

MOVING MICHIGAN FARTHER, FASTER:

PERSONALIZED LEARNING AND THE TRANSFORMATION OF LEARNING IN MICHIGAN



Michigan Virtual University®

Prepared by:

Public Sector Consultants Inc.
and the Citizens Research Council

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RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF EDUCATION
LANSING

MICHAEL P. FLANAGAN
STATE SUPERINTENDENT

Friends:

Successfully preparing our students for career and college is essential to Michigan's future. To accomplish this, we must continue transforming our K-12 system of education into one that ensures that all students excel. This will not happen by simply flipping a policy switch. Rather, the transformation of our schools will take an intense focus on a number of efforts; each of which is an important piece of an overall strategy.

Michigan already is working on a number of promising efforts, including: coordinated investment in young children; implementing essential K-12 common core standards; and advancing excellent teaching through a dynamic evaluation process and targeted professional development. This report identifies personalized learning as another important way to improve the educational outcomes of our children. Advances in technology are making it possible to extend an individualized instructional approach to all students, allowing every child in Michigan to learn in the manner that will best help her or him reach their full potential.

This independent report proposes a statewide vision that places a high value on personalized learning, and outlines the tools necessary to implement that vision. The six policy recommendations it contains are designed to establish personalized learning and ensure that it is available to all Michigan students. I invite everyone interested in continuing to transform Michigan's education system into one that ensures success for all of Michigan's children to read this report and continue the advancement of education excellence in Michigan.

Sincerely,



Mike Flanagan
State Superintendent

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INTRODUCTION



The *Michigan Virtual University*® (*MVU*) is a private, nonprofit Michigan corporation established by the State of Michigan in 1998 to serve as a champion for online learning. It is the parent organization of the *Michigan Virtual School*®, which provides online courses for middle and high school students, and *Michigan LearnPort*®, which delivers professional development to Michigan educators.

In his January 2012 budget message, Governor Rick Snyder asked *MVU* to accelerate technology innovation in Michigan's schools and establish a Center for Online Learning Research and Innovation. To assist in articulating a vision for Michigan's education system, *MVU* commissioned Public Sector Consultants Inc. (PSC) and the Citizens Research Council (CRC) to answer two questions:

- What is the future of education in Michigan?
- What role does/could technology play in that future?

To answer these questions, PSC and CRC interviewed more than 30 state and national education leaders identified by *MVU*, PSC, and/or CRC. In addition, the research team conducted an extensive literature scan including policy briefs and academic papers either recommended by *MVU* or one of the interviewees or identified by PSC/CRC's own independent research.

ACKNOWLEDGEMENTS

PSC and CRC gratefully acknowledge the time, talents, and guidance we received from staff at *Michigan Virtual University*®, the Michigan Department of Education, leaders of local school districts, and national educational leaders.



PERSONALIZED LEARNING AND MICHIGAN'S STUDENTS

In Michigan, one in three third graders cannot read with proficiency. Three in ten high school seniors will not graduate in four years, and only one in five high school graduates are considered college ready. We must do better—but how? The only way to dramatically improve student learning statewide is to have an intense focus on the relationships between students, teachers, and content. The Michigan Legislature has already embraced the importance of highly effective teachers by passing legislation to improve the feedback and evaluation process for educators statewide. The State Board of Education has already embraced the importance of quality content by signing on to the Common Core Standards. **As a state, we must now focus on how students learn best.**

How and when students learn is changing on a daily basis. Rather than dusting off an old set of encyclopedias to learn about lions, students watch a YouTube video from the world's experts. They download the latest app to a portable device (smartphone or tablet) to test their knowledge of fractions, and they write entire research papers referencing high-quality sources of knowledge without leaving their desk at home or school.

