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HOW MARYLAND CAN BECOME A LEADER IN K-12 ONLINE LEARNING

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TECHNOLOGICAL INNOVATIONS ARE IMPROVING AND TRANSFORMING MOST AREAS OF AMERICAN LIFE. Yet our schools continue to be one area that has resisted transformation, operating more or less as they did 150 years ago. This will soon change.

Consider the large gap between how technology affects a child's life inside and outside of the classroom. At home, the typical child is exposed to technology and information that would have been unimaginable to earlier generations. A child can now go online and have access to unprecedented amounts of information. When a child is online, the answers to most questions are as near as the click of a mouse. Children have the opportunity to communicate with and learn from people thousands of miles away in real time. Social networking is transforming our culture and the way children interact with each other.

In school, most children are being taught in classrooms that are essentially the same as the classrooms where their grandparents learned. Despite the presence of probably a few computers in the back of the classroom, most of the instruction happens the old-fashioned way. A teacher stands at the head of the class. About 15 to 20 students sit in rows of desks, listening and trying to absorb the information conveyed by their instructor. Their learning occurs largely during school hours and is dependent on the talent of the teacher who stands before them.

It is easy to envision how this may quickly change. Increasingly, technology is expanding the learning opportunities available to American students. Children are being given the opportunity to learn online through various forms of so-called virtual education. A recent estimate found that

the overall number of K-12 students participating in online courses exceeded 1 million in 2007-08, an increase of 47 percent since 2005-06.¹ That number is expected to grow rapidly. Professor Clayton M. Christensen and Michael Horn, authors of *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns*, estimate that, in a decade, 50 percent of all courses in grades 9-12 will be taken online.²

Since online learning has the potential to transform how students learn, policymakers have a responsibility to examine whether current policies will facilitate a positive transformation that harnesses the power of online learning to improve learning opportunities for students. This paper presents a blueprint for how the state of Maryland can become a leader in offering students online and virtual learning options.

The paper begins by presenting an introduction to online learning and virtual education. It examines what types of online learning and virtual education programs are being offered in other states. It presents an overview of empirical evidence about current online learning programs, which finds that, generally, students participating in online learning programs perform better, on average, than students taking the same coursework through traditional instruction. While this evidence is limited in scope, it should give policymakers some confidence about the promise of online learning to deliver successful results.

Finally, the paper examines what types of online or virtual learning opportunities are being offered in Maryland, a state that is currently ranked 24th in offering students online learning³. It presents policymakers with recom-

mendations for how Maryland can strengthen its policies to become a national leader in offering students high-quality learning opportunities through online or virtual learning programs.

AN OVERVIEW OF ONLINE OR VIRTUAL LEARNING

Consider the important ways that technology has the potential to improve the way children learn. Traditionally, whether or not a child receives a quality education depends on factors outside of his or her control, such as place of residence, school attended, and teachers. But harnessing technology has the potential to change and improve how students learn in dramatic ways.⁴ Using technology, curricula and instruction can be customized and tailored to best suit the ways specific students learn. Children can be taught by teachers from anywhere, at any time. Students and parents can receive better and more frequent feedback on academic progress.

Online learning programs can be structured to teach students on a full- or part-time basis.

The powerful potential of technology to improve learning is becoming increasingly apparent as more states and school districts begin to offer various forms of online or virtual learning. But readers may be wondering: what exactly is online or virtual learning? What does it mean to say that a child is being taught through an online or virtual learning program? These are important questions. The following is a brief overview of the different kinds of online or virtual learning programs currently being used in the United States.

Online learning programs can be structured to teach students on a full- or part-time basis. Some state or districts allow full-time online learning programs where students receive all of their instruction through an online learning program. These programs can include “cyber schools” or “cyber-charter schools” that allow students to enroll full-time and complete their education through an online setting. Full-time online learning programs can be state-led, district-led, or established as a charter school. In addition, some states and districts offer part-time online learning programs that allow students to take specific classes virtually. These programs are considered supplementary: that is, they provide students with an additional outlet for learning to broaden the instruction that is available in their traditional school setting.

Online or virtual learning can also be harnessed to improve learning within the traditional classroom setting through blended learning. Generally, in blended learning, students receive instruction using a computer while a teacher supervises and provides supplementary instruc-

tion, assisting the student when necessary. This blended approach allows students to learn at their own pace with customized instruction, while maintaining a presence of face-to-face interaction with a traditional teacher.

For the purpose of this paper, online or virtual learning will be considered as educational programs where instruction and content are delivered primarily online, where teachers and students mostly interact in an online environment, and where students are not required to attend class in a physical location.

WHAT CAN STUDENTS LEARN ONLINE?

