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THE MARRIAGE BETWEEN ACADEMICS & TECHNOLOGY:

A **Blueprint** For Creating **Powerful** Partnerships

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In collaboration with The RTM National K-12 Advisory Board

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Objective of this Blueprint:
Raise the awareness of the natural silos that have historically existed between departments, specifically between academics and technology and the solutions for breaking down these silos to increase maximum learning opportunities for students.

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Introduction

Historically, the majority of work in technology departments was in support of the "business" of schools and departments because that is where the bulk of the technology was being used. These technology departments supported payroll, transportation, nutrition services, human resources, etc., and ensured the smooth operation of all programs, software, and network infrastructure. In the early days, teachers' access to technology emerged in the form of a desktop in each classroom and technology departments responded to support these needs. As technology evolved and computers began to get smaller and more mobile, technology devices began to increase in the classrooms. With the advent of cell phones, iPads and other tablet type devices, a shift began to happen. In the earlier days, technology was primarily a tool that teachers used. With the introduction of more affordable technology devices, students began to use those devices at home and over time, began to expect to use those devices at school. As teachers were offered professional development on how to use technology in a meaningful way in the classroom, district silos between the academics and technology departments became more evident. Seemingly overnight, the culture and practice of the technology department changed from supporting business applications and hardware, to supporting student devices and software.

It was also a major shift in focus for the academics department. Traditionally, academics had very little to do with technology other than use it for business or operations (gradebooks, curriculum housing, etc.). With initiatives like laptop carts, personalized learning, blended learning, etc., the academics department was suddenly thrust into a world that was unfamiliar to many district level staff who never worked in a classroom where technology was immersive for students. For technology initiatives to be successful in today's world of immersive technology, academics and technology must find ways to create a powerful, lasting partnership!

Root Causes of the Divide Between Departments

Root Cause #1: The rapid change in technology

Educators today clearly remember a logical point in education where technology did not exist in classrooms. Although this was nearly three decades ago, many educators today still remember that time when teaching and learning and technology existed independently. In some cases, that may still be the norm. In fact, many teachers in those days had no reason to interact with the technology department. When the internet first became affordable to schools and common households, the rapid acceleration of technology drastically transformed the classrooms that exist today. It's hard to believe that the iPhone debuted in 2007, just eleven years ago (at the time of this publishing). Most adults have a hard time remembering a time without the iPhone! Since then, technology has evolved at a meteoric pace, much faster than many districts and educators were able to keep up with. Many district departments were so focused on keeping up with the rapid changes, that silos became even more isolated because of a lack of intentional partnerships and collaboration.

Root Cause #2: The Shift from Teacher Centered to Student Centered Technology Use

When technology was introduced into the educational arena, it was originally thought of as something that not everybody needed and certainly not something that everyone wanted. Many people, in the early days saw no future for the internet. Perhaps few people truly saw the future of how the internet, a connected world and technology would shape education and ultimately our world. In most classrooms, a teacher had a desktop to use for email, grades, etc. As technology advanced, it was viewed as an accessory to use for special projects, not as an essential part of teaching and learning. There was a logical separation from instruction, and it was occasionally used as a remediation or acceleration tool. In most cases, the academics department was not involved in these decisions and certainly did not lead the effort in most districts.

Root Causes of the Divide Between Departments

Root Cause #3: The Evolution of Technology from Personal Use to Educational Use
With the rapid evolution of technology, the learning industry in schools "grew up" with technology as an add-on. The traditional use of technology was teacher-centered, whereas the more modern classroom includes learner-centered practices. Over time, as technology and classroom tools evolved, technology became more ubiquitous. As devices began to saturate homes for personal use, students and parents began to demand the use of technology in schools and over time, students began to use digital content earlier and earlier in their school years.

There was a shift in "you can use this tool to do this as an extracurricular activity on the side", or "if you do well in class, you get to use technology as a reward", towards it being an integral part of the learning experience for students. This transition happened because students became more digitally nimble. The current generation in schools today have grown up with technology and do not know a world without its existence. This has a significant impact on the way we must educate students. At the district level, this shift has resulted in the use of technology to supplement curriculum and to remediate and enrich. This new shift requires an immersive approach to the classroom where students are shifting from the passive use of technology to a more active use of technology to curate and create content. The academics department needs to understand what tools will help students reach the higher levels of technology use and the technology department needs to understand the critical role these tools play in the development of higher order thinking skills so they can adequately support them.