How and when students learn is changing because how people access information in their daily lives is in flux. When was the last time you pulled a dictionary off a shelf to check the spelling of a word, or opened the morning paper to check a movie time? In our daily life, information is readily available in a myriad of formats, but that is not always the case in Michigan's classrooms. System-wide, it is still the norm for a classroom of students to be learning the same content in the same way without full recognition of the variety of learning styles and abilities in the classroom. Thirty years ago, we recognized that students in special education programs required an individualized learning experience with goals and methods aligned to their own needs and abilities. **Now is the time to recognize that all students would benefit from this personalized approach to learning.**

“Personalized learning is about making the curriculum as attractive and relevant as possible to the widest possible audience. This is accomplished by providing multiple access points to a high-quality curriculum—access points that will entice students with different readiness levels, interests, cultural backgrounds, intelligence preferences, and learning styles.”¹

We know the best educational environments are engaging and rigorous. We know those environments set high expectations and then provide students with the tools they need to meet and exceed them. But, we also know that the “best” environment varies dramatically from student to student. By personalizing learning, teachers focus on how individual students learn concepts and enable students to master new ideas in ways that are engaging and well-matched to students’ interests, and at a speed that best aligns with students’ abilities and skill levels.

Personalized learning is not new. Many of us expect teachers to provide this intense individual attention to students now. We count on teachers to identify why students are struggling and provide additional instruction. We expect them (at the same time) to ensure that students who are on track continue to move through the curriculum, and that high performers are challenged. In other words, we expect every teacher across the state to perform superhuman feats on a daily basis.

¹ William Powell and Ochan Kusuma-Powell, *How to Teach Now: Five Keys to Personalized Learning in the Global Classroom* (Alexandria, Va.: Association for Supervision & Curriculum Development, 2011). p. 7

WHAT DOES PERSONALIZED LEARNING LOOK LIKE?