Online learning programs can be structured to serve a diverse range of student needs. In 2009, the Sloan Consortium published a report presenting the findings of a survey of U.S. school district administrators about the use of K-12 online learning in their school systems. The survey findings highlighted the potential of online learning to help a wide range of students, from those in need of remedial education to those needing more advanced coursework. For example, a majority of respondents agreed that each of the following were important reasons for online learning: “offering courses not otherwise available in the school,” “meeting the needs of specific groups of students,” “offering Advanced Placement or college-level courses,” and “permitting students who failed a course to take it again.”⁵

The survey included several quotations from respondents that highlighted the diverse audience of students served by online learning. One respondent commented: “The students [taking online courses] vary from excelling students, students in and out of juvenile detention that do not succeed in a regular classroom, expecting parents, parents trying to finish school after having had babies... and students trying to graduate before their 21st birthday.”⁶ Another respondent focused on how online programs serve excelling students: “We are going to heavily promote the use of AP courses so that all high schools can meet the requirement that they offer a minimum of twelve AP courses in their high schools next year.”⁷ Another illustrated how online learning can assist with credit recovery: “[online learning] should be a requirement for all HS graduates... has been very successful for credit recovery and drop-out prevention.”

This diversity is a key reason why online learning holds promise for improving learning opportunities. First, online learning can give students access to instruction that may otherwise be impossible in a traditional brick-and-mortar school. For some students, this means access to classes that are simply not offered in most schools. For others, this could mean access to a much better teacher than would otherwise be available in a traditional school. Second, virtual learning programs can also provide greater flexibility to enable students to receive the instruction they need, when they need it. This flexibility can help address a wide range of issues, including scheduling conflicts, credit recovery, or

retaking failed or missed course. In summary, online learning programs have the potential to allow students to receive customized instruction. All students can potentially benefit from this customization.

At this point, the majority of online learning programs focus on serving older or high school students. The Sloan Consortium survey reports that an estimated 64 percent of all students participating in fully online programs are in grades 9 through 12.⁸ Elementary students (grades K-5) comprised 21 percent, while middle school/junior high (grades 6-8) accounted for 15 percent.⁹

STATISTICS ABOUT ONLINE LEARNING USE

Statistics show that online learning is growing and increasing in popularity. The 2009 Sloan Consortium survey found that a majority of districts had students participating in some form of online learning: 75 percent had one or more students in a fully-online or blended course.¹⁰ Moreover, 66 percent of school districts with students participating in some form of online learning expect participation to grow in future years.¹¹ The Sloan Consortium survey found that 1,030,000 students were participating in online learning in 2007-08: 47 percent higher than in 2005-06.¹² These participation rates are projected to grow. Clayton Christensen and Michael Horn, authors of *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns*, project that 10 percent of all courses will be online, and approximately 50 percent by 2019.¹³

The increasing trend towards online learning in K-12 education is not an American phenomenon. In fact, many other countries currently outpace the United States in providing students with the opportunity to learn in a virtual setting. Susan Patrick, President and CEO of the International Association for K-12 Online Learning, reports that other countries are moving quickly to adopt online learning.¹⁴ For example, in Singapore, 100 percent of all secondary schools use online learning and all teachers are trained to teach online. China has created a digitized curriculum and is preparing to use online learning to serve 100 million new students. Turkey launched an online learning program that enrolled 15 million students within three years.¹⁵

REVIEWING THE EMPIRICAL EVIDENCE ON VIRTUAL AND ONLINE LEARNING PROGRAMS

Despite strong growth in recent years, online learning remains a relatively new phenomenon in American education. Nevertheless, the proliferation of online learning programs in recent decades has allowed researchers to study these initiatives to determine how they are affecting students' learning. In 2009, the U.S. Department of Education's Center for Technology in Learning published a report presenting the findings of a meta-analysis of the evidence-based studies of online-learning programs.¹⁶ The Department of Education's researchers reviewed the available empirical evidence and identified 51 studies that met their

requirements for inclusion. These studies included online learning programs for older students as well as students in grades K-12. Forty-four of the studies involved older learners while 7 studies involved K-12 students.

Overall, this meta-analysis found that "Students who took all or part of their class online performed better, on average, than those taking the same course through traditional face-to-face instruction."¹⁷ Beyond this main finding, the researcher's meta-analysis revealed other findings that may help policymakers understand how online learning may affect students' learning. For example, their analysis found that instruction combining online-learning with face-to-face element had a larger advantage than purely online instruction. Moreover, they discovered that students participating in online learning and who spent more time on task benefited the most.

It is important to note that many of these studies involved older students and the researchers suggest caution when interpreting their findings. For example, they point out that other factors may be responsible for the differences

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in learning gains by students participating in the various studies. In addition, they state that few rigorous research studies have been conducted evaluating the effectiveness of online learning for K-12 students. Additional empirical research will be needed to determine more conclusively how online learning impacts K-12 students.