Root Cause #4: Knowledge Gaps
Chief Academic Officers and Chief Technology Officers typically have very different backgrounds. It is increasingly more common for the CTO to come from an industry or business background with little to no K-12 education experience. The CAO typically does not have a deep background in technology and has moved up through districts focusing on curriculum and instruction. This diversity in backgrounds can result in different languages, a lack of understanding of each other's roles, varying priorities and power struggles. This lack of common understanding can result in frustrating experiences, lack of trust, too much focus on the tool and not enough focus on the learning. Therefore, it is imperative that the CAO and CTO work hard to build a symbiotic relationship in order to meet objectives that impact both technology and academics.

The Role of the Chief Academic Officer (CAO) in Merging Curriculum and Technology

Over time, the need for a leadership position to unite academics and technology emerged. During this transitory period, leaders working at schools, for the most part, were people who did not grow up using technology. There was a mindset in place that "if traditional education was good enough for the previous generation, it is good enough for students of today". Most people realize that mindset was deeply flawed. But because that mindset was prevalent in many places, teachers, administrators and ultimately district leaders had no functional skill set in using technology in strategic ways to support and elevate student learning. While that mindset still exists in pockets today, most educators realize they are preparing students for a different world than that of previous generations. We are no longer preparing students for the "factory world". We have the challenge of preparing students to be adaptable. The technology that exists today will seem archaic by the time elementary students today graduate from college. Their ability to adapt, critically think and solve problems will literally determine whether they survive in the 21st century workplace.

As teachers became savvier, and schools began to request the purchase of technology for student use, the academics department in most districts was caught off guard. Unfortunately, because many staff in the academics department did not grow up with technology in their classrooms, this new world was foreign. In many districts, the technology department ended up driving technology initiatives because they understood the technology. The academics department ended up taking a back-seat role and not leading those initiatives. In the onset, this may have seemed like a good idea. However, one major unintended consequence emerged. Initiatives led by the technology department ended up focusing on the technology, which resulted in the learning (academics) taking a back-seat. One district administrator reflected on their first one-to-one initiative which was led by the technology department because the academics department had little to no knowledge about technology. After three years, district administrators were dismayed to see that learning had not changed. Upon further reflection, they realized the entire initiative was focused on the device, not the learning. A reboot of that initiative was led by the academics department several years later, and a shift occurred. The topic and focus of conversation were on the learning and the device as a tool to support that learning. Sadly, that was not an isolated occurrence and still happens even today. Many technology initiatives today fail because the focus is on the technology device and not the learning that devices can support.

Another unintended consequence was the disconnect between academic specialists at the district level and the teachers they support. As teachers became more comfortable with technology, they began to integrate it in a more meaningful way. However, district curriculum or academic specialists were quickly left in the dark when it came to technology. As mentioned before, many of them taught in classrooms at a time where technology was non-existent. This massive change in educating students with the power of technology was not only intimidating for many, it was often misunderstood. In many districts, this results in a widening gap between teachers, district level specialists and technology staff.

The Role of the Chief Technology Officer (CTO) in Merging Curriculum and Technology

The technology department needs to understand that the core mission in every district is about the business of educating students. The technology department cannot be the tail wagging the dog, and must support the district goals for teaching and learning. If districts do not make this fundamental switch, technology directors will become ineffective and isolated. It is critical in today's world to align curriculum with technology so silos between those two worlds can begin to disintegrate.

It is illogical to have separate technology and curriculum projects. Take, for example, a project where the technology department is installing a number of new wireless access points in schools. At first glance, and in many districts, this would immediately be looked at as a technology project and initiative. Academics would know little about wireless points as that is a hardware issue. However, wireless access points are not just hardware. They are literally the gateway to how students access knowledge, resources and information. It is about children having dependable and reliable access to learning. Less latency and faster response time on tablets mean greater access to broadband in order for the students to learn. When these ideas are synchronized, the power of technology and the power of learning are exponentially improved in ways we have not totally explored yet. We may be on the cusp of fully realizing the power of technology-enabled teaching and learning. Technology departments who simply purchased access points without consulting with the academics departments made a critical mistake. They didn't collaborate with academics to find out where they were going with digital content, how much bandwidth would really be needed and what type of software would ultimately be used. The ultimate result was brand new access points that couldn't keep up with the demand even days after they were installed sometimes.

