MAPLE
Massachusetts Personalized Learning Edtech Consortium

DISTRICT BRIGHT SPOT PROFILE

| Andover Public Schools 2019

ABOUT THE MAPLE CONSORTIUM

The MAPLE Consortium is a public-private partnership between the LearnLaunch Institute and the Massachusetts Department of Elementary and Secondary Education to catalyze personalized learning in the Commonwealth with the purpose of better preparing students for their future. The vision of the Massachusetts Personalized Learning Edtech (MAPLE) Consortium is to accelerate personalized learning enabled by technology in K-12 public education.

MAPLE energizes solutions to ensure student access to personalized learning. By building public will and connecting schools with necessary resources—professional learning, digital tools, funding strategies, and a rich evidence base—innovative models of teaching and learning will scale and student engagement and achievement will improve. MAPLE connects K-12 school districts across the innovation spectrum. It enables districts to learn more from each other, provides resources that strengthen local models, and nurtures the discovery of new ideas to transform learning and teaching. MAPLE highlights practices that work, helps educators define personalized learning in their schools, and provides an important forum for policy leadership and action.

Andover Bright Spot: *https://learnlaunch.org/maple-reports/andover-bright-spot-profile/*

MAPLE Bright Spot Profiles

For the past several years, various school districts in the MAPLE Consortium have focused on personalizing students' learning experience. Their journeys highlight the successes and challenges inherent in school improvement efforts, as well as the ongoing strategies to close student achievement gaps and to change learning and teaching to be more personalized, student-centered, and effective in reaching all students. Through its Bright Spot Profiles, MAPLE seeks to capture, document and share these narratives from the field so other educators may learn what is working and plan how they might proceed in their own endeavors towards student-centered and authentic learning.

LearnLaunch

LearnLaunch catalyzes a community that drives innovation to transform learning. We are an education innovation hub that connects and supports solution creators and adopters to increase student achievement. A 501c3 nonprofit, LearnLaunch offers learning opportunities and connections to individuals, support services to schools, and a district network. We believe edtech can expand access to learning that is engaging, personalized, and effective.

Authors

Ann Koufman-Frederick, PhD, Chief Academic Officer, LearnLaunch
André Morgan, PhD, Deputy Academic Officer, MAPLE
Amy Baron, President/Co-Founder, Convergent Learning

Acknowledgements

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EXECUTIVE SUMMARY

For the past several years, school districts in the MAPLE Consortium have focused on personalizing students' learning experience. Andover Public Schools (APS)—a high-performing, above-average-funded district—has been a member of MAPLE since 2016 and, like many other districts in the Commonwealth of Massachusetts, faces entrenched equity, achievement, and opportunity gaps. Through the leadership of Superintendent Sheldon Berman, Andover has committed to dedicate its resources to investing in personalized learning as a primary way to close these gaps.

In 2016, Andover partnered with the LearnLaunch Institute and the MAPLE Consortium to help the district leadership team understand personalized learning. Working with MAPLE, district leaders identified increased student engagement, greater teacher empowerment, and a more collaborative school community as essential elements to increasing personalized learning. Andover's shift to an innovative educational model oriented in personalized learning was made official in their 2016 strategic plan and is designed to achieve equity of opportunity and achievement for students.

To make this vision a reality, Andover developed a theory of action to guide its work across classrooms, which focused on achieving four outcomes:

- **Caring and culturally responsive classrooms**
- **Rigorous curriculum**
- **Progress monitoring**
- **Inclusive instruction**

Andover then developed key structures within its digital learning department, including new leadership and coaches, plus the creation of a digital learning program to support professional development. To organize its efforts and ensure continuous progress, the district adopted an agile approach to strategic planning through the use of "sprint teams," small groups that establish short-term goals and then regularly monitor, collaborate, and reflect on their progress, making just-in-time adjustments and continuous improvements. In this Bright Spot, we

In Andover, "personalized learning" incorporates:

- A **culturally responsive environment** where each student feels affirmed and valued
- **Flexible teaching-learning** approaches that give every student access to high-quality curriculum and that accommodate learning differences
- Engagement of every student in **learning experiences that are meaningful and authentic**[1]

describe and provide examples of Andover's efforts to personalize the learning environment and access to the curriculum, and to expand opportunities for authentic learning.

Over the previous three years, Andover has made significant progress towards personalized learning for all its students. The district has seen early gains in reading—particularly for students with disabilities and English learners. Although preliminary, Andover's Panorama Education survey data, Measures of Academic Progress (MAP) assessment results, and analysis of data from its student resume initiative provide additional evidence of gains as well as highlighting the challenges that lie ahead as Andover deepens and expands its personalized learning opportunities across the district. Equally promising, Andover has seen an encouraging uptick in teachers' and students' interest in personalized learning activities. For example, Andover's capstone course and projects have grown from one faculty member and five students in 2016 to 20 faculty members and over 200 students in 2018. The high school's global pathway track has expanded from one faculty member and 16 students in 2015 to six faculty members and nearly 200 students in 2018.

While still relatively early, Andover's leaders have gathered valuable lessons that may be relevant for other districts embarking on personalized learning at scale. The following are just some of the lessons district leaders shared:

- Listen first, to a diverse array of internal and external stakeholders, then collaborate on a thoughtful plan that resonates with the whole community.
- Use that thoughtful plan to guide the work.
- Establish sprint teams to implement the plan, ensure continuous progress and make adjustments in real-time.
- Establish an integrated, cross-cutting role at the district level (e.g. Director of Strategic Innovation) to give the work a home and ensure momentum.
- Model Universal Design for Learning (UDL)[2] and use it as a framework to guide implementation (not simply as a checklist).
- Empower teachers to work collaboratively (e.g. through vertical teams and with thinking partners) and lead the work.
- Ensure teachers have tools to help differentiate students' needs and are supported in using them.

As district leaders look to the future, they are working to evaluate progress and expand initiatives through implementation of a learning management system, expanded professional development opportunities for teachers, and ongoing participation in MAPLE to continue learning from other districts across Massachusetts and nationally.

This Bright Spot offers a roadmap and guideposts for districts considering a shift in their learning systems from traditional models to personalized learning strategies. If Massachusetts' students are expected to be full and successful participants in a dynamic global economy of the future, the proliferation and ubiquity of personalized learning efforts in districts across the Commonwealth will be an essential component to getting there.

