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MOMENTUM BUILDING TO REDESIGN K-12 EDUCATION TO A STUDENT-CENTERED, PERSONALIZED LEARNING MODEL

By

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The nation's education leaders increasingly recognize that our industrial-age educational model - based on fixed time, place, pace and curriculum - must be redesigned for today's digital age and knowledge society. Our student body is increasingly diversified, while expectations have grown of what students need to know and understand. Meanwhile, our students are surrounded by a personalized and engaging world outside of the school, but are too often unplugging not only their technology, but also their minds and their passions, when they enter our schools. In November, three national organizations collaborated to publish a roadmap to help reengineer our outdated education model from a mass production, teaching model to a student-centered, customized learning model that will better engage, motivate, and prepare our students to be career and college ready.

*Innovate to Educate: System [Re]Design for Personalized Learning*¹ is based upon the insights and recommendations of some 150 visionary education leaders convened by the Software & Information Industry Association (SIIA) in collaboration with ASCD and the Council of Chief State School Officers (CCSSO). These visionaries and practitioners recognize that educational equity is not simply about equal access and inputs, but requires that a student's educational path, curriculum, instruction, and schedule be personalized to meet her unique needs, inside and outside of school. Our educational system must help each child achieve her potential through a unique set of resources and strategies appropriate for her learning style, abilities, and interests, as well as social, emotional, and physical situation. Ninety-one percent of education leaders at the Symposium very strongly or strongly agreed that "we cannot meet the personalized learning needs of students within our traditional system - tweaking the teacher/classroom centered model is not enough, and systemic redesign is needed."

¹ Wolf, M.A. (2010, November). *Innovate to educate: system [re]design for personalized learning*: A report from the 2010 Symposium. Software & Information Industry Association in collaboration with ASCD and the Council of Chief State School Officers. Washington, DC. Available at <http://siiia.net/pli/presentations/PerLearnPaper.pdf>.

Essential Elements & Policy Enablers

Participating education leaders identified the following top components of personalized learning:

Essential Elements

1. Flexible, Anytime, Everywhere Learning
2. Redefine Teacher Role and Expand "Teacher"
3. Project-Based, Authentic Learning
4. Student-Driven Learning Path
5. Mastery/Competency-Based Progression/Pace

Policy Enablers

1. Redefine Use of Time (Carnegie Unit/Calendar)
2. Performance-Based, Time-Flexible Assessment
3. Equity in Access to Technology Infrastructure
4. Funding Models that Incentivize Completion
5. P-20 Continuum & Non-Age/Grade Band System

Participating education leaders rallied around redefining the use of time and the Carnegie Unit as the single most significant policy enabler for personalized learning. Personalized learning models reverse the traditional model that views time and place (that is, seat-time) as the constant and achievement as the variable. Instead, personalized learning ensures all students gain proficiency independent of time, place, and pace of learning.

Scaling Through Technology

These education leaders recognized that personalized learning requires not only a shift in the design of schooling, but also a leveraging of modern technologies. Personalization cannot take place at scale without technology. Personalized learning is enabled by smart e-learning systems, which help dynamically track and manage the learning needs of all students, and provide a platform to access myriad engaging learning content, resources and learning opportunities needed to meet each student's needs everywhere at anytime, but which are not all available within the four walls of the traditional classroom or delivered by a single educator.

When considered systemically, technology allows for a shift from the current fragmented approach to curriculum, instruction, and assessment to a much more integrated platform that can be managed and accessed anytime, from anywhere. Technology based platforms are needed to gather and analyze assessment and other data, and to deliver multiple types of instruction through digital content and online/blended learning. Modern learning technologies efficiently identify student skills, learning styles, and preferences in an on-going way and enable delivery of a wide range of matching curriculum and learning activities to meet each student's personalized needs.

Technology applications support personalization, including:

- multi-modal and universally designed digital content, adaptive software, and multimedia resources, including learning games and simulations, that address various learning styles and reading levels;
- computer-based and learning-embedded formative assessments that dynamically identify student needs to immediately impact instruction, along with related data systems for managing that information; and
- online learning and virtual learning communities that provide a range of opportunities otherwise not available, including platform for peer-to-peer learning and communication with community-based people and resources.