To ensure the example above is not the norm, one of the approaches some districts employ to encourage collaboration is flattening the organization and ensuring that every person knows their core principles. Every district has a strategic plan, mission, vision, beliefs, values, etc. But do all members of the organization know the "why" of the organization and the core tenants? Most mission, vision and core values are written for strategic plans. However, they should be simple enough so that everyone understands that everything departments do should be in support of that mission, vision and core values.

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The Role of the Chief Technology Officer (CTO) in Merging Curriculum and Technology

Without a flat organization, it is difficult for districts to be agile and responsive. A flat organization means suspending hierarchy at times, challenging each other, and creating a psychologically-safe environment that fosters collaboration and risk-taking. Technology and curriculum leaders need to know they can talk things out openly and candidly without worrying that one person is in charge of the other. This is critically important because the stakes are high. New curriculum is being pushed out at a breakneck pace, and teachers are preparing students with the skills for a future economy. Technology and curriculum leaders both need to work hand-in-hand in ensuring that students are being trained on these new skills they are going to need in order to thrive in a digitally rich environment.

Any initiative at district level has to be aligned across departments. There are few districts in the country not currently in the midst of some type of technology initiative. Whether it is 1:1 rollouts, carts in classrooms, personalized learning, blended learning or something else, everybody needs to be at that table because ultimately, it will impact every department in the district.

Moving forward, it is even more important that academics and technology operate close in step with each other to ensure things run smoothly. Things like device or network downtime impact instruction. Teachers who have to spend all their time troubleshooting devices or finding other ways to teach because software or an interactive display isn't working will quickly become frustrated with technology. District leaders in the academics and technology departments both need to be at the table to solve those problems so that systems level solutions can be implemented.

The CAO and CTO Partnership

As mentioned before, the structure and expectations for collaboration must come from the top as a leadership imperative. A digitally savvy superintendent pulls different departments together in different ways to create a learning organization that encompasses technology as a tool, and learning goals met by both technology and curriculum alike. By modelling this level of collaboration at the top with senior leadership, the expectation should be that the collaboration filter down to multiple levels. In too many districts across the country, the silos still exist between departments which ultimately creates disjointed initiatives and confusing communication to stakeholders.

It is abundantly clear that there has been a communication dysfunction in the natural silo-ing of academics and technology. As technology has become more prevalent and more accessible, students have acquired high digital skill sets, and their brains are wired differently. The youngest students are adept at using many technology tools as parents give students a phone or a tablet at an early age to keep them entertained or enhance their learning. What has transpired is part of a constructivist learning environment. These students are now building their own knowledge. The trend is that students are starting to come to school with their own notion of what they want to learn and how they want to learn. This new knowledge and ownership for learning that students possess has a profound impact on academics and technology, thus requiring a new working relationship between those two departments.

As more opportunities are available for school choice, it is more critical than ever for the academics and technology departments to have a united front. Whether districts have school choice between local schools, magnets, charters, or fully online programs, there becomes a sense of competition for all schools to be relevant, to be anchors for students and parents who are much more demanding than they were ten years ago. Schools are faced with the dilemma of becoming more relevant when it comes to teaching soft skills and technology skills necessary for students to be successful in the 21st Century. This requires communication and collaboration between academics and technology.

As teachers shift their practices to a more student-centered approach, academics and technology often clash. For example, most districts have a process for teachers to request a website to be unblocked. While this seems like a simple process, it's actually more complicated than it first appears. Best practice would dictate that the academics department first review the site for curriculum/learning value. However, the technology department should also be involved to ensure that the site is safe for students and the district network. Many teachers do not understand that SPAM and other dangerous threats lurk beneath many websites. This is one practice where the technology and academics can collaborate to ensure that academics and innovation is not squashed while protecting the overall safety of the district. Traditionally, in many districts, the technology department owns blocking and unblocking website and academics is not involved.

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The CAO and CTO Partnership

Routine processes and procedures need to be developed so they become a "habit of work". For example, if school administrators discover a piece of software that may work for them, it should be a planned process to engage various directors and consultants across schools and the district to investigate the suggested software together before they purchase it. Does it fit into the curriculum? Does it fit the state standards? Is the program secure and does it meet defined data privacy standards? Do ports need to be opened? It is necessary to initiate a conjoined collaborative conversation about not just the IT part of the work, but the teaching and learning potential.