INTRODUCTION

Education leaders across the U.S. are striving to think more broadly about innovation in terms of goals and accountability. Part of their motivation stems from the framework established in the Every Student Succeeds Act (ESSA) of 2015. In the Commonwealth of Massachusetts, educators have pondered how to help students meet the state's graduation requirements and how to better align schools to postsecondary education and the workforce.

With Massachusetts high school students performing near the top worldwide on the 2017 Program for International Student Assessment (PISA) exam (Khalid[3]), and with just two percent of its high school students dropping out (Wong[4]), the Commonwealth is widely regarded as having one of the best school systems in the nation. However, its public schools have not always succeeded for all students. Massachusetts' successes have been juxtaposed with stubborn achievement gaps and concentrations of poverty that made across-the-board strides all but impossible (Wong[5]).

Andover Public Schools is a suburban district with approximately 6,000 students, served by one high school, three middle schools, five elementary schools, and a preschool. In terms of size, Andover is in the top 20 percent of districts in Massachusetts and has a per-pupil expenditure that exceeds the Commonwealth's average. Andover Public Schools maintains a student-teacher ratio and a four-year graduation rate comparable to those of most of its peer districts. Although the majority of its students are white, the district has a growing English language learner population, representing about five percent of the student body.

Given the district's relative affluence, size, and location, upon his arrival Berman believed Andover Public Schools had the capacity to reach beyond the standard curriculum in order to address the learning needs of all students. He proposed a shift towards personalized learning.

In the same year ESSA was passed, Dr. Sheldon Berman assumed the helm of the Andover Public Schools in Andover, Massachusetts. Prior to coming to Andover, Berman had served as superintendent in the mid-sized district of Eugene, Oregon, and in one of the nation's largest urban districts in Louisville, Kentucky. Now his objective was to meet the learning needs of Andover students, to close existing achievement gaps, and to promote innovation that enhanced the meaningfulness of education for all students. To accomplish this goal, Berman introduced, and is gradually implementing throughout Andover Public Schools, a model of personalized learning that offers a pathway to a comprehensive redesign effort, while addressing gaps in equity of opportunity and achievement.

ANDOVER PUBLIC SCHOOLS STUDENT DEMOGRAPHICS

	AFRICAN AMERICAN	ASIAN	HISPANIC	NATIVE AMERICAN	WHITE	NATIVE HAWAIIAN, PACIFIC ISLANDER	MULTI-RACE, NON-HISPANIC
MA	9.2%	7.0%	20.8%	0.2%	59.0%	0.1%	3.8%
ANDOVER	2.2%	18.4%	6.2%	0.2%	70.0%	0%	3.0%

DOE.MASS.EDU, 2018-2019

SELECTED ANDOVER PUBLIC SCHOOLS STUDENT POPULATIONS

	FIRST LANGUAGE NOT ENGLISH	ENGLISH LANGUAGE LEARNERS	STUDENTS WITH DISABILITIES	HIGH NEEDS	ECONOMICALLLY DISADVANTAGED
MA	21.9%	10.5%	18.1%	47.6%	31.2%
ANDOVER	14.6%	3.8%	19.9%	29.3%	7.5%

DOE.MASS.EDU, 2018-2019

SHIFT TOWARDS PERSONALIZING LEARNING

Berman and Andover's district and school leaders realized that in order to transition Andover Public Schools to a model of personalized learning, collaborative efforts would be needed, both internally and externally. They wanted to focus on expanding educational opportunities for all students, including those from economically disadvantaged families. They also knew the efforts of their district would be more impactful if they were aligned with the work of other K-12 school districts and youth-serving non-profit organizations in the Commonwealth.

In 2016, Berman connected with LearnLaunch Institute, an education innovation ecosystem based in Boston, Massachusetts. LearnLaunch had been selected by the Massachusetts Department of Elementary and Secondary Education to form a network of public school districts, called the MAPLE Consortium, to promote student access to personalized learning in public schools.

Since partnering with LearnLaunch and MAPLE, Berman and his leadership team have realized increased student engagement, greater teacher empowerment, and a more collaborative school community. The district is in the midst of a culture shift from a more traditional learning environment to one that fosters innovation, collaboration, individual initiative and empathy. The organizing principle around this transition is an emphasis on personalizing learning.

DECIDING WHERE TO BEGIN

Andover's shift to personalized learning began when the district received a grant to purchase iPads for its middle schools. Teachers had not received a technology upgrade in several years, and many teachers struggled to adapt. According to Nancy Duclos, former assistant superintendent for curriculum and instruction, there were no defined expectations in the early years for how to implement digital learning. Almost by default, teachers led the way by exploring new instructional methodologies that engaged students more effectively, all the while sharing what they learned with other teachers. In this grassroots way, the district began developing its vision for blended and personalized learning (see Exhibit A: Blended Learning: Description and Rationale).

As technology gradually took hold, Andover's infrastructure evolved to accommodate it. Joanne Najarian was hired to assume the role of director of digital learning. When she began, Najarian had one staff member to help manage the entire district; however, as the demand for digital learning grew and the proliferation of digital tools and resources required more oversight, it was clear she needed to form a bigger team. Since joining Andover, Najarian has helped to design a department that now has an extensive and responsive website as well as digital learning coaches in every school building. The digital learning coaches are responsible for coaching, mentoring and supporting teachers in integrating technology tools and technology-based instructional strategies into their daily instruction.

Andover began implementing a 1:1 technology model in the 2015-2016 school year. The initiative began with the upper grades and reached full implementation with grades K-1 in 2017-2018. Since that point, all students and teachers in grades 2-12 have their own technology devices, with students in grades K-1 having access to a classroom set of tablets. In grades 2-5, Andover provides the devices for students, and in grades 6-12, there is a Bring Your Own Device (BYOD) plan. The integration of technology is a tangible and highly visible element of Andover's shift toward personalizing learning. While most students today are "digital natives," the use of technology is not always intuitive for teachers, many of whom first encountered computers and similar devices as adults. In years past,

DIGITAL LEARNING PROGRAM

Andover teachers attended a district-wide tech conference on the first day of the school year to share resources and ideas; thereafter, ongoing support was limited. More recently, the district's digital learning program has evolved into a hub for professional development and support, and is recognized as essential to instructional services.

Andover has digital learning coaches (DLCs) in every building. The DLCs are technology specialists and teachers who already have technology expertise and an interest in supporting other faculty in their use of instructional technology. They work with classroom teachers to integrate applications into

their instruction, collaborate with teachers on design thinking challenges, and support teachers in the use of robotics and coding initiatives.

Joanne Najarian's leadership as director of digital learning is critical in ensuring faculty and students have the tools they need to be successful. Her responsibilities include overseeing weekly face-to-face technology trainings, called TechBytes.

