Chapter 7
Twenty-First Century Learning in Burlington Public Schools

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Abstract The world is advancing toward a new paradigm of education, one in which students are no longer required to excel only at standardized testing, but to foster competencies, such as empathy, citizenship, and creative thinking, which will equip them to solve the complex problems that lie ahead of humanity. In Massachusetts, a state in the United States which underwent a long-standing standard-based reform in 1993, the Burlington Public School district provides an example of an education system that can challenge the status quo. With a culture of distributed leadership, collaboration, and innovation, which greatly empowers teachers and principals, the district of Burlington Public Schools implements its policy "Planning for Success", a three-year strategy with the explicit aim of helping students develop twenty-first century competencies. Based on a combination of observation and in-depth interviews at all levels, this study shows how this education system empowers teachers by focusing on strategic priorities and by achieving coherence, collaboration and trust among the many stakeholders involved in the school system.

In an increasingly connected world, schools are tasked with not only educating students to be citizens but also preparing them to be active and engaged participants in today's global economy. With technological advancements and rapidly changing economic opportunities, students must develop skills relevant to the current workforce they will join and the future they will build. Likewise, teachers are also compelled to upskill, train and develop in their profession to keep up with the demands of their students, schools and industry practices. In this chapter we study how the Burlington Public School (BPS) district in Burlington, Massachusetts sustains a culture in the schools that supports twenty-first century education. To provide opportunities for students to prepare for life as global citizens, the Burlington Public School system

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attracts, develops and maintains a staff of highly engaged educators to carry out this important work. As a public school district in the United States, BPS serves as an example of the possibilities that systematic alignment and the ensuing coherence can bring when investments in human capital focus on collaboration, bounded autonomy and continuous learning for all.

Approaches like the one implemented by BPS, which places great importance on culture, coherence and relationships, are supported by the academic literature of educational change. Bryk highlighted the importance of strong ties, a climate conducive to learning, and great leadership in a study of Chicago schools that had a history of success (Bryk, Bender, Allensworth, Easton & Lupescu, 2010). Fullan and Quinn, in their Coherence framework, highlight four distinct aspects to achieve educational success: focusing orientation, cultivating collaborative cultures, securing accountability and deepening learning (Fullan & Quinn, 2015). Chung highlighted how the Expeditionary Learning Network, a successful professional development non-profit in the US, based part of their intervention in schools on creating a great working climate and helping develop a clear strategy (Reimers & Chung, 2018).

In the wake of economic growth in the town of Burlington and the arrival of new technology companies, there is a deliberate focus by BPS to prepare students for life and work in the twenty-first century while balancing the demands of societal pressures and national Common Core curriculum standards. Given the increasingly diverse student population, of which 11% of students are classified as economically disadvantaged (2018–19 Selected Populations Report), BPS supports students in developing global citizenship and engaging in community building, in addition to developing cognitive competencies, which are the principal focus of state standards and assessments. Serving over 3,500 students in pre-kindergarten through twelfth grade, the BPS district includes six schools, many of which explicitly identify twenty-first century learning expectations in their communications. Based on a review of district documents, field observations, primary interviews with BPS leaders and focused discussion groups with teachers, in this chapter we examine how Burlington addresses cognitive, intrapersonal and interpersonal competencies in theory and practice.

Cognitive and socio-emotional competencies are given sufficient focus in the district. Grade-level personalization is facilitated through engaged learning. Student engagement in computational thinking skills, such as robotics and coding, are strongly supported by the district's investments in technology and encouraged through the student-led IT help desk, robotics, drone and e-sports programs (Villano, 2018). To develop interpersonal competencies, BPS encourages participation in makerspaces such as the TED Clubs and conferences, Northeastern University's drive competitions, and the IT help desk modeled on Apple Genius Bar (Villano, 2018). The BPS peer mentorship program is another vehicle for teaching empathy and collaboration. Responding to the growing opioid crisis affecting families in America as well as to increasing stress and anxiety-related problems in students, BPS promotes socio-emotional learning (SEL) to develop students' resilience and self-management. According to the conceptual framework of skills for life and work developed by Pellegrino and Hilton and discussed in the first chapter of this book, this focus on socio-emotional learning is aligned to Positive Core Self-Evaluation

(Reimers and Chung, 2016). At the elementary level, this focus is reflected in an emphasis on mindfulness, and by high school, it includes self-regulation and mental health awareness. In Burlington High School, there is an effort toward self-regulation for students to build their character and make smart decisions.