A "habit of work" approach in place brings about this process naturally and sustains the district-wide efforts beyond the point when a new superintendent is selected, or a new CTO or CAO is named. These are mandated processes and procedures that once put into place merge the thinking and planning across departments. This needs to be documented as part of the district's structure. When you create those structures that become institutionalized, there is no risk of faltering, and sustainability is assured.

A strong partnership between the CAO and CTO will also filter down to other staff within those departments if it is modeled correctly. Collaboration is critical for initiatives on both sides of the departments, even on initiatives that may seem solidly more academics or more technology. For example, a single sign-on initiative may seem like a technology initiative. While it may be led by the technology department due to the technical nature of the project, the ultimate end user of a single sign-on system is a student and/or a teacher. The academics department would have a big role to play in helping make the decision of which system to implement. The academics department would have a lot of valuable input when it comes to usability of the solution. If the system is cumbersome to use, teachers and students will become frustrated and the system will not be used. Many districts establish committees for system-wide purchases. These committees can include teachers, principals and representatives from both the technology and academics departments. This strong collaboration will result in buy-in for all stakeholders. Conversely, if the academics departments is procuring a new curriculum management system, technology representatives should be on that committee to ensure it will work on the network, can be maintained within reasonable work expectations, can be supported, etc.

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The CAO and CTO Partnership

There are several examples that have forced the CAO and CTO to become more collaborative. Personalized learning was a game changer for many districts. For many, this was the first-time academics and technology departments truly had to collaborate together. Some districts made the mistake of having the technology department lead the initiative because they had the most knowledge about technology. However, the key success of personalized learning is not the devices students have, but the learning that can take place as a result of having the tool to access information and creativity content that were not possible before. The hardest part about a personalized learning initiative is the teaching and learning change required to truly leverage the power of technology to increase rigor and the critical thinking skills students need to possess today.

In a technology rich environment, curriculum has to be re-written to support a digital environment and teachers have to be trained on how to best use technology as a tool to power learning. Many districts tried to take on this massive effort without a strong partnership between technology and academics being established, and in many cases, these initiatives failed. Nearly every critical component of a personalized learning initiative, from choosing devices, managing inventory, creating projects that use technology, etc., require a partnership and shared decision-making between technology and academics. If this partnership does not exist, the initiative will be disjointed and ultimately will be difficult if not impossible to succeed.

For many districts around the country, a catalyst that forcibly brought the academics and technology departments together was the advent of online, high-stakes exams, driven by the Common Core/Smarter Balanced/PARCC movement. While not necessarily the best reason, it was one of the first times for many districts when the technology and academics departments needed to collaborate. Since then, people have become more acquainted with this "arranged marriage", and like any marriage, it takes constant work to be successful.

It is important to note that there is a difference between collaboration and partnerships. Collaboration can be a one-time thing, while a partnership tends to be a lasting relationship of constant collaboration. In some cases, for districts just starting to break-down silos, collaboration is the first step. Eventually, if done correctly, those collaborations turn into strong partnerships. However, that requires willing CAO and CTO staff to recognize the power of collaboration and work to foster those relationships.

Establishing a Culture of Collaboration

Establishing a true culture of collaboration starts at the top. The superintendent and his senior leadership set the example for how collaboration works (or doesn't). While this collaboration should be strong across all senior leadership positions, it is critical in today's age that technology and academics have a strong partnership due to the technology-rich classroom environment that exist today.

What the technology department wants the curriculum department to understand:	What the curriculum department wants the technology department to understand:
• Interoperability needs • Automation of systems and process • Manpower to handle education resources • Tech is not a one-time purchase • Technology is a tool, not a learning outcome • IT/integration timelines, projects are complex	• Pedagogy and curriculum • Help remove barriers • Understand the "why" of the ed tech resources • Support teachers • Help with training • High demand for educational content • Accountability expectations

Creating a culture of collaboration and innovation requires risk taking. Risk taking requires a culture of trust. If something fails and the go-to response is to point fingers and assign blame, then innovation will quickly die. When something fails, the response should be to find out why the failure happened with the goal of preventing future failure. A culture of finger pointing and blame breeds an environment of tearing down team members instead of creating a culture of shared success. Invest in each other's success instead of contributing to their failures. In order for this true collaboration to take place, a space and structure must be established for the collaboration. Once the structures are set up for departments to communicate and collaborate, people will do it more frequently as they become more comfortable with it and see the long-term benefits of shared leadership. Ultimately, more time may be spent planning up front, but less time will be spent troubleshooting and solving problems because of a lack of collaboration.