By far the most used resource is the robust digital learning department website, developed and managed by Najarian. The website encompasses everything from evaluation rubrics to research articles. The extensive professional development on the site includes:

- **Self-Paced Learning Modules**: Connected to the ISTE standards for teachers, these online asynchronous modules review digital citizenship and responsible use of social media.
- **Technology Integration Rubrics**: This resource guides teachers in deciding whether a particular technology is worth integrating into the classroom.
- **Tech Tutorials**: Each tutorial is structured as a "how to" guide, with hands-on practice, to help teachers integrate digital technologies within the classroom.

The digital learning department measures its success through regular surveys. According to the latest survey, teacher and student satisfaction is very high (see Exhibit B: Technology & Learning User Satisfaction).
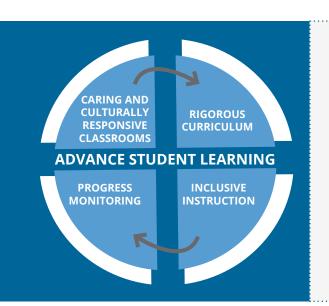
DISTRICT LEADERSHIP FOR SCALING PERSONALIZED LEARNING

Technology was only a first step in the move towards personalized learning. District and school leaders recognized the need to introduce innovative ways of thinking about student learning. At the same time Berman was brought on board as superintendent, the district hired Steve Chinosi as director of strategic innovation—a new position created by the previous superintendent Marinel McGrath. Then in 2016, Andover hired Dr. Sara Stetson, who brought extensive expertise in universal design for learning. Initially a department director, Stetson now serves as assistant superintendent for student services. With Najarian, Chinosi, and Stetson in key positions, Berman had the leadership structure in place to prioritize moving the district towards authentic, intentional, and personalized learning experiences. The interrelated goals of these leaders were to bolster innovation in the Central Office, support a district-wide move towards design thinking, increase equitable access to rich learning experiences, and change the way the district carried out strategic planning.

AGILE STRATEGIC PLANNING AND PROGRESS MONITORING

The year 2016 marked the next phase of the shift towards personalized learning in Andover Public Schools. At the end of Berman's first year as superintendent, the district's prior five-year strategic plan was brought to a close. Following the process applied in the technology industry, Andover's leadership team decided to do something innovative with their strategic planning process by adopting an agile approach. The team wanted the flexibility to try new ideas and to effect rapid, incremental change, while continuously making adjustments in order to achieve the greatest progress. According to Chinosi, "Agile planning fosters a cross-district collaborative approach where PK-12 leaders join forces to focus on critical areas of need through 'sprint teams' that maintain progress on and continuously adapt their efforts."

Andover's first step in employing an agile approach to strategic planning was to articulate a "theory of action," a set of statements that outline the approach needed to achieve the desired results (see Exhibit C: Andover's Theory of Action). Designed "to promote growth in foundational content knowledge and thinking skills that enable students to take ownership of their learning,"[6] the Andover theory of action focuses on four specific goals.

GOAL 1: Create safe, caring and culturally responsive classrooms and schools, and partner with families and the community to support students' academic growth and their social, physical and emotional wellbeing.

GOAL 2: Ensure that every student engages in a rigorous curriculum that is implemented consistently within and across the schools.

GOAL 3: Provide inclusive instruction that engages every student in authentic learning experiences, demonstrates the power of effective effort and fosters inquiry, creativity and positive risk taking.

GOAL 4: Monitor student progress diagnostically and plan instruction after thorough and thoughtful data analysis to ensure each student reaches proficiency.

ANDOVER'S GOALS TO ADVANCE STUDENT LEARNING[7]

In order to achieve these goals, in 2017 the district leadership team established and launched a set of seven "sprints" to move the district forward by means of agile strategic planning.

1. A **social-emotional learning and culturally responsive pedagogy** (SEL) sprint focused on professional development for staff that advances the goal of caring and culturally responsive classrooms and schools (goal 1).

2. A comprehensive **mental and behavioral health** sprint focused on the restructuring of services in these areas to advance caring and culturally responsive classrooms and schools (goal 1).

3. An **Andover High School schedule implementation** sprint that advances caring and culturally responsive classrooms and schools by building an advisory and support time block into the schedule (goal 1) and that advances curricular rigor through a year-long rotating schedule (goal 2). A more extensive discussion of the advisory block appears on page 15.

4. An **innovation** sprint that fosters authentic student learning experiences in order to move curricular rigor and meaningfulness forward (goal 2).

5. A **literacy** sprint that addresses reading challenges and selects a new approach to teaching literacy in order to advance curricular rigor (goal 2) and inclusive instruction (goal 3).

6. An **accessibility** sprint that builds on the 1:1 initiative; the purchase of digital applications, texts and media; and the district's professional development in blended learning in order to support inclusive instructional practices (goal 3).

7. A **diagnostic data** sprint that focuses on the implementation of a variety of diagnostic assessments and data analyses to ensure the district is adjusting instruction to most effectively meet students' individual needs through student progress monitoring (goal 4).
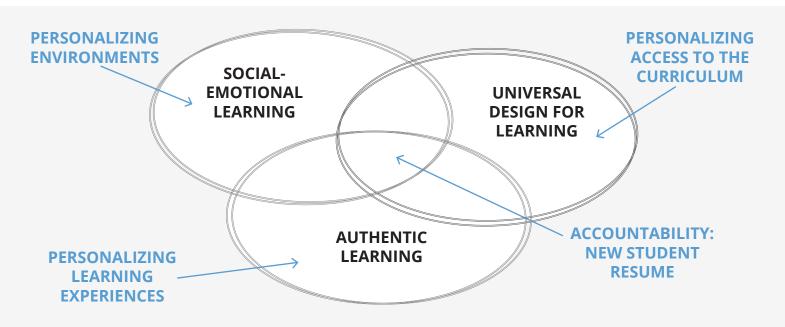
In agile planning, a "sprint" incorporates regular progress reporting, feedback, and adjustments. This approach is in contrast to traditional "action steps," which may be articulated and examined only once a year in a typical strategic plan. In addition to their regular team meetings, sprint teams report periodically in three forums: 1) Administrator meetings, 2) Superintendent's Administrative Team meetings, and 3) School Committee meetings.