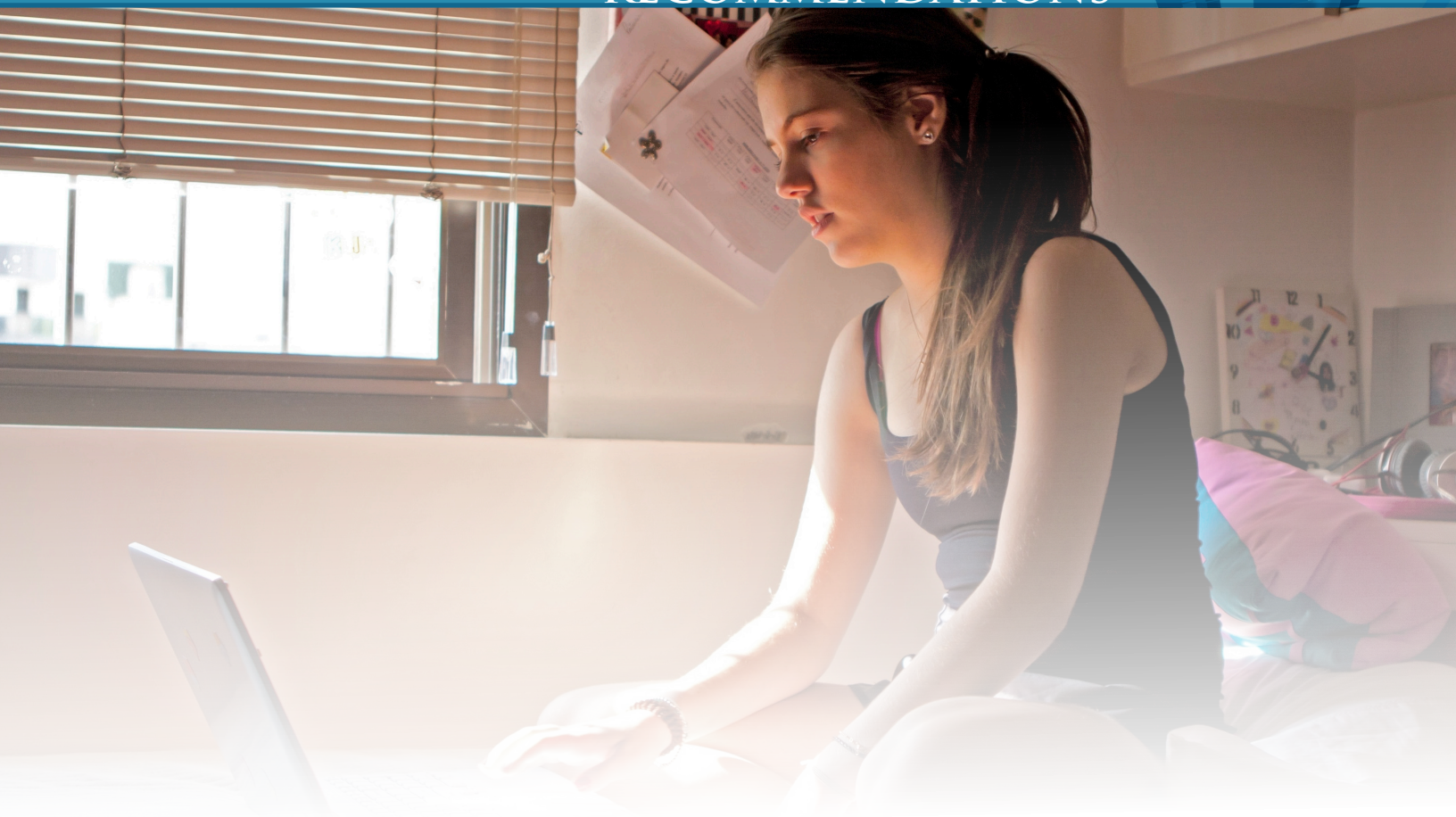
Picture Ms. Smith's first grade classroom. She has 30 students, and all of them are working on a phonics lesson. Laura is reading a book about dogs (she wants to be a veterinarian) and her e-reader is prompting her to sound out a word she does not know. Johnny is struggling with letter sounds and he is playing an online game that helps him master this skill. Amy and Emily love working in pairs so they are quizzing each other on how to blend sounds. All of them are working on skills that all first graders are expected to master, but they are doing so in ways that match their skills and interests. Ms. Smith is monitoring all of the students, but she is assisted by online assessments that regularly ask students to demonstrate mastery. This data is quickly aggregated and analyzed to allow Ms. Smith to help students connect with the tools that best fit their needs. This is personalized learning.

We believe that with the help of personalized learning, all students can be college and career ready when they graduate from high school. What if Michigan embraced that statement as the vision for our education system? No longer would we rely on the state's teachers to be solely responsible for supporting each and every learner in their classroom. Instead, Michigan would design a system that includes the tools and support necessary to provide an individualized education for all students. We would define a statewide vision that places a high value on personalized learning that includes teaching and learning methods aligned to both state content standards and individual students' interests and abilities.

This report outlines the tools necessary to implement that vision, from infrastructure like data and technology, to professional development for teachers and schools, to statewide policies that would propel implementation.

The recommendations that follow are separated into six key components that identify core elements in the education of students in Michigan today. Each of these provide one or more recommendations that can be implemented today along with an analysis of why these recommendations meet the needs of students in Michigan.





1. STUDENTS

RECOMMENDATION

Michigan must formalize, in policy, strategies and tactics that permit each student to learn at his or her own pace.

ANALYSIS

Personalized learning means that students move at whatever pace best suits their individual needs, can access different pedagogical strategies that make the most sense to them, and draw from their personal interests to master content in meaningful ways. For most students this could well mean they are still “in school” from 8:00 a.m. to 3:00 p.m. five days a week, but it also means that instruction will be provided through a variety of mediums, not just by a teacher physically present in the classroom. It means that the experience the student has in school matches what many students experience at home—using technology seamlessly to interact with peers and acquire information—directing students toward skills and knowledge that they need to be successful in college and careers.

RECOMMENDATIONS

HOW DOES PERSONALIZED LEARNING WORK?