Given these reasons for caution, this limited evidence suggesting that students participating in various online learning programs perform as well or better than their peers in traditional learning should provide policymakers with reason for confidence that students will benefit from expanding online learning opportunities

EXAMPLES OF VIRTUAL EDUCATION AND ONLINE LEARNING PROGRAMS

The proliferation of online learning programs provides policymakers across the country with various models from which to study and learn. The following are examples of promising online learning models that Maryland policymakers should study:

Florida Virtual School Launched originally in 1997, the Florida Virtual School has become the largest statewide online learning program in the country. The school is

supplemental, serving students across the state who are enrolled in full-time public or private schools. According to Bill Tucker in *Education Next*, approximately 84,000 students completed 168,000 half-credit courses last year, “a ten-fold increase since 2002-03.”¹⁸ The school employs more than seven hundred full-time teachers and provides students with personalized and responsive instruction.¹⁹ Courses are paced to students’ abilities, allowing students to choose from accelerated, traditional, or extended learning pace options.

Florida Virtual School (www.FLVS.net) currently offers more than 90 courses. Students attending schools in Florida have the option of enrolling in the online program to take classes. Florida Virtual School is funded through a performance-budgeting system created by the state legislature in 2003.²⁰ The state gives the Florida Virtual School a grant each time a student successfully completes a course. The amount (approximately \$1,000) is based on the state’s regular aid provided to students. This state-provided funding stream is helping to fuel the school’s strong enrollment growth. In addition to serving students in Florida, the Florida Virtual School also offers students from other states and other countries the opportunity to take courses through its program. These students must pay tuition.

While evidence about the effectiveness of the Florida Virtual School is currently limited, there is reason to believe that the school is providing a quality educational experience to the students it serves. Florida TaxWatch’s Center for Educational Performance and Accountability (CEPA), a non-profit research group, compared the academic achievement of Florida Virtual School students with the performance of traditional public school students and found:

FLVS students outperformed their statewide counterparts on two independent assessments, both the Florida Comprehensive Assessment Test and Advanced Placement examinations. They earned higher grades in parallel courses. And this was accomplished with less money than was typically spent for instruction in traditional schools.²¹

PA Cyber Since 2000, students in Pennsylvania have been able to enroll in PA Cyber (www.PACyber.org), an online, public charter school. The school was originally designed to serve students in Midland, a steel town that had been forced to close its high school decades earlier. But since 2000 the school’s enrollment has grown from 50 students in 2000 to nearly 7,000 in 2009. It now serves students across the state.²² PA Cyber serves students from kindergarten through twelfth grade, approximately 75 percent of whom are of high school age.

Since PA Cyber is a public charter school, students who attend pay no fees and receive required technology supplies (including a computer and high-speed internet connection) in order to participate. The school employs 320 educators and, according to scholars Terry Moe and John Chubb,

reports a teacher-to-pupil ratio of 30 to 1.²³ Students at PA Cyber have an academic advisor (with whom they must communicate over email and phone on a regular basis) as well as teachers. Students can take classes where they learn in a real-time fashion with teachers instructing and supervising their work as they go. Or, they can take classes that

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allow them to learn at their own pace and receive periodic feedback from teachers, who monitor and review their work. Terry Moe and John Chubb report that PA Cyber outperformed the statewide average on state exams under No Child Left Behind in 2006-07.²⁴

PA Cyber is able to operate more efficiently than traditional public schools (with student-to-teacher ratios about double the ratio of traditional schools). Thus, the online public charter school has been able to invest considerable resources into developing curriculum and online learning program. “PA Cyber has invested millions of dollars into its courses, and now has a repertoire of 250 courses in all,” wrote Moe and Chubb. “Every PA Cyber course is rigorously audited for instructional quality by an affiliate of the University of Pittsburgh, and the public can visit its web site to see how each course measures up.”²⁵ PA Cyber’s course work is now being used as a model for other online learning programs.

OVERVIEW OF VIRTUAL LEARNING OPTIONS IN MARYLAND

The Center for Digital Education reviewed state policies and programs related to online learning in 2008. Maryland ranked 24th among the fifty states in offering students online learning opportunities. According to the Center for Digital Education, the rankings “reflect the vision, policies, programs, and strategies that states have deployed around online learning in an effort to transform their academic environment to meet the needs of students.”²⁶

In 2002, Maryland lawmakers enacted legislation that led to the creation of the Maryland Virtual Learning Opportunities Program to provide online learning coursework for students in Maryland. In 2002, the Maryland Virtual Learning Opportunities program opened, offering three new online learning programs for students and teachers: the Maryland Virtual School, Online Professional Development, and High School Assessments.