There are many examples of structures that can foster collaboration. One district in California established the Local Control Accountability Plan (LCAP), which serves to build unity of purpose, as it requires input from multiple stakeholder groups. This structure allows for collaboration and brings all departments together. They have implemented the International Society for technology in Education (ISTE) Standards as a bridge between academics and technology. The standards are used in planning joint professional learning offerings.

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Establishing a Culture of Collaboration

In order for true partnerships to develop, both the academic and technology departments need to understand each other's departments. This cross-department knowledge is critical in order to understand perspectives on both sides. While much of this knowledge will be gained over time as the partnership between the departments strengthen, organizations such as the Consortium for School Networking (COSN) and various state and national organizations offer coursework and certifications for technology professionals that prepare them for the position of CTO and the changing roles implied by these new titles. These programs not only have the traditional coursework on topics such as data management, security, infrastructure, etc, these programs also have a big focus on curriculum, assessment, lesson design and other topics to help leaders build a deep understanding of teaching and learning. Additionally, curriculum and learning leaders' roles have shifted in title to Chief Academic Officers and other similar titles that reflect more inclusive job responsibilities in the areas of teaching and learning. In this spirit, job descriptions and responsibilities are morphing to reflect a closer collaboration approach that is no longer implied, but required.

Community & Parental Engagement

Anytime a large-scale initiative is taking place, community and parents must be informed. It is critical that the CAO and CTO have a shared understanding of the initiative, including the "why" so both can answer questions from the community and parents. All senior leadership should be fully aware of the why and the details of an initiative so clear communication can take place. The CAO and CTO can help draft the talking points for the communications department to create communication content such as videos, flyers, posts, and other media releases. There are many products on the market that can help districts to get the right messages out to all stakeholders.

The CAO and CTO partnership is even more critical when it comes to supporting principals and teachers around a large-scale initiative. Again, if all members of the senior leadership understand the why and a strong partnership exists between academics and technology, support to the schools can be clear with the same message being sent by both departments. The major points of of an initiative should be clearly articulated by both the CAO and CTO. A perfectly aligned initiative should blur responsibilities between the CAO and CTO to stakeholders.

There are many ways to get community buy-in and engage the community around large-scale instructional initiatives powered by technology. Creating a climate of trust is critical for every district. Inviting parents and the community at large to parent nights, listening sessions, tech nights, student showcase nights, digital safety nights, etc., are all ways to create a positive climate. A robust digital plan includes powerful communication strategies that leverage social media to help keep the community informed.

The Roadblocks to Collaboration

There are several roadblocks districts encounter when trying to establish a strong partnership between the academics and technology departments. These roadblocks are not insurmountable, but they have to be named in order for districts to start making steps to
overcome them.

Roadblock #1: Egos and Power Struggles
One of the roadblocks to a successful academic and technology partnership is the egos and power struggles in the room. In order for initiatives to be successful, a shared leadership model is essential. When success happens, it should be the success of the group that is celebrated rather than the success of an individual. Consequently, when failure happens, the failure should be team-owned. If we can learn from those failures instead of spending time pointing figures and casting blame, more time can be spent finding solutions to problems. Egos and power are part of any organizational structure, but one needs to be aware of that in order to move forward. We need to know that this can be a barrier to collaboration.

Roadblock #2: Technology-Driven Initiatives
There was an instance where technology was offering all the solutions: the device type, this app, this timeline etc; and the academics department was expected to fall in line. Unfortunately, this approach fails most of the time because academics has no buy-in.

On the other side, academics department trying to dictate how the personalized learning plan is to be rolled out without consulting technology (IE: how they plan on delivering the material, rolling out devices, etc.) can also quickly fail or cause deep tensions between departments because there may be serious issues in doing what the academics department is recommending.

