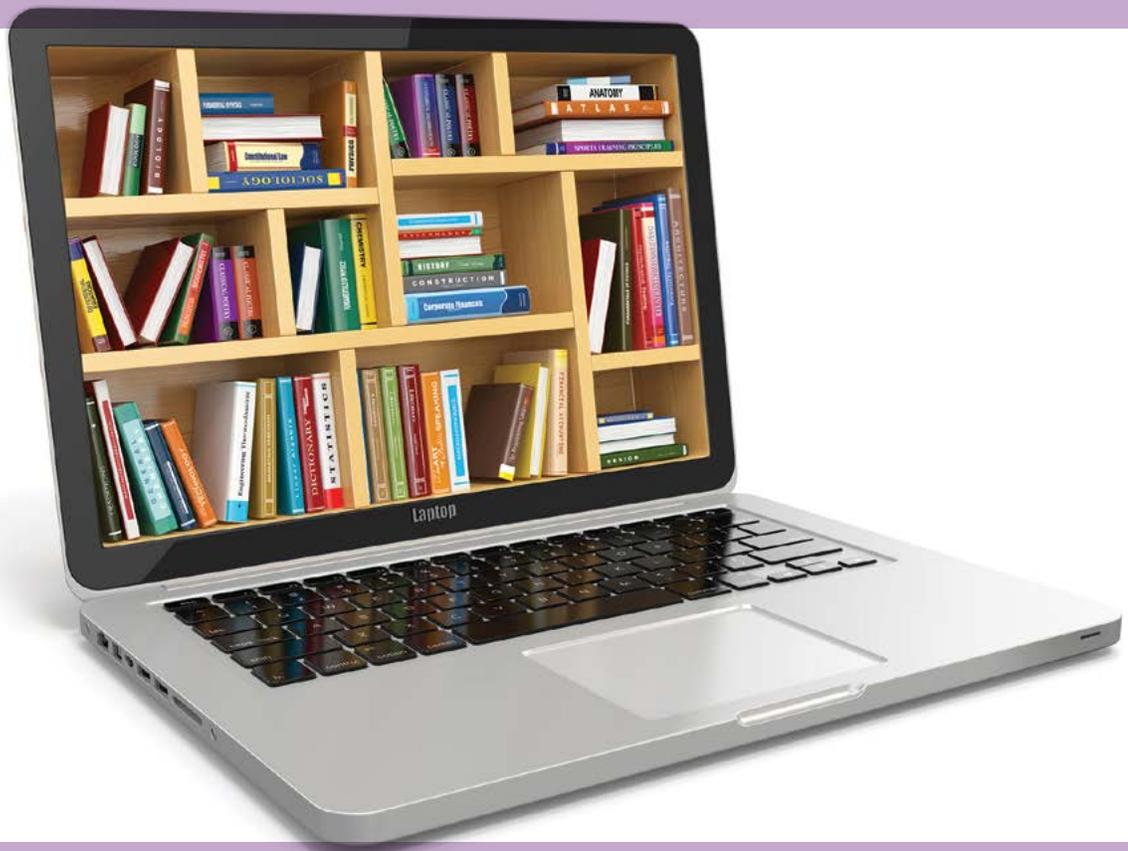


Technological Confusion or Infusion: An Effective and Sustainable Procedural Framework for Digital Learning

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School districts have become increasingly self-reflective regarding the need to transform into “future ready” learning environments. It is estimated that schools in the United States spend over 50 billion dollars a year on educational technology (Johnson, ASCD, 2011-12). Equipping students with digital devices through 1:1 initiatives is acknowledged as integral

to this pedagogical metamorphosis (Bauer & Kenton, 2005). However, “rolling out” hardware “en masse” without clear, strategic plans can stall organizational change rather than catalyze it and lead to what are referred to as “usage and outcome gaps” (Lim, Zhao, Tondeur, Chai and Tsai, 2013).

The article sheds light on not only how to foster technological innovation on the school level, but as importantly how to develop a clear district vision and implementation plan.

At the elementary school highlighted in this article, technological resources and innovation have grown exponentially over the past five years. Taking into consideration that approximately 65% of today’s elementary school students will enter careers that are yet to be created (Wolfe, 2013), the school identified a clear-cut need to expose its students to technological advances on a daily basis. Five years ago, resources were limited to SMART Boards and four desktop computers in every classroom. By 2017, every classroom has a SMART Document

Camera, and students in the 2nd-6th grades now participate in a 1:1 chromebook initiative. Moreover, the library was transformed into a Research and Technology Center that includes a SMART table, 3D digital printer, 14 desktop computers, and an Epson Projector accessed through the teacher workstation. Classrooms schedule time in the center to conduct research for project based learning activities, and the Gifted and Talented program utilizes the space to complete coursework.

The acquisition of this technology was not conducted in an extemporaneous manner. Rather, a circumspect approach was taken to ensure that it was financially responsible, and that it also permitted ample time for staff engagement and training. For example, all of the chrome books were purchased through effective management of the school budget, and a pilot year took place in the 5th and 6th grades. Incremental expansion occurred over the next two years resulting in students across five grade levels enjoying daily access to their own chromebook.