For the purpose of this report, the Maryland Virtual School (MVS) is Maryland’s main K-12 online learning program. According to a report, *Keeping Pace with Online*

Learning, published by group of organizations that support online learning, the Maryland Virtual School serves students in grades 6 through 12.²⁷ It is a part-time or supplementary online learning program. In all, 398 students participated in the program, registering for a total of 927 courses.²⁸ Sixty percent of the course registrations were for AP courses.²⁹ To participate in the MVS, students must receive approval from their local school system and school principal. Courses cost districts, on average, between \$450 and \$600.³⁰ Costs are paid by the sponsoring high school or school system.

Readers can learn about the Maryland Virtual School (MVS) by visiting <http://mdk12online.org/>. For the 2009-10 school year, MVS is offering more than 50 different courses to earn high school credit, many of which are for Advanced Placement.³¹ MVS reports that its courses are provided by a range of companies and organizations, including the Florida Virtual School, APEX learning, and the Johns Hopkins Center for Talented Youth.³²

Beyond the Maryland Virtual School, Maryland does not offer other significant state-level or district-level online learning programs. According to *Keeping Pace with Online Learning*, some Maryland districts offer hybrid online learning programs. However, Maryland's charter school law prohibits cyber charter schools.³³ Given the limits of the MVS as a supplementary program, Maryland students cannot enroll in full-time online learning programs.

To summarize, Maryland currently offers students

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some online learning opportunities through the Maryland Virtual School; however, these opportunities are limited to supplementary instruction for high school coursework, largely focused on high-achieving students and advanced coursework. Moreover, students in Maryland have no full-time online learning opportunities.

HOW MARYLAND CAN BECOME A LEADER IN VIRTUAL EDUCATION AND ONLINE LEARNING

1. Expand Access to the Maryland Virtual School

The Maryland Virtual School is a promising model for a quality statewide, supplementary online learning program. However, the MVS currently serves a limited student population. Maryland policymakers should examine the successful case study of the Florida Virtual School and consider how the MVS could similarly become a national leader in providing online learn-

ing. For starters, the Maryland Virtual School's funding stream should be assured to give students across the state real access to participate in online learning. According to the Maryland Virtual School website, students wishing to enroll in a class at the Maryland Virtual School must first receive approval from the local school district and school board. The local school system ultimately decides whether a student's tuition costs at the MVS would be paid. To expand access to the Maryland Virtual School, policymakers in Annapolis could change the funding formula to allow students to receive state aid to enroll in MVS.

2. Reform the Charter Law to Allow Cyber Charter Schools

Maryland's charter school law currently prohibits cyber charter schools. Therefore, Maryland students are unable to take advantage of the opportunity to learn in online settings through a virtual charter school, such as the successful PA Cyber school in Pennsylvania. If Maryland policymakers wish to become leaders among states in offering students quality online learning opportunities, policymakers in Annapolis will need to reform the state's charter school law to permit virtual charter schools.

3. Expand Hybrid Online Learning Programs, Encourage Participation in MVS

School boards and superintendents across the state do not need to wait for lawmakers in Annapolis to expand online learning opportunities for students in their communities. School systems could create or strengthen existing hybrid online learning programs to enable greater access to online learning within the traditional school setting. Hybrid learning has the potential to significantly improve instruction available to students while also improving classroom efficiency. As hybrid learning programs proliferate, schools and districts should share best practices to help other communities learn how to harness technology to improve classroom learning.

In addition, school districts and school boards across Maryland should take initiative in encouraging students in their schools to utilize opportunities at the Maryland Virtual School. Parents and students alike will surely value the diverse and customized learning opportunities available at MVS. School systems should give many more students the chance to take advantage of MVS's course offerings.

4. Explore Opportunities to Partner with Other States, Schools, Online Learning Providers

In addition to these strategies, Maryland policymakers could also improve access to online learning by exploring partnerships with schools and statewide online learning programs in other states. For example, the

Maryland Virtual School already offers a course from the pioneering Florida Virtual School system. Similar partnerships could be pursued with virtual education providers from the public and private sectors. The recent and projected growth in online learning will likely lead to new innovations and advancements in the types of instructional programs that will soon become available. Maryland policymakers should pursue strategies that will allow students across the state to take advantage of the most innovative learning opportunities possible.

CONCLUSION

Online or virtual learning has the potential to revolutionize how American students learn. Already, more than a million children are participating in online learning programs across the country. In the future, participation in virtual learning is expected to grow dramatically. Online learning has the potential to benefit students of all backgrounds and achievement levels by providing access to high-quality instruction that is customized to students' specific needs and learning styles.

Maryland is currently in the middle of the pack compared to other states in providing online learning opportunities to its students. State and local policymakers can make Maryland a leader in providing online learning by reforming state and local policies, including expanding access to the Maryland Virtual School, allowing cyber charter schools, and creating blended learning programs.

There is no question whether the virtual learning revolution will occur. But it remains to be seen whether Maryland will become a leader or fall behind, watching other states innovate and provide better learning opportunities for their students.

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