A robust, comprehensive platform for personalized learning incorporates learning algorithms, assessment, and curriculum and content in its many forms. Like models for the personalization of learning, the technologies and resources will continue to evolve and grow. Ever more sophisticated tools and integrated systems are required to meet this bold approach to learning. While technology in and of itself is not the silver bullet for personalized learning, it is a critical driver and conduit to transforming our current one-size, fit-all system. Policies that encourage equity in access to technology infrastructure are central to personalizing learning for all students.

Models & Examples

Just as learning cannot be one-size-fits-all to meet the needs of each student, so too must personalized learning models vary and be customized to meet unique local needs and opportunities. A system of personalized learning cannot be prescribed, but must be designed and built from the ground up based on the principles and elements described above. Personalization can take place at many points and dimensions along the learning continuum, including at the levels of the learning object, the lesson, the class or course, and the school itself. Personalization can account for variation in factors such as performance, reading level, learning modality, teacher interaction, topical interests, learning location (including virtual) and schedule, among many others. In theory, an unlimited number of learning models exist depending upon each student's unique needs and interests, and the student-driven learning path may include opportunities for online courses, project-based learning, tutoring or team learning, formal courses and community-based learning, and any hybrid of these and other elements.

Many examples do exist of student-centered, personalized learning models. For example:

- Adams 50 School District (CO) dramatically changed the very nature of teaching and learning in their community by replacing the common time-based system with a competency-based reform model in which grade levels are no longer used. Students work through ten different learning levels at their own pace. Students of varying ages work together on a particular skill, despite the fact that they would have been in different grades in a traditional model. Struggling students have access to different types of activities and can work at their own pace. Students who quickly grasp the concept can advance to the next level whenever they prove ready. And technology is used to manage the data and differentiate instruction. Adams 50 follows the Re-Inventing Schools Coalition (RISC) model, which also includes these components: students become leaders of their learning process; teachers become facilitators and partners; learning pathway is transparent to everyone, and learning is the constant and time is the variable.

- New York City Department of Education's School of One ensures instruction and learning is based not only on the specific achievement level and concepts mastered by each student, but also on each student's learning styles and reactions to specific instructional techniques. Additionally, the School of One transforms the traditional classroom model of one teacher for a group of 30 students and creates instead teams of educators working in varying combinations, methods, and ratios to address the needs of each student. Based upon a learning style assessment and daily assessments to identify their learning preferences and needs, students receive a unique daily "playlist" from a bank of available instructional lessons/activities/strategies to address the pertinent, needed learning standards. This allows students to take advantage of various instructional approaches and strategies and to learn in a truly personalized manner and pace regardless of age, grade level, or class assigned. The model capitalizes on technology to assess students, power the algorithms to match students with resources, address the many different learning styles, provide additional time on task, adjust to a student's pace, and provide multiple pathways.
- Providence (RI) Metropolitan Career and Technical School primarily targets students struggling in a traditional high school and follows the Big Picture Model. The model requires that students plan their personalized educational program with their families and stretches the traditional school day by providing opportunities for internships two days per week. The use of technology and community resources provide many additional opportunities to engage students and personalize the learning experience beyond the school day into what may typically be considered informal learning time. The model emphasizes that learning does not and should not begin and end with the traditional school day, and that students will be better served in a comprehensive system that takes advantage of before and after school programs, home, and community.

Other examples include the following: Shasta Secondary School (CA); Westwood Community School District (MI); Chugach Schools (AK); The Classical Academies (CA); and Minnesota New Country School (MN)

While these models represent different approaches to the personalization of learning, they share the commonality that each has redesigned assumptions and implementations typical in our education system, creating alternatives to limitations by age or grade bands, time-based structures, and common instructional methods for all students.

Next Steps

Collective and individual actions are needed moving forward to help education stakeholders further understand and implement a model of personalized learning. Collaborative efforts are needed to further develop, disseminate and support these ideas and models. National efforts are needed to ensure coordination and communication among various initiatives and pilot programs. By doing so, we can give voice to and accelerate this important movement, while absence of further action may be an opportunity lost to the forces of status quo and marginal change.