According to Berman, "Our sprints enable administrators and teachers to take leadership roles and move the district forward, while allowing for just-in-time adjustments that enhance our effectiveness." Personalized learning aligns well with Andover's goals and theory of action. The district defines personalized learning to encompass three key components:

THE ANDOVER PUBLIC SCHOOLS DEFINITION OF PERSONALIZED LEARNING

Personalized learning aligns well with Andover's goals and theory of action. The district defines personalized learning to encompass three key components:

- **Personalized Environment**: In alignment with the goal of creating safe, caring and culturally responsive classrooms and schools, and led by the social-emotional learning sprint team, the district strives to create time and space for individual students to carve out their own place and path in a school and classroom community where each student feels affirmed, valued and included.

- **Personalized Access to the Curriculum**: In alignment with the goal of providing inclusive instruction, and led by the accessibility sprint team in accordance with the principles of universal design for learning,[8] the district seeks to provide flexible learning environments that can accommodate individual learning differences.

- **Personalized Learning Experience**: In alignment with the goal of engaging all students in authentic learning experiences, and led by the innovation sprint team, the district pursues learning that is meaningful and authentic. "Authentic learning engages students in the collaborative creation of products or solutions that require extended focus over time, match the complex real-world tasks and investigations of professionals in practice, and integrate knowledge from multiple disciplines." [9]

PERSONALIZING ENVIRONMENTS

PERSONALIZING ACCESS TO THE CURRICULUM

SOCIAL-EMOTIONAL LEARNING

UNIVERSAL DESIGN FOR LEARNING

AUTHENTIC LEARNING

PERSONALIZING LEARNING EXPERIENCES

ACCOUNTABILITY: NEW STUDENT RESUME

ANDOVER'S DEFINITION OF PERSONALIZED LEARNING

To promote students' accountability for their involvement in personalized learning, Andover has adopted a student resume process. The resume, standing at the intersection of the three components of personalized learning, provides individually designed documentation of the authentic experiences and work products a student has completed. The student resume can take many forms, from a portfolio of work or capstone research to an online TED-style talk or performance. It is designed to give students ownership of their learning while grounding their work in an authentic product that they can carry beyond the schoolhouse doors. A more extensive discussion of the student resume appears on page 22.

The Andover definition of personalized learning includes elements similar to those endorsed by MAPLE (see illustration). Since the MAPLE definition resonated with Andover, the district leadership decided in 2016 that a partnership would further facilitate its transition to personalizing learning.

PERSONALIZING THE LEARNING ENVIRONMENT

Innovation in Andover Public Schools is encouraged and supported not only by the administration and School Committee, but also by the district's local foundation, the Andover Coalition for Education. ACE provides approximately $100,000 each year to launch innovative strategies. Over the past three years, several initiatives for personalizing learning have been rolled out across all levels K-12.

Students open the day with morning meeting in a 5th grade class at Sanborn Elementary School.

RESPONSIVE CLASSROOMS

Personalizing the environment has meant a consistent effort to support programs that address social-emotional learning so students feel valued, known, and included. Core to this effort is building a strong sense of community and connection among students and adults in each classroom and school. This takes the form of teaching social skills directly with such programs as Open Circle and Second Step; building inclusive classroom communities through such programs as Responsive Classroom at the elementary level, Where Everyone Belongs at the middle school level, and the high school's advisory program; and engaging students in community service and service-learning experiences that provide students with voice and empowerment, while enabling them to demonstrate their social-emotional skills within the Andover community. The middle schools are currently exploring additional SEL programs to implement, along with a schedule change in 2020.

In addition to the effort to create safe and caring classrooms, the district has focused on ensuring that classrooms are culturally responsive. As part of a new social studies curriculum, which is discussed on page 16, students will focus on the concepts of community and culture and will study their own diversity and that of countries around the world. In addition, to enhance the district's literacy program, classroom libraries are being purchased that include literature representing authors from different countries and cultures, as well as having characters in this literature who reflect diversity. All the secondary teachers have participated in a yearlong professional development program on cultural proficiency with a focus on implicit bias and micro-aggressions. This program will be provided to the elementary staff in the 2019-2020 school year. All of these efforts are designed to ensure that students see themselves in the curriculum and know that their differences enrich the learning for everyone.

Students participate in a design challenge at Andover High School's annual Global Pathway Summit.

H BLOCK - PERSONALIZATION IN HIGH SCHOOL

Since September 2017, students, teachers, and the high school community have engaged in a new personalization period called H Block, based on a rotating eight-day schedule. The schedule evolved over a four-year period of planning and testing by a committee of teachers and administrators. The H Block periods last 60 or 75 minutes and students typically participate in an H Block session five times in each eight-day cycle.

H1 is an advisory opportunity for each student to have—in addition to the student's guidance counselor—a faculty member who acts as a long-term mentor. This faculty member gets to know the student well and provides assistance throughout the four-year high school experience, both individually and within the context of a consistent and supportive peer group. The H1 advisor works with a group of 15 to 17 advisees and helps them make positive academic, social, and emotional choices at the high school, while building a sense of community among the cohort of students. The Andover High School staff also designed a community-building curriculum for the H1 component to enhance students' experience at each grade.

The H2 through H5 blocks allow students and teachers to personalize their academic school day. Students choose which teachers they need to visit in order to delve more deeply into course content, make up work, receive support, work on projects in teams, or explore areas of mutual interest. Additionally, during H2 through H5, the high school hosts a variety of meetings and speakers on topics of interest to the school community, and the guidance department offers grade-based programs and offers meetings with representatives of colleges.

COMMUNITY SERVICE AND SERVICE LEARNING

Community service and service learning are strategies that deepen students' social and emotional skills by giving students an opportunity to demonstrate these skills as well as the values of empathy, compassion and care in the world around them. Teachers also use community service and service learning to develop leadership and connect students with organizations and individuals who are making a difference. Service experiences are common in every Andover school and range from mentoring students with disabilities to food and clothing drives to environmental cleanup and advocacy. These experiences provide students with voice and choice and foster a sense of empowerment.

PANORAMA EDUCATION SURVEYS

Monitoring progress in the social skill development of students and in the culture and climate of schools is important to making progress in social-emotional learning. In 2017, the district began using surveys from Panorama Education to collect and reflect on data in these areas. Initially, the surveys were administered in grades 3 through 8 on scales of engagement, safety and connectedness to school. In 2018, the district expanded the surveys to grades 3 through 12 and added scales on

growth mindset, grit and social awareness. The faculty study the survey results and strategize how to strengthen their efforts to promote safe, caring and culturally responsive schools.