Roadblock #3: Communication
In some districts, the biggest roadblock is communication. The academic and technology departments need to understand what their role is (and the "why") when it comes to any joint initiative. To support sustainability and clear communication, top level administration must first be able to articulate the "why" behind the initiative. Once established, that why must filter across departments and ultimately to all stakeholders it impacts. A lack of communication between the technology and academic departments is common across many districts where initiatives fail.

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The Roadblocks to Collaboration

Roadblock #4: Structure

Structure can make or break an organization. There is no one structure that fits for every district and every district must find the structure that works for them. For example, in the last decade, many districts began to hire instructional technology specialists. These specialist's main job was to help teachers integrate technology. Across the country, these people report to the technology side or the academic side. Their role is tricky because it is a mix between technology and academics. Regardless of where they report, there must be strong communication between the two departments, so they are not providing misinformation to teachers about curriculum or technology.

Roadblock #5: Time

Time is always an issue in districts. There never seems to be enough time to attend all the meetings required and get the work done! If the CAO and CTO do not make time for the critical conversations and relationship-building necessary to be successful, more time will be spent working through communication issues, hurt feelings and failed initiatives. Setting up a regular time to collaborate and align leadership focus is critical for a well-functioning district office.

Technology and Academics Partnership Impact on Student Learning

If a strong partnership exists between technology and academics, it can have a lasting impact on student learning. A strong partnership will create a more unified vision resulting in clearer communication around initiatives and technology's role in teaching and learning. Having a clear vision at the senior leadership level, specifically between academics and technology, will set the stage for a successful implementation.

With any initiative, problems will certainly arise. Part of a successful partnership between academics and technology includes the establishment of norms for how problems are solved. For example, one method may be to use the design thinking process. [1] The design thinking process involves building empathy for the problem first, then ideation, prototyping, refining, testing and rebuilding. This procedure will follow the working processes to explore the problem itself before solving it. It's a tendency among department leaders to offer a quick-fix, a knee-jerk "Here is the solution" to a particular problem. There is a danger here in the "if all you have is a hammer, everything looks like a nail" fallacy.

The design-thinking framework is effective, even if an outside facilitator is needed the first time to model and train on the process. Once you have a solution, remember to refer back to "does this solution follow our core values?"; "does this solution follow our desired outcomes?"; "how does this solution impact the student and our understanding of our graduate learner profile?" The focus should be on those key questions to ensure alignment to the district vision. A great starting point for a design thinking session is "why schools?". Once leaders become more familiar with the design-thinking framework, they will be able to run the process without a facilitator.

Academic and technology department leaders should collaborate on criteria as part of this process before even choosing new tools and platforms. A single sign-on solution may be thought of as a technology choice, but there are many options available. However, if the academics team is not at the table, the technology staff may not see the whole picture. Having both sides of the house together to make those decisions will ensure a more successful initiative. For example, IMS Global and OneRoster certified products should be the norm today. Using technology to manage and securely automate the process helps eliminate some of the barriers to learning. Using a single sign-on solution such as Classlink [2], helps address what would otherwise be time lost to logging into different systems. Administrators, staff, students and teachers are better able to access what they need (gradebooks, digital content, or a data warehouse) without multiple frustrating attempts to guess their password and then getting locked out. Significant time is wasted by teachers continuing to reach out to tech support staff to reset systems or passwords. This solution also eliminates the behavioral vulnerability that comes from someone having so...

[1] https://designthinkingforeducators.com/design-thinking/

[2] www.classlink.com

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Technology and Academics Partnership Impact on Student Learning

... many passwords that they actually write them, and may leave passwords written down in public view, which can result in a major data breach. The RTM blueprint, *Data Security & Privacy: A Blueprint for All School District Leaders* [3], discusses this issue in great detail.

Using technology to manage technology captures learning efficiencies in ways that we have not been able to do before. Having just one password, and all your learning resources at your fingertips in one dashboard, gives you more teaching time, and for your students, more learning time. For administrators, this means more leadership time. With the massive use of technology and technology-enabled systems in school districts today, it just makes sense to have this in place. An SSO solution assures that teachers do not have to walk around a classroom to log onto computers for every student who cannot remember their password.

Collaboration is not just for district leaders. It is important that school leaders are part of gathering critical stakeholder input. Having principals and teachers involved, as well as other staff in the technology department, will assure input from district participants that depend on the technology and curriculum partnership's success. Another strategy might involve creating model classrooms featuring flexible furniture, large format displays (LFDs), and district-standard devices and software. The model classroom's purpose is to demonstrate the effective use of technology resources for curriculum enhancement purposes. Additionally, these model classrooms can be used for professional learning opportunities. This type of a centralized, shared learning environment enhances unity of purpose between academics and technology and provides opportunities to evaluate hardware and instructional software in a relevant teaching and learning environment.