As a way to foster innovation, the leadership of the BPS district decided to participate in the *Planning for Success* process initiated by the Massachusetts Department of Elementary and Secondary Education. Beginning in 2013, BPS first used the Planning for Success (PFS) model to establish their three-year District Plan, the *Planning for Success: 2016–2019* document. The PFS model was designed for Massachusetts public school districts as a flexible planning process aimed at building capacity and coherence. The process lays out an annual implementation plan, which every school is mandated to produce, as well as a voluntary multiyear improvement plan (Conti, 2018). The hands-on planning process invites the participation of stakeholders—students, parents, teachers, staff, administrators and school board members—in crafting district goals. This participatory process aims to yield shared community understanding and support of district initiatives.

7.1 Intended Outcomes

BPS has systems in place that focus on well-rounded learning outcomes for its students, not only in academic areas but also in areas such as college readiness, twenty-first century learning and socio-emotional skills. In 2017, BPS had a graduation rate of 95.5%, which falls well above the 75th percentile across the state of Massachusetts. In 2018, when compared to the state, Burlington exceeded expectations on all strands across grades except for English Language Arts for grades 7 and 8 (Massachusetts Department of Elementary and Secondary Education, 2016). BPS performance on the Massachusetts Comprehensive Assessment System (MCAS) reflects merely one aspect of the intended student learning outcomes that BPS aspires and works toward. Given the standardized nature of MCAS, BPS has invested in assessments that are timely and that provide continuous data and feedback for them to actively reiterate their approach to schooling. BPS conducts a math assessment thrice a year, and socio-emotional skills are assessed twice a year. Compliance with state-mandated assessments coupled with their autonomy over testing internally gives BPS a comparative edge in terms of comprehending student learning. This in turn helps BPS to feed the resulting data back into the system and align the stakeholder actions—especially teachers'—with the district's vision.

7.2 Theory of Change

The district articulates its formal theory of change to mold students for the future in the PFS document. The theory emphasizes the belief that, in order to prepare students for the future, three conditions must happen in concert: (1) Targeted and engaged

learning in cognitive and non-cognitive skills, (2) a supportive environment and community, and (3) investment in human and financial capital to achieve such means. Supporting these three conditions are four strategic objectives: Engaged Learning, Relationships, Communication, and Facilities and Operations. We use the Ecological Model (Priestley et al., 2015; Eteläpelto, Vähäsantanen, Hökkä, & Paloniemi, 2013; Emirbayer & Mische, 1998), to assess whether each of these four strategic objectives have been actualized from policy all the way down to learning. The Ecological Model is a conceptual framework that posits an interconnected understanding of various factors that affect student learning. The model's aim is to relate policy to student learning. From policy, there are layers to permeate (influence) before reaching learning: improvement program, school culture, teacher capacity, instruction and then finally, learning. In other words, through this ecological approach, we can determine if the theory in concept is indeed the theory in action.

Engaged Learning. This strategic objective of BPS's theory of change proposes that, if students receive a rigorous and well-balanced program of studies, then they will succeed upon graduation and will be ready to succeed in college, in their career, as well as in their role as global citizens (Conti, 2016). The district uses the term "balanced" to describe a program that meets the academic, social and emotional needs of students. In PFS, developing the student and teacher capacity for SEL is a primary goal contributing to Engaged Learning. This goal is seen in action from policy through learning in the classrooms. There is an improvement program in place where student activities align to the improvement of skills as self-regulation and mindfulness. There is a monitoring system in place for these SEL competencies. In addition, school leaders, through regular staff meetings and SEL-specific teacher training, foster the collective culture and instructional capacity needed for continued impact.

Relationships. The second strategic objective pertains to cultural competency by building "the capacity of the school community to work effectively and sensitively across cultural contexts" as well as encouraging teacher leadership (Conti, 2018). The theory of change posits that, with improved cultural competency of teachers and administrators, in particular, more relevant teaching can occur, which then makes students feel welcomed and engaged in the learning process, thereby leading to better learning outcomes. In light of the Ecological Model, cultural competency is not fully supported throughout the system, wherein a well-meaning policy does not have the aligned elements conducive for its effect. Cultural competence, to date, does not appear to have a clearly articulated capacity-building plan in place nor are there incentives or measures to monitor the progress or quantify the impact. By all accounts, efforts on cultural competence appear to be at their nascent stage. This strategic objective may need more attention in future strategic plans.

Communication. One of the key strategic objectives is communication. They break it down into smaller, actionable goals: (1) Expanding collaboration, (2) Cultivating partnerships, (3) District communications, and (4) Planning for Success process. The theory of action prioritizes communication, leading to more dynamic collaboration, knowledge-sharing, best practices and collective leadership. By all accounts, the Communication pillar appears to be coherently aligned so that Policy

reaches Learning. The advanced use of technology allows real-time, accurate information to be disseminated across the ecosystem. Furthermore, partnerships with the private sector foster learning from industry practitioners through internships and company visits.