The use of such technology yielded immediate gains in student achievement. During the 2016-17 school year, 3rd-6th grade students typed responses to the district-wide, monthly, writing prompts, which were aligned with the PARCC ELA units of Narrative, Literary Analysis, and Research Simulation. The 89% school-wide proficiency achieved on PARCC ELA that year, which was a 41% increase from the previous year, may be attributed in part to these exercises.

In many cases, well-intentioned initiatives fail due to a lack of “buy-in” from staff, making appropriate staff training a top priority before the initial rollout (Mumtaz, 2000). To maximize the use of the chromebooks, two teachers attended a Google Apps for Education training that led to the Google Level 1 Educator Certification. A peer-to-peer turnkey then took place within the school’s PLCs, so all staff members were informed of the many features. Subsequently, students were provided with Gmail accounts to foster communication with their teachers through

Google Classrooms. Students now regularly use Google Docs and Slides to collaborate, a key 21st century skill.

This school-level decision-making process could very well serve as a district-level model. Conversely, in the absence of a unified district vision for digital teaching and learning, best practices may remain “siloeed.” The Partnership for 21st Century Learning was founded “as a coalition... to position 21st century readiness at the center of US K-12 education and to kick-start a national conversation on the importance of 21st century skills for all students.” (Retrieved from <http://www.p21.org/about-us/our-history> on January 2, 2018). Since this landmark occasion, districts have encouraged the use of technology and frequently supported it with large scale “roll outs” of hardware. In 2017, K-12 education spending on technology related items ballooned to 12 billion dollars. (Retrieved from http://www.centerdigitaled.com/navigator/numbers/2017-education-it-spend-k-12-vs-higher-ed_70.html on January 2, 2017). However, the infusion of devices is not always accompanied by a cogent plan. The result can be a haphazard proliferation of technology creating various challenges (Groff, J., & Mouza, 2008). First, within the faculty a tremendous diversity in knowledge and usage may have developed. Second, the applications which are being used on the school and classroom level may not necessarily represent the most appropriate options for larger district-wide implementations.

The procedural framework laid out in the following section represents one district’s technology strategic planning process. On a macro level, it may be worthy of replication in districts that are deliberating over a 1:1 initiative, on the verge of large hardware rollouts, or evaluating their current device strategy. On a micro level, the underlying process may become a filter, through which to run decisions relating to technology purchases.

The first step was to assemble a “Delta Team” to craft the district digital learning vision. The team reviewed the district’s existing technology plan,

the criteria of the NJ Future Ready Schools Initiative, the New Jersey Student Learning Standards for Technology, and the Partnership for 21st Century Learning. The following key themes emerged, digital collaboration, creation, and digital citizenship. Insofar as staff proficiencies, curating digital content/building shared resources, designing digital lessons, delivering digital/blended lessons and operating within a learning management system were designated as core skills. The team also concluded that a mindset shift for staff relative to 21st century teaching and learning was equally important placing greater emphases on, for example, inquiry-based education, application, and student centeredness (Hixon & Buckenmeyer, 2009).

The next step was to identify the programs and applications that staff would utilize within this new environment. This is crucial not only as it articulates very clear and specific expectations; but also informs the planning of professional learning. Once the core values and proficiencies were defined, a timeline was outlined. Considering the “second order changes” (Watzlawick, Weakland, & Fisch, 1974) to bring about this paradigm shift, as well as the requisite professional learning, a conservative four-year plan was recommended.

The primary focuses of year one were communication with stakeholders and assessment of technology proficiency. A presentation outlining the plan was shared with the superintendent, the Board of Education Curriculum and Technology sub-committees, administrators, staff, and community. The district’s supervisors were charged with distilling the larger vision into department plans. A survey was then created and administered to the entire district staff. This enabled the creation of cohorts by proficiency level to tailor PD to various entry points.

Year two is labeled, a time of experimentation for all staff, the identification and support of early adopters is also crucial. A high profile guest speaker would be invited to the opening district convocation, and staff members who distinguished themselves as early

adopters of technology and classroom innovation would be recognized and celebrated. In year 2, the technology assessment would be administered to track progress, evaluate PD, and plan for the following year. A summer technology academy would once again be hosted. Year 3, is the phase in which “we do”, all staff try with guided practice, a technology survey, PD planning,

and technology academy would again occur. Year 4, all staff implement the plan as a non-negotiable.

The above noted processes offer a blueprint for successful implementation at both the school and district levels. The intent of this procedural framework is to offer a unified, district-wide vision and implementation plan in effort to

avoid the common pitfalls that many experience. Educational leaders are charged with the responsibility of ensuring that teachers and students have access to and effectively utilize technological resources in the classroom. While many have the best intentions in mind for the use of technology, without such a framework their plans often fall short of the intended outcomes.

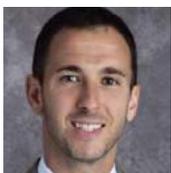
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