Communication between academics and technology enables shared due diligence for evaluation of platforms from a curriculum standpoint. For example, if curriculum staff are engaged in comparing math platforms, it is wise to bring technology into the conversation early on in the process. If academics is adopting a platform that does not work with the district's rostering plan such as OneRoster 4, they have just created a silo because the tech department may not be able to manage that platform. This means the tech department cannot roster those kids and put them where they need to be, as they are not pulling from the same data centers. Most likely a person from student services or the teacher is going to end up having to manage that platform, manually adding and removing students, which is not an efficient process.

[3] https://rtmbusinessgroup.com/rtm-blueprint

[4] https://www.imsglobal.org/activity/onerosterlis

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Technology and Academics Partnership Impact on Student Learning

This interoperable philosophy allows districts to automate in the most safe and secure method possible. A key role of the CTO is to remove barriers to instruction. If you create a splash page and every student needs to use that splash page to log onto the network, and that splash page hinders access to platforms and frustrates the user, then you have now created a barrier between the student and the curriculum. Curriculum staff members need to know when a certain platform is creating more work for technology, adding barriers for students, and it is not sustainable. Academics needs to understand and respect that interoperable platforms allow for automation, which removes those barriers.

Districts have the responsibility of making sure that platforms work in a way that protects students' Personally Identifiable Information (PII). This can often be a major pinch point between academics and technology. When adopting education platforms, both sides need to be present when solution providers/ textbook publishers showcase their products. Both sides must be a part of the educational resource adoption process.

Assessment platforms connect curriculum and technology in that they provide real-time feedback in ways that have never been able to do before. These assessment tools provide timely feedback and help educators make informed decisions that make it possible to determine if students have gained mastery of content or if remediation is necessary. Academics and technology should work hand-in-hand on adopting and maintaining these assessment platforms.

Many software programs allow teachers to focus instruction and re-teach in an engaging and relevant way in remedial cases. You cannot achieve this without technology. Should you have a first grader who is really struggling to master something, they can be given the opportunity to work with software for early literacy instruction and those initial concepts can be re-taught over and over in different ways. The software analyzes their answer and poses another problem that is more suitable. Software can help in areas like algebra, where students have to grasp advanced concepts, until students achieve real mastery. A teacher has a whole classroom, so they cannot sit with one child and teach that child in different ways, as that is not feasible. Before technology, for this reason, many children were left behind. This is evidence of the equity that technology provides in terms of learning opportunities.

Professional Development

In order to create a healthy, productive relationship among technology and academics, districts should offer numerous and varied opportunities for professional learning for staff. This can include coaching, face-to-face professional learning, and the use of online platforms. Academics and technology need to ensure that the teaching, learning, and technology aspects of these trainings are not treated as separate.

Likewise, academics and technology need to ensure that all stakeholders are participants in professional learning. Districts should also involve their classified staff and unclassified staff whenever possible, and make sure they feel included and understand the desired outcomes. Most often, a school's classified staff live in the surrounding community of the school and often have children that attend these schools. Involving classified staff in these professional learning opportunities can be vehicle for communicating our educational goals and curriculum efforts to the community.

Creating collegiality and professionalism across all barriers allows for buy-in from the entire staff. People are less likely to burn a system down that they built. When systems burn down it is because you did not invite the people in the building. This mentality needs to carry over into your organization.

Districts should ensure that professional learning on educational technology platforms/applications goes far beyond the "how to" and focus on the "why". Training should focus on Technological Pedagogical Content Knowledge (TPACK)[5] to include Pedagogical Content Knowledge (PCK), Technological Pedagogical Knowledge (TPK), and Technological Content Knowledge (TCK). Similarly, professional learning on educational technology platforms/application should help build an understanding of the Substitution, Augmentation, Modification, Redefinition (SAMR) model [6]. This will allow educators to design lessons in which students build a deep understanding of concepts rather than just knowing how to use platforms.