PERSONALIZING ACCESS TO THE CURRICULUM

UNIVERSAL DESIGN FOR LEARNING

To personalize access to the curriculum and give students choices that better meet their needs, Andover's professional development has focused on strategies that promote universal design for learning. In 2017, the district opened the school year with a presentation on UDL and engaged the entire faculty in generating UDL classroom strategies that use multiple means of representation, engagement and expression—the central principles of UDL. The list of strategies was disseminated to all teachers, and administrators followed up with UDL-focused classroom observations and consultation. Later, the departments of student services and digital learning collaborated in offering a blended face-to-face and online professional development course in UDL that enrolled teachers from all grade levels.

Also in 2017, the student services department, under the leadership of Stetson, launched an online magazine for teachers and parents. Entitled *ACCESS-ABILITY*, the quarterly publication exemplifies universal design strategies for accessing print and visual material, as well as providing strategies that teachers and parents can use to support student learning.

The district also makes available software applications such as *Texthelp* to support not only students with disabilities, but any student who needs extra support to understand curricular content.

ONE COMMUNITY, ONE NATION: AN INTEGRATED AND PERSONALIZED CIVIC EXPERIENCE

One concrete example of the district's efforts to create a universally designed curriculum is the approach it has taken to integrate elementary social studies, literacy and the arts in a curriculum project entitled *One Community, One Nation.* The curriculum is designed around the core concepts of

community, culture and civics. The ultimate goal is to nurture in all students a personal confidence in and commitment to civic engagement. It is designed to use social studies themes to integrate with and build upon students' literacy development through the use of children's literature and nonfiction books for basic literacy program components such as interactive read-alouds, independent reading, readers workshop and writers workshop.

The new social studies program also integrates visual and dramatic arts as vehicles to deepen and demonstrate understanding and offer multiple means of representation of the curricular concepts. Its inquiry-based approach personalizes the curriculum by enabling students to explore the readings and artifacts that most interest them on each topic, thereby offering students multiple means of engagement. By integrating the visual and performing arts, *One Community, One Nation* provides multiple means of expression for students to demonstrate understanding. In this way, it offers a rich, integrated and personalized learning experience for students and engages them in making choices about what they want to learn, thereby encouraging them to become lifelong learners.

PERSONALIZING LEARNING THROUGH AUTHENTICITY

To further personalize the act of learning, the district initiated a variety of strategies that give students opportunities to pursue areas of interest and express their creativity in authentic and meaningful ways. These strategies include design thinking, capstone projects and innovation labs. They exemplify the district's definition of authentic learning:

Authentic learning engages students in the collaborative creation of products or solutions that require extended focus over time, match the complex real-world tasks and investigations of professionals in practice, and integrate knowledge from multiple disciplines.[10]

DESIGN THINKING FOR CURRICULUM PROJECTS

Having accepted the unique and somewhat ambiguously defined position of director of strategic innovation, Chinosi's first step was to introduce design thinking[11] into various aspects of the education ecosystem and to support the district in implementing maker spaces in each school. According to Chinosi, design thinking serves as an implementation strategy for empathy and experimentation, promoting a collaborative and problem-solving culture. Chinosi has helped implement design thinking at the elementary, middle and high school levels, as well as in the district's approach to professional development.

Across Andover Public Schools, we saw opportunities to design new and unique learning experiences—in social, emotional, and intellectual areas—for our students and our faculty. Having spent two years training small teams of our faculty and administrators in Stanford's Design Thinking approach to learning, two questions arose: "How might we build learning cohorts—teams of students and faculty—that function at and across grade levels and our ten school buildings?" and "How might we engage students and faculty in our emerging definition of 'authentic learning?' "

Steve Chinosi, Director of Strategic Innovation

Andover faculty participate in the Introduction to Design Thinking professional development course.

Andover's initial design challenge was to think differently about supporting teachers with responsive professional development. The district knew that unique professional development that met teachers where they were in their professional practice would help all educators meet the dynamic needs of all students in a much more engaging and effective way. Andover encourages teachers to cultivate their own and each other's talents in order to build wider expertise within the system over time. According to Chinosi, teachers expand their skill sets, then share with other teachers. He believes it is not about being the "expert"; rather, the emphasis is more along the lines of continuous personal improvement and sharing with colleagues what works and what does not.

Empathy is the first step in design thinking—living in the shoes of another so that one can see the problem to be solved from that person's perspective. Empathy is also critical to creating caring classroom communities in which students feel known, valued, and included and in which they can feel connected to others and have an authentic voice in solving classroom issues. One key step in personalization, therefore, became the creation of classroom communities that enable students to experience connection and voice, where they receive the personal attention and recognition to grow and take the risks necessary for learning.

To build empathy, Andover educators prioritize building personalized classroom communities through social-emotional learning. The goal is for every student to have a personal relationship and sense of connection with teachers and classmates and to recognize themselves as valuable and contributing members of their school community. In addition to morning and advisory meetings that build a sense of community within the classroom, during the first three weeks of each school year, participating teachers assign team challenges to their class or classes. The challenges provide an opportunity for teachers to observe and assess their students. For example, one team challenge had students build a physical tower with a set of given materials. Teachers used this activity as an opportunity to learn about their students' characteristics (e.g., Who were the leaders? Who were the introverts and extroverts? How well did they collaborate?). Then they incorporated these observations into their strategies for building teacher empathy and student collaboration throughout the school year.

West Elementary students learn the basics of computer programming with the Code and Go mice. APS students as early as kindergarten engage in computer science through creative problem solving.

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EXAMPLE CURRICULUM PROJECTS

Design thinking has become a consistent element in enhancing a variety of curricular areas, using the school's maker spaces to give students hands-on experiences with design. Here are a few examples:

Plymouth Colony – Integrating the science standard of temperature loss, the math standard of graphing, and the social studies standard of colonial history, students are asked to put themselves in the place of Plymouth colonists and are challenged to figure out, "How are you going to survive the first winter?" Students build three-dimensional houses and graph the projected temperature loss over time. By focusing on an authentic task to explore real-world challenges, teachers have found a motivating way to teach the curricular standards.

Paul Revere's Ride – Students in grade 3 develop 3D prototypes to answer questions such as, "How might you help Paul alert more colonists?" Students are expected to develop an understanding of timing, road conditions, and risks of the British catching them. Students use books to study the topic and then design strategies based on the conditions Paul Revere probably faced.

Arcade Games – In 2017, Sanborn Elementary School experimented with an all-school design thinking challenge by having students work in teams of four or five to design arcade games. At the end of the project, parents came to the school one evening to play the games their children had designed. That evening resulted in the largest parent turnout the school ever experienced at any event. Teachers continue to do Design Day planning on early-release days.