Facilities and operations. The fourth strategic objective directly supports the theory of action by providing human and financial resources to address safety, capital improvements and school programming. Safety of students and staff is paramount to the facilities and operations objective. Simple tasks, such as posting room numbers inside and outside of classrooms and re-recording notification system messages with new protocols, serve as the foundation for schools to address an emergency event (Conti, 2016). Installing both the physical and financial resources to supply and train staff, BPS used the PFS process to outline all the preliminary steps necessary for all students and staff to operate within a safe and secure learning environment. From an ecological perspective, the facilities and operations initiative relates to the idea of building system capacity within BPS in order to reach their teaching and learning goals; this includes dedicated staff and budget allocations that sustain programs and infrastructure.

It is particularly important to elaborate on the underlying mechanism through which these priorities would create educational success for students. First, it is salient and unique that two of the four strategic pillars just described address what some would call the human component of the work of education (i.e. Relationships and Communication). BPS focuses on creating great relationships between people at all levels and depends on creating a district-wide culture where all stakeholders are aligned, well informed, adequately heard, readily supported and learning all the time. The assumption would be that such an environment would be responsive to develop new educational practices for twenty-first century education, because every reform effort could count on the commitment of teachers as well as the political support of other key stakeholders.

This theory of change and culture is especially important to rally the commitment from teachers. Interviews and focus groups revealed that relationships, communication and constant learning were present at the school level. Teachers had a voice in school planning, professional development and educational innovation. Furthermore, the fourth priority of BPS (Facilities and Operations) also helped develop teachers using technology. For example, in terms of student learning outcomes, the MCAS acts as a rudimentary tool that is in place as a part of the state mandate. BPS, however, has its own internal assessments, such as i-Ready, Kahoot, Socrative, Symphony and Quizlet, that provide exit-ready data. Teachers appreciate that the district invests in tools that will help them process data faster and find solutions for their students. As attested by School Superintendent Dr. Eric Conti, "We screen kids for particular skills. For example, literacy, numeracy and socio-emotional skills are tested three times a year across the district. We also have progress monitoring that caters to individual needs of the learner" (Conti, 2018). These measures of screening are adopted across elementary schools but the same are missing from the middle schools and high schools, mainly because the district is learning how to implement such systems in a

gradual way. According to Dr. Conti, this data is further used as a primary method to increase pedagogical effectiveness and as a measure of accountability.

7.3 Developing Human Capacity Through a Culture of Bounded Autonomy

School culture is oftentimes difficult to articulate, much less create and develop. It is a loosely defined concept that can be elusive to pinpoint. However, in the case of Burlington, their school culture, as we have come to know it, is visible, well-defined and well-strengthened. What strengthens school culture, first of all? According to Ebony Bridwell Mitchell, an expert in education leadership and professor at the Harvard Graduate School of Education, culture is shaped and measured by the degree of connections:

> Culture will be strong or weak depending on the interactions between the people in the organization…. In a strong culture, there are many, overlapping, and cohesive interactions among all members of the organization. As a result, knowledge about the organization's distinctive character—and what it takes to thrive in it—is widely spread and reinforced. In a weak culture, sparse interactions make it difficult for people to learn the organization's culture, so its character is barely noticeable and the commitment to it is scarce or sporadic (Shafer, 2018).

Collaboration. Burlington's district culture is precisely strengthened and made distinct by the density and frequency of connections and interactions among key stakeholders. Each major stakeholder in the district—student, teacher, school leader, parent, industry—has a voice, through formal and informal means, and there are many opportunities for these groups to collaborate. Parent–teacher committees are actively engaged, and industry leaders participate via company visits and possible placements. Meanwhile, the high school, for example, develops global and community citizenship through an array of student clubs where students create and execute ideas for community service (Sullivan, Sheehan, & Deacon, 2018). Teachers and school leaders see this as an opportunity for collaboration. Another example is the IT help desk led by students. In the one-to-one implementation process, leaders saw an opportunity to empower students with the task of solving technological problems for teachers and other students. Initiatives like these give students a real sense of responsibility over an important aspect of school improvement, and school and district leaders are confident in the value of collective leadership (Villano, 2018). Furthermore, district leaders foster opportunities to collaborate—even in decisions of resource allocation—and use design thinking principles when crafting policy. A district leader shared the impact of including student voices:

> When we were going through the one-to-one implementation in the high school…we asked what kind of cases should we get for the iPads, and one kid said, "Don't buy cases.…People are going to toss them and buy one anyway." That would have been frustrating to find on the floor these cases we paid for (Larkin, 2018).

School principals are also highly collaborative. They involve the whole community in planning and implementation processes and regularly contribute to teaching. For example, an elementary school principal goes into all the classrooms every day to ensure that he and the teachers have a close and trusting relationship (Lyons & Larkin, 2018). Again, there was no evidence of specific training in this area, other than their studies in educational leadership (Villano, 2018), but rather that the district fosters a culture of broad collaboration.