Alison Anderson of INTEL² likens learning to being a traveler in a national park, which is a good analogy for how personalized learning might look. Every traveler comes to the park with a different set of ideals and goals. Some want to only “see the park.” Others want an hour-by-hour itinerary of exactly how they’ll spend their time. Some follow a prescribed tour while others hike off to find their own paths. Her analogy is much more extensive, but the idea is a good one: learners, like different travelers to the same park, will come to the learning environment on their own terms and forge their own paths, but will still encounter the requisite curricula.

Students can adapt their learning to whatever time of day is most conducive to their lifestyle. Students can use whatever environments best support their learning needs, be it a classroom, lab, library, office, or home. Instead of following learning material in a specified order and time frame, students can explore the curriculum in their own way, including working through some ideas more than once if they don’t master them the first time or moving rapidly through topics in which they already have developed competency.

For personalized learning to become a reality—and for students to fully realize what it means to learn anywhere and anytime—Michigan must integrate supports for students and teachers. It is not within the scope of this report to highlight the broad range of factors affecting a student’s academic success that are well established by educational researchers. For policymakers, the overarching theme of that research base is clear: what a student learns inside of school is influenced by the student’s home and family environment before and after school.

In the context of personalized learning, research and common sense add an additional complication: access to support mechanisms and technological devices that enhance personalized learning are not evenly distributed between home and school, let alone across a community. The infrastructure that supports technology in personalized learning is unevenly distributed around the state—and some students have far greater access to both devices and places of learning than do other students. Therefore, instituting personalized learning will be a statewide effort involving families, communities, schools, and teachers.

This effort is about more than putting a useable device in each student’s hand. We need to ensure that all students are able to engage this new learning in a positive way. For example, some students will find the independence inherent in personalized learning liberating while others will struggle to cope with the responsibility that goes along with it, which means the educational system needs to help students adapt to new forms of learning. We also must ensure that support mechanisms such as technological training, hardware and software replacement plans, and well-structured mentoring and learning plan programs are in place to give all students personalized educational opportunities.

2. TEACHERS

RECOMMENDATION

Michigan must create a statewide system of support for teachers as they transition their instructional practice to methods that allow for full implementation of personalized learning.

2. Nigel Paine and Elliott Masie, eds., *The MASIE Center’s Learning Perspectives* (Saratoga Springs, N.Y.: The MASIE Center & The Learning CONSORTIUM, 2010).

ANALYSIS

A highly trained teacher is crucial to a student's educational achievement. Excellent teachers already differentiate their instruction according to students' diverse needs; personalized learning takes the next logical step in excellent teaching by repeating this best practice on a massive scale—and in a manner and at a pace guided by the student. An excellent teacher already navigates the complex classroom relationships that position students to learn: knowing the students, knowing his or her own content area, knowing the best method to deliver that content and how to assess student learning.

Personalized learning allows teachers to fully realize the kind of teaching they generally prefer. Instead of delivering or reciting a lesson plan and hoping to reach all students, they work with students individually and assign them to groups and tasks that more authentically support their learning. They create lessons based on where students are in their learning and design classroom experiences that supplement and reinforce ideas. They have real-time access to data that describe students' needs and use it to design a pathway for each student to have academic success—not for 30 students at a time, but for each student, every time, based on the array of performance data and the teacher's own observations and experience.

Teachers become architects of flexible learning environments where instructional strategies, use of time, use of materials, approach to content, the grouping of students, and the means of assessment are used purposefully to identify the individual needs of students.³ They are teachers, coaches, facilitators, advisers, data-analysts, and counselors. They have the freedom to engage their students in ways that they know will support their students' learning.

The goal of personalized learning will be slowed or prevented if we do not support development of professional educators' knowledge, skills, and dispositions that will enable them to demonstrably support students' learning needs, especially in light of the central role technology will play. Michigan, through the expertise and leadership of its professional educators, needs to rededicate its entire system of teacher preparation—from initial training and certification, through continuing education and professional development—to ensure that all school personnel have continuous high-quality training on best practices in personalized learning.