Steve Chinosi working with students to prepare their arcade game for the evening presentation.

SENIOR CAPSTONE COURSE

The Senior Capstone is an optional, yearlong course offering that allows 12th graders the autonomy and independence to focus on an area of interest. It counts toward students' English credit and requires extensive research and writing. The projects can range from creative writing to investigation of social issues to engineering and programming. Pioneered with five students in 2016, the course now attracts about a quarter of the senior class. The capstone projects are showcased at the end of each year through students' TED-style talks and presentations to parents and the community.

CAPSTONE PROJECTS AND PROJECT-BASED LEARNING

Having observed the success of capstone projects at the high school level, Andover elementary and middle schools now offer capstone projects for the 5th and 8th grades. These schools also make extensive use of project-based learning, such as the 7th grade teacher who teaches a unit on physics by having students construct and test a model roller-coaster park. Another 7th grade ELA teacher turns her classroom into a publishing company in order to teach writing.

Students share their capstone literature reviews with each other.

Students visiting from Korea participate in an electronics design challenge in Andover's iLab.

INNOVATION LAB

The innovation lab is a one-semester class that takes place in a new physical area carved out of the Andover High School library. The class starts with a design "boot camp" in which students learn how to use the Stanford model of design thinking. The course then proceeds to explore a particular theme. In the second year the innovation lab course was offered, students designed a computer-driven, home-based hydroponic system for growing food that won first place in an international technology competition hosted by China.

In 2017-2018 and again in 2018-2019, the theme has been "wearable technology." In the first module on wearable technology, students developed skills related to the theme,

such as clothing design and sewing. The first project was a light-up pin, in which students were challenged to sew a circuit by hand to activate an LED with a three-volt coin-cell battery. After this basic assignment, the class worked in teams to design and build high five collector gloves, further developing their skills in working with conductive materials and understanding and programming microcontrollers, such as the Arduino LilyPad. Students also spent time researching wearable technology innovations to discover what they would like to tackle for their final projects. They used the design process to brainstorm their final project prototype ideas as a class, and then broke into teams based on interest. Some final projects included a biker jacket with turn signals, light-up sneakers, a temperature-controlled sleeve, a phone-charger glove powered by solar panels, a glove that controls a laser harp, and a wearable suitcase that is controlled by a motor. Applying collaboration and creativity, students worked to complete their final prototypes; they learned through building, testing, redesigning, and thoughtful teamwork.

GLOBAL PATHWAY

The global pathway is an integrated, multi-year track in which students take courses and engage in experiences focused on the United Nations Sustainable Development Goals. The pathway culminates in a Global Scholar certification on a student's transcript. The track includes required courses in 9th and 10th grades, with more flexibility in 11th and 12th grades for students to take courses that fit their areas of interest. Community service is also a key element of this track, and some students go abroad to experience other cultures. A particularly significant breakthrough was the arrival of the global portal, an interactive full-body video connection that allows people in Andover to talk and collaborate live with people all over the world. As the first district in the country to implement this innovation, Andover is using the portal to enable students to experience other countries and cultures more directly and to initiate international collaborations with students in other countries.

Fourth graders at High Plain Elementary School use Andover's global portal to discuss music with students in Gaza.

STUDENT RESUME

In addition to a report card, Andover is developing a new "student resume." Students will build their own resumes to answer questions such as, "What was the most meaningful learning experience you've had this year?" and "How would you demonstrate what you have learned through that experience?" The resume will also provide students with an opportunity to present their growth in leadership, service and other areas that are important reflections of who they are.

The new student resume will encompass far more than standardized test scores and course grades. It is being designed to demonstrate students' commitment to something meaningful. It is meant to show that they can apply knowledge in a real-world setting and produce something that reflects persistent effort over time. It also can demonstrate the learning they have acquired through such broad extracurricular experience as service to others, exploration in other areas of the world, and leadership. The resume is an opportunity for students to show they are serious about their education, a career interest and making a difference, and they have demonstrated that seriousness by producing authentic and meaningful work.

Not only is the student resume a new form of accountability, it also helps students define themselves and their goals. For high school students, the resume can be used in their college application essays. For elementary students, it can help answer the question, "What interests me and how am I growing?" The hope is that because it is reflective of what is most meaningful in a student's progress, this resume will eventually become more important to students, their parents, and potential colleges than the traditional report card and transcript.

EQUITY OF OPPORTUNITY

Equity of opportunity is achieved when the climate of a school is culturally responsive and inclusive, when the curriculum is accessible to all, when learning is authentic and meaningful and enables students to find and immerse themselves in the experience, and when students receive the support they need to achieve at high levels. Each of the elements of Andover's personalization strategy is designed to achieve that equity of opportunity—from SEL that promotes responsive and caring classroom environments, to accessibility tools and UDL instructional strategies that provide the access ramps to the curriculum, to authentic learning experiences that provide choice and voice enabling students to pursue their interests, and to the new student resume that reflects and documents what students value in their own achievements.

Equity is key to *One Community, One Nation* in its focus on culture and community. It is key to the diversity of literature being purchased for classroom libraries. It is key to H block in the opportunity it provides for additional support for students who need it. It is key to capstone in providing students with the opportunity to explore topics of interest to them. It has also been central to the implementation of curriculum in other areas. One example of focusing on equity of opportunity was

Andover's introduction of the FOSS science program across grades K-5. The district paired it with their design-maker studios to ensure that curricular standards were wrapped around "low-threshold" entry points—hands-on activities that ensured access and equity for all of their diverse learners. District leaders knew that for many of their ELL students, language acquisition was an obstacle to engaging and succeeding with content standards. As a result, they worked on designing integrated, hands-on, inquiry-based projects to level the playing field, while maintaining rigorous curricula and responsive instruction.

Results are already emerging that this approach is having an impact on student achievement. One sign of those gains is that reading scores on the Massachusetts Comprehensive Assessment System have risen for elementary students, particularly for students with disabilities. In addition, English language learners have demonstrated significant progress, with 48 percent of ELLs attaining proficiency on ACCESS in 2018 and 85 percent making progress.

TEACHER EMPOWERMENT

Chinosi believes that successes in Andover are a result of "the power we give our faculty." Berman adds, "We are liberating the passions of teachers and engaging them in problem solving." The administration makes a point of giving teachers leadership roles, since classroom teachers generally have a limited professional trajectory. This form of teacher empowerment has been critical in the mind-shift process, getting staff excited and committed to pursuing personal growth in the midst of their many responsibilities.