Many conferences around the country now offer opportunities for the CAO and CTO to attend jointly. This allows both parties to learn about each other's departments. It allows for stronger collaboration and stronger knowledge to better foster communication and understanding when planning and implementing initiatives. The RTM group offers successful events each year for the CAO and the CTO to participate in joint learning opportunities together.

[5] http://tpack.org/

[6] http://www.schrockguide.net/samr.html

(continued)

Professional Development

When the academics and technology departments form a strong partnership, innovation can happen. Many districts are encouraging innovation, which serves as an opportunity for further dialogue between academics and technology personnel. An example of innovative practices is happening in a California school district, where they have completed a year-long book study based on The Innovator's Mindset by author George Couros [7]. One of the district's strategies to foster innovation is called "Goldfish Bowl", which is largely based on the popular TV series Shark Tank. In this competition, teams of students and teachers vie for monetary awards to support their innovative projects. Interested teams submit applications under specified criteria. Applications are screened by executive leadership members, which includes representatives from academics and technology. The projects are pitched to a group of Goldfish (AKA Sharks), which represent local and regional entrepreneurs, and celebrities. Winning projects have included proposals for virtual reality applications in low socio-economic environments.

When district departments are working together seamlessly, it opens up many doors for collaboration, innovation and sustained practices. Eliminating the silos and power bases that exist in many school districts between departments creates opportunities frequently unimagined in a traditional sense. With strategic collaboration, the work of the district in service to students can benefit communities and build stronger, more effective learning organizations.

Conclusion

Students are at the heart of every district's mission and vision. The core values of a district are ultimately centered around student outcomes and success. The stronger the collaboration between academics and technology (and ultimately all district departments), the more aligned the mission and vision will be. If the technology and academic partnership does not exist (or exists only in name), then those silos will ultimately impact the classroom in the form of unclear communication, a confusing mission/vision or a lack of purpose. Integration is difficult for many teachers and administrators. The work is hard and, in many cases, the buy-in is difficult to get from more traditional teachers and administrators. However, the more the CTO and CAO model collaboration, understand each other's core values and departmental operating principles, and form a true partnership for collaborating around the core mission and values, the more likely it is that the initiatives will be successful. Our parents, students and communities deserve and expect a 21st century school district that truly uses all of its resources to prepare all students for not only the world that exists today, but for their future which is certainly unpredictable.

[7] https://georgecouros.ca/blog/

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Reference Framework

Area for Consideration	Guiding Questions	Essential Conditions	Action Items
Root Causes of the Divide Between Departments	• What are some of the reasons collaboration does not happen between academics and technology?	• Shared goals • Shared mission, vision, and values	• Cross-departmental planning
The Role of the CAO in merging curriculum and technology **The Role of the CTO in Merging Curriculum and Technology**	• How can the CAO bridge traditionally disparate departments?	• Shared understanding of the role of technology in the teaching and learning process	• Provide opportunities for collaboration • Provide systematic communication • Model collaboration • Professional development centered on learning more about each other's department • Unite departments for classroom walk-throughs
The CAO and CTO Partnership	• What processes and structures can be established to foster collaboration and build a lasting partnership?	• A willingness to collaborate between departments • A habit of work approach to collaboration	• Model collaboration • Open and transparent communication • Common vision around the work
Establishing a Culture of Collaboration	• How do you create a sustainable partnership between academics and technology?	• Leadership imperative from the top	• Establish structures for collaborative work to take place between the CAO and CIO • Set up structures for staff under the CAO and CTO to collaborate on cross-department initiatives
Community & Parental engagement	• Do you offer opportunities for parents/community engagement?	• Opportunities for engagement • Clear communication	• Create opportunities for engagement • Communicate to community/parents • Develop common talking points
The Roadblocks to Collaboration	• What roadblocks currently exist that need to be named and eliminated?	• Shared leadership model • Build buy-in • Communication	• Opportunities for collaboration • Regular communication
Technology and Academics Partnership Impact on Student Learning	• How would a strong partnership between academics and technology impact student learning in the district?	• Problem-solving protocols • A culture of shared responsibility for successes and failures • Strong communication between departments	• Communication protocols • Structures for regular updates, projects, and future initiatives
Professional Development	• How does professional development increase knowledge and capacity between the academics and technology department	• Relevant professional development for the CAO and CIO	• Opportunities for the CAO and CTO to learn and collaborate together around professional learning opportunities (CoSN, ISTE, etc.)