Technology must be leveraged as a delivery vehicle for this statewide system of support. We must also reconfigure existing investments in curriculum and courses at the institutions of higher education, and implement new professional development opportunities through all educational providers (institutions of higher education, professional associations, unions, intermediate school districts, and third-party for-profit and not-for-profit training programs) in support of personalized learning.



3 Powell and Kusuma-Powell, *How to Teach Now*.



3. SCHOOLS

RECOMMENDATION

Schools must have support from the state as they create spaces that support personalized learning including technology integration and spaces for more individual and small group work.

ANALYSIS

Currently, Michigan's schools are organized by classroom, not by individual learner. Making the transition to a universal system of personalized learning will be a highly complex process. Balancing individual learning styles with economies of scale for facilities, instructors, and supplies is complicated.

Rethinking schooling in terms of personalized learning does not mean that there should be an "anything goes" approach to learning. For more than 30 years, the standards-based education movement has been working to systematize teaching and learning. The goal is that students can demonstrate mastery of content that aligns with best practices buttressed by research.⁴ School systems that use personalized learning embrace these reforms as they identify the critical content areas for students to master. High-quality school systems then use these standards to design the organization so that students experience an education that feels personalized and is rigorous and relevant in a curriculum that prepares students for 21st century jobs.

In order for standards-based learning to work with personalized learning, education systems must be organized so that individual student learning outcomes are supported system-wide. From an organizational standpoint, personalized learning can be built on a number of big ideas.^{5,6} A school system must:

- Be able to collect meaningful data from an array of sources about each student's learning and development
- Be organized to allow groups of dynamic, collaborative teachers to make decisions about curricular and pedagogical advancement
- Be organized to foster flexible scheduling and pacing, constructive practices, active learning, and reflective practices for all teachers and students
- Develop a process so that each student has a unique plan to support his or her learning that uses authentic assessments to demonstrate mastery

The current structure of school funding and organization make it difficult for traditional public schools to effectively upgrade technology. That includes classroom devices, software, servers, and high-speed data connections. Without more money going toward them, schools will lag behind competitors and lose enrollment.

Students assuredly will bring to classes the tools that they use in their daily lives: smart phones, tablet computers, and electronic book

4 The Common Core State Standards Initiative (www.corestandards.org) is one recent example.

5 Dianne L. Ferguson et al., eds., *Designing Personalized Learning for Every Student* (Alexandria, Va.: Assn. for Supervision & Curriculum, 2001).

6 James W. Keefe and John M. Jenkins, Personalized Instruction, *Phi Delta Kappan* 83, no. 6 (2002): 440–448.

readers. Such devices—and new ones yet to come on line—will become ever more important to personalized learning. Schools must adapt to a far greater array of new tools and technologies with which students are most comfortable.

Schools must forge partnerships with new places in which students learn. There is a growing consensus among stakeholders that in the future school systems will incorporate a network of “local learning centers” that encompass not just the classroom, but also libraries, computer labs, and students’ homes. Educators and policymakers must think about moving educational settings beyond the school walls and into the other places that students frequent. Building on this and other similar ideas provides a new paradigm for what schools are—and can be.

4. TECHNOLOGY

RECOMMENDATIONS

Michigan must place technology at the forefront of learning, information, and accountability.

Michigan needs an independent, neutral, and trusted voice in the educational sector to help providers and districts deploy technology that works.

ANALYSIS

Technology’s evolution and impact are revolutionary. Retiring teachers remember school courses devoted to proficiency on a manual typewriter. Today, students may have a fully functional, and increasingly intuitive, mobile computer in their pockets that can access any information at any time. It is not far off that even typing on a keyboard will be obsolete; that technological systems will be voice-activated is the least radical of the range of applications of technology that are on the horizon. How we leverage those changes for maximum efficacy in educational settings may very well determine how well our students are prepared for the world beyond the schoolhouse door.