To that end, following are some of the key initiatives needed to advance the collective ability to advance the redesign of education to a student-centered, personalized model:

1. **Dissemination** - There is need and opportunity to help expose education leaders across the country to these opportunities and practices. Regional summits, webinars, professional development, and additional writings are but a few of the means for exposing more stakeholders. An online professional community would provide a virtual space where education leaders can network, share questions and ideas, and move forward on joint projects.
2. **Case Studies** - Personalized learning takes on many shapes, but is defined by certain essential elements. As education leaders struggle to redesign their systems, they need both exemplars as well as guides to help get there. These needs could be addressed, in part, through capture of a vetted group of examples, as well as a measure across these examples of their impact, tools, budgets, roadmaps, etc. The result will be a qualitative and quantitative resource on the models and practices for personalization redesign.
3. **Policy Action Network** - Coalition efforts are needed to identify and implement state and district policies that support personalized learning, including changes to seat time or Carnegie units. Additional work is needed to further define the identified model policies, as well as to disseminate these alternatives.
4. **Budget Models** -Redesign initiatives to personalize learning can be budget neutral, while additional productivity should be gained if we are meeting students where they are, rather than teaching to the mean. Can a personalized learning system be more cost-effective? Research is needed to identify the budget models for a personalized learning system, and to contrast those with existing resources to demonstrate their ROI.
5. **Learning Genome** - Public-private partnerships are needed to advance key technologies to deliver a personalized pedagogy for each student. Among the efforts best undertaken nationally are: (1) development and adoption of standards for the tagging and interoperability of data and content across platforms; (2) R&D to create data-rich, dynamic learning communities to power personalized learning; and (3) the aggregation of such data in a research platform needed to develop the science for further understanding the underlying traits, needs and appropriate learning resources/processes of each learner.

Conclusion

Education leaders across the country are reimagining schooling to personalize learning. This student-centered, mass customized model holds the promise to help address our nation's educational challenges and goals - to ensure equity for all students, and to better engage each student to achieve at higher levels expected for them to be college and career ready. Personalized learning models build upon long-standing research and understanding on how students learn and achieve in unique ways, but authentically implemented, it represents a true paradigm shift, not tweaks to the system.

The time is right for this shift. Education stakeholders understand the need for change to meet today's demands. The technologies now exist to bring personalized learning to scale. Further,

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students themselves want to learn in the way that helps them achieve their potential. The challenge before us is to take the research on how students learn and to build upon the models that represent a true paradigm change to provide all students with a personalized learning system.

With bold leadership and a commitment to dramatic change in our education system, personalized learning is within reach. By maximizing the ideas outlined above, we can move the discussion forward, and we can further develop and implement tangible next steps. Fortunately, many education experts and leaders are dedicated to the urgency of this movement to ensure that equity and excellence will prevail by providing a personalized learning experience for all students.

Resources

1. Software & Information Industry Association. (2010, November). *Innovate to Educate: System [Re]Design for Personalized Learning; A Report from the 2010 Symposium*. In collaboration with ASCD and the Council of Chief State School Officers. Washington, DC. Author: Mary Ann Wolf.
2. *Innovate to Educate: A Symposium on [Re]Design for Personalized Learning*. Archive of the program is available at <http://www.siiia.net/pli>, including list of attendees, pictures, speaker bios, and session summaries/videos/presentations.

About the Author

As Senior Director of Education Policy for the Software & Information Industry Association, Mark Schneiderman helps represent the interests of more than 500 leading high-tech companies before Congress, the Administration, state governments and education leaders on education policies. Prior to joining SIIA, Schneiderman was Legislative Associate for the Council of Chief State School Officers, where he represented the public officials heading each state's department of education. He holds a BA in Political Science from the University of Pennsylvania and an MPP from Georgetown University.

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Thank you for your interest in these Reports.

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Schneiderman, M. (2011). Momentum building to redesign K-12 education to a student-centered, personalized learning model. *The F. M. Duffy Reports*, 16 (1): 1-7.

The Rowman & Littlefield Education *Leading Systemic School Improvement Series* is a collection of books about “why” systemic change in school districts is needed, “what” some of the desirable outcomes of systemic change should be, and “how” to create and sustain systemic change. You can visit the website for the series by going to <http://www.rowmaneducation.com/bookseries/LSI>.

In the past, these reports often contained articles written by readers. If you would like to write an article for these reports on a topic related to whole-system change in school districts, please send a copy of it to me as an E-mail attachment to duffy@thefmduffygroup.com.

The *FutureMinds: Transforming American School Systems* initiative seeks to create a shift in the teaching-learning paradigm in school systems. You may visit the FutureMinds website by going to www.futureminds.us