Other professional learning opportunities include the ability to serve on advisory committees and to make decisions about how to spend open-share time. For example, when polled about what to do in the monthly grade-level meetings, elementary teachers decided they would use the design-thinking process to select standards they would normally cover and personalize them. In order for teachers to learn and use design thinking, Andover sends a different group of ten faculty members across grades K-12 to Detroit each summer to participate in the Henry Ford Learning Institute, a Stanford Design program.

The new H Block schedule at the high school provides teachers with time within the school day to work in professional learning groups (PLGs). In their PLGs, teachers are pursuing a variety of school and district initiatives, including collaborating on common assessments and developing interdisciplinary curricula.

Just as personalization is important for students, it is essential for teachers and other staff. The freedom and ability to pursue areas of interest, explore new terrain, select how they want to focus their PLG, and take leadership roles in curriculum development and instructional improvements are essential elements in building faculty capacity and in empowering them to take the risks needed for innovation.

PERSONALIZING LEARNING IS WORKING

Over the previous three years, Andover has made significant progress towards a personalized learning environment, personalized access to the curriculum, and a personalized learning experience for all its students.

Andover educators can see for themselves that their strategies for personalizing learning are enabling students and teachers to learn in different ways using different tools, connecting students' talents and interests with the curriculum, allowing students to develop their own essential questions around content, and connecting students with a community outside of the classroom to support learning.

Although the early gains in reading—particularly for students with disabilities and English language learners—are encouraging, the most significant gains are in the growth of many of the programs that have been launched. For example, the capstone initiative began in 2016 with one teacher and five students. In 2018, it involved 58 twelfth graders, 106 eighth graders, 45 fifth graders, and 20 faculty members. The global pathway started in 2015 with 16 students and one faculty member; by 2018, it involved 193 students, six faculty members, one coordinator, and a parent advisory board. The enthusiasm for *One Community, One Nation* has stretched across all the elementary schools and the School Committee has approved it as the district's curriculum for social studies. Within three years of introducing Responsive Classroom, virtually all of the elementary classroom teachers and many specialists have voluntarily taken the training and are using morning meetings to start the day. The interest in UDL has also increased markedly. These trends demonstrate positive attitudes towards personalization and commitment to ensuring that the district reaches all children. Although too early for use at this point, Panorama Education survey data, Measures of Academic Progress assessment results and analysis of data from the new student resume represent opportunities for examining gains and challenges as the district moves forward.

LESSONS LEARNED

District leaders point to a number of factors that are contributing to their success—and some challenges they still face.

According to Superintendent Sheldon Berman:

- Having someone in a leadership position who can cross curricular areas, such as Director of Strategic Innovation Steve Chinosi, paves the way forward because of the time the person has to devote to facilitating the work, but also because the person has the opportunity to reach out to teachers and to the larger community.

- Sprints are empowering because we are able to refine the work, test the waters, and make just-in-time adjustments.

- The district's ability to empower faculty and let teachers lead teachers enhances the chances of success as teachers take ownership of the initiatives.

According to Director of Strategic Innovation Steve Chinosi:

- A key feature of our personalized learning work is a persistent focus on our theory of action and our definition of authentic learning as guiding reference points.

- Establishing vertical teacher teams across grade levels (for example, our 5th-8th-12th grade faculty team to collaboratively design and develop capstone curriculum and instructional strategies) creates a district culture of professionalism and a collective effort toward keeping teaching and learning at the core of our work.

- The growth of our personalized programs is a result of a careful plan to design learning experiences that resonate with our community. Extensive observational work and listening precedes curriculum development. We take our time to understand both explicit and implicit needs and the expectations of our students and their families.

According to Director of Digital Learning Joanne Najarian:

- Technology has allowed us to significantly scale personalized learning. Teachers leverage technology to gain detailed and timely knowledge of their students that guides their classroom instruction.

- The use of technology has allowed teachers and students to focus more on their creativity, critical thinking, and collaboration skills—moving toward student-centered learning communities.

- Personalized learning has encouraged teachers to bring more robust, useful, relevant, and varied materials into their classrooms to meet all students' learning styles.

- With tools such as *Texthelp, Dreambox*, and Measures of Academic Progress (to name a few), teachers are better able to differentiate instruction and are more aware of students' needs.

- Enabling teachers to work collaboratively, and providing them with thinking partners, has been key to their professional growth.

According to Assistant Superintendent of Student Services Sara Stetson:

- Modeling Universal Design for Learning is a critical component of implementation. Though we were able to engage the entire school community on the topic of UDL on opening day, we struggled to develop a universally designed activity for 900 people. An activity that could be presented in multiple formats with multiple access points and choices, while complicated, might have delivered a more concrete message about how UDL actually works.

- Initially, UDL may feel like "differentiation overlaid with technology." By focusing on the big idea of design thinking, we have been able to illustrate the intersection between personalized learning initiatives and the ways in which those initiatives fit into the UDL framework. For example, during the UDL course, design thinking was introduced and modeled early and often, providing teachers with real-life examples of how UDL is design thinking applied to curriculum, rather than differentiation strategies applied to students.

- When viewed for the first time, the UDL guidelines may seem like a list of strategies. To the contrary, the guidelines are a system of checkpoints to gauge one's thinking about the design process. As such, UDL is not a new initiative, but a framework for developing innovative, inclusive, rigorous, and emotionally safe environments. In other words, it is important to introduce UDL as part of the fabric of the thinking process of an organization, rather than a list of things we "do."

- As with any design thinking framework, UDL starts with empathy and understanding our students' lived experiences. Districts can spread UDL by exploring what teachers are doing to provide multiple access points and choices, and then sharing those stories.

ANDOVER'S PERSONALIZED LEARNING JOURNEY

2015

Hires Superintendent Berman to lead district

Hires Chinosi as Director of Strategic Initiatives to spearhead innovation initiatives and design thinking

Develops theory of action to advance student learning

Wins grant to purchase iPads for middle schools

Begins 3-year process to implement 1:1 technology model in K-12

Initiates Global Pathway

Launches extensive K-12 PD in social-emotional learning

2016

Hires Stetson as Student Services Director to support individualized instruction and services

Develops agile strategic planning that marked shift from traditional models to personalized learning for students

Partners with the MAPLE Consortium

Pioneers Senior Capstone Course

Introduces the Innovation Lab

Builds the Digital Learning Team and Digital Learning Program to support PD

Begins using Measures of Academic Progress (MAP)

2017

Begins rolling out a design-thinking process and implementing personalized learning models in schools

Launches 7 sprint teams

Begins district-wide PD in Universal Design for Learning

Incorporates H Block into high school schedule

Publishes first issue of *ACCESS-ABILITY*

Begins using Panorama Education surveys

Introduces capstone projects in high school and project-based learning in elementary and middle schools

Makes *Texthelp* available to all students in all grades

Hosts Design Day

Offers Innovation Lab Course

2018

Begins scaling personalized learning models in schools

Begins expanding spaces for flexible and collaborative learning

Introduces the Global Portal

Hosts MAPLE Learning Tour

Initiates development of *One Community, One Nation*

2019

Joins digitalCURATE, a MAPLE program, to streamline edtech management

WHAT'S NEXT?