Applying technology to education should be intuitive and flexible. It should, as Deputy Director of the Office of Educational Technology at the U. S. Department of Education Richard Culatta reports,⁷ be able to:

- Create systems that adapt to the needs of the learner
- Create systems that support differentiated learning
- Allow educators to more frequently evaluate learners as they learn rather than using a final summative assessment
- Provide learners and their parents choice about what and how they learn
- Customize instruction based on performance
- Turn learners into creators

7 Richard Culatta, Overview of Personalized Learning, U.S. Department of Education Summer Seminar Series, July 10, 2012, accessed 11/28/2012, <http://www.ed.gov/teaching/summerseminars>.

RECOMMENDATIONS

“My wish is that people will understand that the two most important things that we can use technology for are for giving learners access to the best teachers and the best ideas in the world and to create communities that are otherwise impossible.” - Educational Technology Expert

The technological systems that become the underpinnings of mass personalized learning allow for a wide range of content presented in a variety of forms, capable of adapting to student processing levels, prior knowledge, and preferred learning styles. These technological applications can yield immediate data on learning and learning behavior, the results of which can be used to direct the learner to new content and experiences that have a high probability of relevancy and effectiveness. The possibilities for technology to make personalized learning a reality are nearly limitless. Here are just a few examples:

- Revolutionizing textbooks by using tablets that hold every book the student ever had or will need, that have analytic and adaptive software that help students read more effectively, and interactive texts that are intuitive to use
- Creating Massively Open Online Courses, online games, and apps that challenge the notion of what a “classroom” is and give more students access to the best teachers
- Enabling teachers to use assessment results like doctors use medical tests to help students identify areas where they need support or create a plan to master them
- School systems create real-time networks where they can teach and learn from one another in virtual or blended (a combination of online and face-to-face) environments

Michigan’s education leaders are clamoring for reforms that are “efficient, effective, and economical” in an age where schools face increased fiscal pressure from declining enrollment and declining public budgets.⁸ Technology can help foster those reforms.

The capacity of school districts to upgrade and maintain technology is dependent on many variables, some of which lie outside their control. Currently, there is no effective financing mechanism, and when substantial investments in technology occur, districts and the families that they serve need to be assured that they are allocating precious funds for rigorously tested and educationally superior products. By 2014, districts and school buildings must have a basic technology infrastructure to fully integrate online assessments for the Common Core standards. Michigan must invest in and support schools’ transition to an infrastructure that sustains the kind of commitment to technology required of education in the future.

Michigan should create a new organization (or build on an existing one) with the charge to provide counsel to all K-12 providers on how to integrate technology and to ensure high-quality investments. The present trend toward opening up the marketplace to virtually unrestricted education providers, more and more of which heavily rely on technology to deploy their products, must be accompanied by rigorous standards for providers’ quality and effectiveness. Ensuring that any educational product meets high standards, is supported by solid research, and is financially sustainable is paramount.

8 Dave Murray, 71 West Michigan School Chiefs on Reforms: Poor Families “Simply Do Not Have the Resources to Shop Around for Educational Opportunity,” *The Grand Rapids Press* - *MLive.com*, accessed 12/10/2012, http://www.mlive.com/opinion/grand-rapids/index.ssf/2012/12/71_west_michigan_school_chiefs.html.

5. DATA

RECOMMENDATION

The state must create and support a data infrastructure that teachers, parents, students, and schools can use to inform individualized instruction.

ANALYSIS

Educators in our state routinely tell us that they are mired in the proliferation of data. MEAP. NAEP. ACT. MI-ACCESS. It seems the alphabet soup of standardized assessment is never-ending. Everywhere educators turn someone else is asking them to collect, aggregate, and report data about their schools, their teachers, or their students. This is important information. It helps hold schools accountable for learning, allocate funding, and more. **But it's not the data we need to build a system of personalized learning.**

To support a statewide system of personalized learning, we need a statewide data system that is formative, timely, and easily available.

