking, problem-solving and decision-making. During Project Time, teachers are able to use their expertise in their given subject area to help students understand complex, real-world problems and support them in creatively thinking about how to engage. Teachers facilitate discussions in the classroom, coach students in applying their cognitive skills, and give students feedback.”

Classical Academies designed the Passion Project to help students ignite their passions and



turn that passion into an in-person presentation for both online and in-seat students. Using an “Essential Question,” students answer, “How can you use your interests, curiosities, and passions to contribute to your community and better yourself?”

**Project Description:** If you could design your own school day, what would you learn, do, and create? In this project, you will be given an opportunity to explore what it is you want to accomplish in your own life, right now. You have done many projects in school and now is your chance to design your own, including making goals, tasks, checkpoints, and deadlines. How do you want to channel your passions, talents, and curiosities to execute a professional project idea? This is a once-in-a-school-time opportunity to think about who you are and how you can be a part of your community, making a contribution that is uniquely yours. So, what will it be?

In the Passion Project, you will build a number of your communication skills by better formulating your ideas and sharing them in writing and speaking. First, you will prepare a pitch to present your project to your peers for approval, then, you will keep and update a blog, sharing your progress with pictures and multimedia, and finally, you will present your findings in an oral presentation designed with inspiration from TED Talks. This project is yours, and it is whatever you make it! Make it powerful, profound, and amazing!

“If you look around, you will notice that people everywhere are already doing passion projects,” said Perez. “For instance, a Yale Law School graduate and law clerk for a Supreme Court justice quit her job and then later spent a year of her life researching what it means to be happy; she now keeps a blog and podcast on the subject. Her name is Gretchen Rubin and she is the bestselling author of *The Happiness Project*. There is also the example of a bond trader in Chicago who lost his job and then started studying photography, setting a goal to photograph 10,000 New Yorkers. His blog and Facebook page were eventually made into a book, *Humans of New York*, which remained on the nonfiction bestseller list for over a year. These people became famous and successful in doing what they love because of their excellent skills in communication, and that is what English is all about.”

### Always in Beta Mode

“We want students to live and share their own story. We are not looking for the story that others have created for them. We want students to come into our program, exactly where they are and where they have been, to find a loving, caring, and nurturing high school environment where they can find academic, social-emotional, and life-long success.”

“Beta mode means Classical Academies is always searching for new ways to empower our students,” said Perez. “We’re trying something new and we’re being successful at it. We see the positive impact in how our teachers are engaging students, and how our students are thriving academically.” ■

“Tests can be taken multiple times until students demonstrate mastery.”

– Stacey Perez



# Are your teachers and students prepared for the personalized classroom?



Teacher readiness for digital and personalized learning	Student readiness for autonomous learning environment	Digital curriculum readiness																		
<p>Teachers are...</p> <p><input type="checkbox"/> Fully Prepared</p> <p><input type="checkbox"/> Somewhat Prepared</p> <p><input type="checkbox"/> Not Prepared</p> <p>for their new roles in a digital/personalized classroom</p>	<p>Students:</p> <table border="1"> <thead> <tr> <th></th> <th>are proficient</th> <th>need support</th> </tr> </thead> <tbody> <tr> <td>Goal Setting</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Time Management</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Perseverance</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Decision Making</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Digital Literacy</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>		are proficient	need support	Goal Setting	<input type="checkbox"/>	<input type="checkbox"/>	Time Management	<input type="checkbox"/>	<input type="checkbox"/>	Perseverance	<input type="checkbox"/>	<input type="checkbox"/>	Decision Making	<input type="checkbox"/>	<input type="checkbox"/>	Digital Literacy	<input type="checkbox"/>	<input type="checkbox"/>	<p>My district has a fully implemented digital curriculum for all subjects <input type="checkbox"/></p> <p>My district uses some digital curriculum and assets <input type="checkbox"/></p> <p>My district does not have or use digital curriculum <input type="checkbox"/></p>
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