Andover Public Schools continues to push forward on its personalized learning initiatives. As the district makes use of the LEARN Platform—an edtech management and rapid-cycle evaluation system—to evaluate progress, school and district leaders hope to build on and strengthen each of the initiatives. The growth has been exceptional and the focus is now shifting to deepening and enriching these efforts. The district will also be looking at learning management systems in an effort to standardize the learning platform system-wide. The district will further deepen its professional development program to continue to build the capacity and enthusiasm of its staff. Lastly, district leaders will be looking to other districts in the MAPLE Consortium and around the country that are pursuing personalization in order to explore new ideas and innovations that will improve learning opportunities for all students.

"Personalization gives renewed meaning to the work we do with students and to the students themselves. The combination of personalizing the learning environment, access to the curriculum, and learning itself is enabling both staff and students to pursue their own interests while being more effective at achieving their goals. The best part is that this is an exploration and adventure that encourages us to reach beyond the comfortable present to a challenging but exciting educational future."

Sheldon Berman, Superintendent of Schools

| ENDNOTES

[1] APS definition of Personalized Learning.

[2] For more information on Universal Design for Learning (UDL), go to http://udlcenter.org/

[3] Khalid, A. (2013). Mass. students among top-performing in global exam. Retrieved from: https://www.wbur.org/news/2013/12/03/massachusetts-pisa-test-results/

[4] Wong, Alia (2016). What are Massachusetts public schools doing right? Retrieved from: https://www.theatlantic.com/education/archive/2016/05/what-are-massachusetts-public-schools-doing-right/483935/

[5] Ibid.

[6] APS Agile Strategic Plan: Accomplishments for 2017-2018, presented June 2018 by Sheldon Berman, Ed.D., Superintendent of Schools, p. 4.

[7] The Andover Way: A Culture of Learning, Teaching and Leading, p. 11.

[8] For more information on Universal Design for Learning (UDL), go to http://www.udlcenter.org/

[9] APS definition of Authentic Learning.

[10] Ibid.

[11] For more information on Design Thinking, go to http://dschool.standford.edu/resources/

[12] APS Office of Digital Learning Website. Retrieved on September 15, 2018.

[13] Definition adapted from Michael Horn of the Christensen Institute.

[14] APS BrightByte Technology & Learning User Satisfaction Dashboard. Retrieved on January 1, 2018.

[15] APS Office of Digital Learning Website. Retrieved on September 15, 2018.

EXHIBIT A

Blended Learning: Description and Rationale (posted in August 2017)[12]
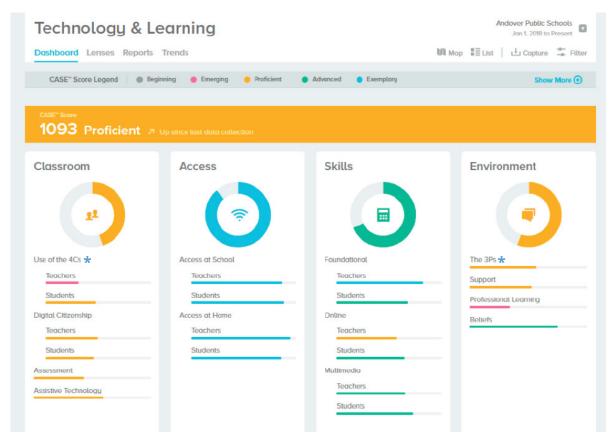
Blended Learning represents a fundamental shift in the classroom and involves leveraging technology to afford each student a more personalized learning experience, meaning increased control over the time, place, path and/or pace of her/his learning.[13]

Blended Learning is a balanced opportunity...

1. It expands student learning time. Learning can happen anytime and anywhere.
2. Teachers need to focus on human interaction.
3. It promotes student ownership. Students become agents of their own learning process with greater access to tools, resources and progress data.
4. It provides instruction that matches students' skills. Blended learning options provide personalized instruction that allows students to work at their own pace.
5. It prepares students to be good digital citizens.

EXHIBIT B

Technology & Learning User Satisfaction[14]

ANDOVER'S BRIGHTBYTE TECHNOLOGY AND LEARNING DATA FOR THE 20198 SCHOOL YEAR

* *4Cs: Communication, Collaboration, Critical Thinking, and Creativity*
3Ps: Policies, Procedures, and Practice

EXHIBIT C

Andover Public Schools Theory of Action[15]

When we collaborate to:

- Create safe, caring, and culturally responsive classrooms and schools, and partner with families and the community to support students' academic growth and their social, physical and emotional wellbeing;

- Ensure that every student engages in a rigorous curriculum that is implemented consistently within and across schools;

- Provide inclusive instruction that engages every student in authentic learning experiences, demonstrates the power of effective effort and fosters inquiry, creativity and positive risk taking; and

- Monitor student progress diagnostically and plan instruction after thorough and thoughtful data analysis to ensure each student reaches proficiency . . .

Then all students will:

- Demonstrate academic growth in foundational content and skills;

- Communicate effectively, think critically, problem solve creatively, work collaboratively, and evaluate objectively;

- Be self-directed and persevering agents of their own learning; and

- Demonstrate cultural awareness, an appreciation of self, empathy toward others, a sense of responsibility, and commitment to civic engagement . . .

So that all students are prepared to:

- Be lifelong learners able to pursue their personal and professional goals;

- Face adversity and ambiguity with intellectual skill, open-mindedness, adaptability, courage and confidence;

- Make informed, just and ethical decisions; and

- Be connected and compassionate citizens who contribute to a diverse and global society.

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Massachusetts Department of
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CATALYZING PERSONALIZED LEARNING

Massachusetts Personalized Learning Edtech Consortium

LearnLaunch Institute

281 Summer Street, 2nd Foor

Boston, MA 02210

www.LearnLaunch.org/MAPLE

MAPLE@LearnLaunch.org