Formative: Assessments generally serve two purposes: to inform instruction (called formative assessment) and to demonstrate proficiency or mastery (called summative assessment). As a state we focus almost solely on summative assessments like the MEAP. These are important tests. We must have data that allows us to compare learning across schools and districts. However, formative assessment is essential to guiding instruction, particularly in a personalized assessment model. Data, when used effectively, make it easier to figure out exactly what a student does or does not understand. Formative assessments define learning expectations and inform teachers and parents of how they can support students' learning. By nature, these assessments are low stakes (in other words there is no penalty).

Timely: Teachers need real-time access to data that describe students' needs and use it to design a pathway for each student to have academic success—not for 30 students at a time, but for each student, every time, based on the array of performance data and the teacher's own observations and experience. Has Johnny mastered double-digit subtraction? Does he need additional support? Is he excelling and ready to tackle new challenges? Timely assessments can help answer these questions.

Easily Available: Teachers across Michigan design, give, and grade formative assessments every day. To support personalized learning, Michigan must make this practice easier. One way would be to build a statewide database of assessment questions. This would allow teachers to more easily build formative assessments that take into consideration what they know about a student's current understanding.





6. QUALITY AND ACCOUNTABILITY

RECOMMENDATION

The governor should appoint an independent authority to evaluate the quality of content providers.

ANALYSIS

With the proliferation of non-governmental education providers comes the challenge of ensuring that these providers are meeting students' needs. Since student progress might not be assessed for several years under the current testing system,⁹ the burden of risk falls on the students, who will find it difficult to make up time lost to poor instruction, with little or no risk for the provider. Similar challenges exist when assessing the performance of teachers and school administrators, who are often the ones held accountable for student achievement. Accountability is high stakes—and designing an appropriate system is a complex endeavor.

Accountability at the whole school level, whether a traditional or online school, should be differentiated from accountability at the single course provider level; the outcomes relevant to the school level differ from those at a course level. Policy involving achievement measures and accountability standards should reflect these two different delivery methods.¹⁰

Outcomes for individual students should be reported in real-time to the student's home district and primary teacher, and aggregated data would be available both from the provider and through existing state systems of performance reporting. It is important that course providers be assessed independently.

Michigan cannot afford an “anything goes” mentality about sources and methods of learning. To critically evaluate new deliverers of education, the state must have an independent authority. It would set criteria, give report cards on providers, and perhaps accredit them. There will always be varying quality and effectiveness among providers. Being able to distinguish among a myriad of providers—those who add to and those who subtract from personalized learning and student achievement—is essential. Similarly, the Michigan Department of Education should set the minimum rules by which each provider evaluates whether the student's performance demonstrates proficiency or mastery or neither.

⁹ Currently, the system of assessment that has the most direct statewide impact on students and schools is comprised of the MEAP and the MME, which are not administered every year K-12 in all subject areas. A worst case scenario would be a fifth grader taking an online class, failing to grow in learning in that subject, but whose proficiency is not tested until the 8th grade MEAP. The student bears the brunt of failure to master the material, while low-quality providers have no incentive to improve, and bear no responsibility for the students who came through their system.

¹⁰ For example, at the school level measures such as graduation rate and college and career readiness are important, but these measures are not as appropriate when applied to a single course provider.

FOCUS: FINANCIAL CONSIDERATIONS

There are significant challenges that must be overcome in order for Michigan to emerge as a leader in 21st century education. The new educational needs driven by personalized learning will require many changes to the system of funding, school buildings and other infrastructure, and the interaction among various educators. Michigan's schools must still function, as they always have, as community institutions, providing social environments, sports and the arts, and meeting places for parents and residents.

Universal access is key to universal personalized learning that sustains the promise of Michigan's school systems. Many rural and urban schools do not have adequate internet access and even schools that do have connectivity may find it difficult to deliver access throughout the building because of the building's construction or limited server capacity.¹¹ School districts in every sector are currently facing significant financial stress. Over the past ten years, inflation-adjusted, per-pupil spending has fallen by more than 14 percent, and significant increases in funding are unlikely in the near term.



¹¹ Some school buildings have very dense walls that make it either impossible or very expensive to expand internet access via wired cables or wirelessly throughout the campus; they were built long before low-voltage wiring was considered a requirement for learning.

FINANCIAL CONSIDERATIONS

The problem we have in looking at technology in education is that we have not figured out that technology is not a capital expenditure and it cannot be treated as such. - National Education Policy Expert

Providing equal access to individualized learning will be challenging. Wealthier districts will have a far easier time raising the funds needed to finance technological improvements than poorer districts. Districts with older buildings may find it difficult to deploy new technology. Students from wealthier homes and with college-educated parents are far more likely to have access to computers and broadband than poorer students.

Designing an education system that personalizes learning and provides for Governor Snyder's vision of "any time, any place, any way, any pace" learning within Michigan demands new attention to our current education finance system. Careful thought will need to be given to issues of pricing when conceptualizing a system that fosters academic achievement in any combination of traditional, blended, and/or online systems. If a student takes one class through an online provider and five classes through the host district, the share of the foundation allowance made to an online provider must be determined equitably. Determinations must be made regarding the percentage of foundation allowance available to the host district for counseling, record keeping, and other administrative functions. Additional issues such as student course limits, weighting course payments according to curricular requirements (that is, does one hour of a science course cost more or less than one hour of a mathematics or art course?), and whether special circumstances dictate different funding allowances based on student need must all be essential elements in constructing an equitable and sustainable system of public education finance.



Financing capital needs is under local control. Although the state provides some assistance through the School Bond Loan Fund, local districts pay for their own real estate, buildings, and technology through borrowing and sinking funds financed by local property taxes. Capital funding is not equalized, and as a result, wealthier districts can finance these expenditures at far lower tax rates than poorer districts.

There are a number of ways that policy can be leveraged to better equalize access to capital funds, including: providing state grants, equalizing—at least to some degree—the revenue produced by a given property tax rate, or using the School Bond Loan Fund to reduce borrowing costs for poorer districts by extending payment periods or forgiving interest. These would require additional funds from the state.

Rural districts present a unique set of opportunities and challenges. On the one hand, enhanced technology provides an opportunity for additional options in rural districts where choice has previously been very limited due to low density. On the other hand, broadband is not readily available in some rural districts for either school buildings or students in their homes.

Currently local districts can purchase computers with bond funds but they cannot purchase computers with sinking funds. In other words, districts can borrow for computers but cannot utilize a pay-as-you-go method of funding them. This policy makes little sense and should be changed to allow districts greater access to the funding needed to pay for technology.



CONCLUSION



CONCLUSION

There is widespread agreement among stakeholders about what will prepare students for the demands of career and college in an increasingly globalized and interconnected world. Personalized learning is the future of education. Parents, students, teachers, and administrators view it as an inevitability that fosters academic success. For them, personalized learning cannot come fast enough. It is the most effective way of building talent and developing skilled workers. Personalized learning moves Michigan farther and faster.

Making it available to **every** student is our most important policy goal.

Michigan must rise to the challenge. We must confront the consequences of shirking the responsibility to reimagine our education system as it could be and commit ourselves to forging policies that support our students and our teachers.

We are on the brink of fully realizing the kind of education that all students deserve. Technology has given us the tools to make what was once mere wishful thinking into everyday practices. Technology is constantly evolving and will infiltrate and alter our places of learning. Policy leadership and vision will jumpstart the progress that we will achieve. In the absence of leadership, painfully slow change will mire us in outdated practices, leaving far too many children behind.

It falls to Michigan's policymakers to take the lead and encourage progress.





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