Autonomy. The BPS district places a strong emphasis on having an empowered, well-supported staff of teachers and principals. Two main characteristics define the BPS human capital strategy. First, the district allows for a high level of autonomy for teachers and principals. In all schools, teachers felt empowered to bring new and innovative ideas to their principal and district leaders and felt supported in pursuing those ideas. A teacher-librarian shared: "I had this crazy idea to turn the library into a learning commons, and so I brought [it] to Eric (Superintendent) and Patrick (Deputy Superintendent) and to John (Principal)… and not only did they said yes, but they provided me with help" (teacher-librarian, December 5, 2018). The second characteristic is focused guidelines that serve to align the efforts across the district as well as to provide clear boundaries within which the autonomy could be exercised. The *Planning for Success* document and its four objective pillars serve as an orienting document that created alignment throughout the district. Relatedly, a principal shared how the superintendent had asked all principals to comply with a set of research-based "non-negotiables", such as holding English language classes early in the morning, because research showed that students incorporate language better at this time of day. The Superintendent emphasized that it was important to have clear direction with narrowed focus and ample autonomy (Conti, 2018).

Bounded Autonomy. In sum, the balance between collaboration and autonomy has given rise to what we define as a culture of bounded autonomy. This set of moderate rules and focused priorities drives a consistent effort throughout the district without stifling the motivation of teachers or principals. This system culture seems to resonate with the principles of distributed leadership in which actors are entrusted with greater responsibility and accountability, and in turn feel empowered to execute policy with excellence (*TALIS 2013 results*, 2014). This culture of bounded autonomy where good relationships are valued contributes to high motivation among teachers, extending therefore to the classroom level. Noting the role of the Superintendent and Deputy Superintendent, a teacher shared, "They are pretty open with what they are communicating to us.…They are present, they are here, they substitute once a month.…They show up in our ceremonies, that is meaningful, that the superintendent cares enough about my kid as a student" (elementary teacher, December 5, 2018).

7.4 Teacher Professional Development

The theme of collaboration runs steadily throughout a teacher's experience in BPS and is explicitly defined in Burlington's District Plan. The Plan outlines two specific strategic initiatives related to teacher training and collaboration. The first initiative

aims to build teacher capacity through professional development opportunities as well as planning for use of "evolving instructional technologies"; another calls to "expand collaboration" through efforts to "increase formal and informal collaboration amongst staff" (Conti, 2016). The focus on teamwork, collaboration and leadership among teachers aligns with the interpersonal skills in the Pellegrino framework for twenty-first century skills (Reimers & Chung, 2016). The dedication to collaborative approaches signals an understanding of the importance of the interpersonal skill-building not only for students but also for educators.

Interviews with BPS leaders reveal that fostering teacher capacity is one focus areas for professional development (Villano, 2018). Reviews of the literature of professional development indicate that professional development can encompass both formal and informal experiences, which Burlington balances in the opportunities it provides and allows (Villegas-Reimers, 2003). With limited days allotted for teacher trainings, it is notable that the professional development opportunities at BPS span both internal and external environments, meaning there are trainings available during and outside of the school day. External opportunities may include serving as a mentor to new teachers or attending an offsite conference or workshop. Examples of internal opportunities are informal knowledge-sharing at department meetings and observing lessons in classrooms. More formally, elementary teachers review assessment data every six weeks to modify lesson plans and adjust for individualized instruction (Villano, 2018). Further, teachers have access to subject coaches who assist in creating lessons or refreshing existing lessons to incorporate technology (Villano, 2018). Working with colleagues and students to maximize learning potential, teachers in Burlington have the support, resources and access to enhance their own careers and skill sets.

Notably, Burlington does not face the same hiring challenges that other school systems may struggle with in attracting well-qualified educators. Most teachers in Burlington have attended teaching colleges in the region and secured their teacher licensure from the Commonwealth of Massachusetts, which must be renewed after five years. Massachusetts also mandates that all teachers seeking their professional licensure undergo a one-year induction program followed by an additional 50 hours of mentoring with an experienced educator (Massachusetts Department of Elementary). Administrators have designed a "feeder" structure wherein support staff, such as Response to Intervention tutors and substitute teachers, who regularly work in the schools and already know the organization and their colleagues, so it is easy for them to be absorbed by the district when vacancies arise. Due to the reputation BPS has built for itself, it becomes very easy for Burlington schools to fill vacant teacher positions with highly qualified candidates, according to one school administrator. The culture of autonomy, innovation and continuous learning supports a robust pipeline of professional staff at all levels.

7.5 District Leadership

Among the factors that enable and empower teachers is the leadership that the Superintendent of BPS, Dr. Conti, provides. Here we analyze certain aspects of his behavior that are especially relevant.

Taking Fullan and Quinn's framework of coherence, the mindset of growth in a leader can be very beneficial to generate a culture of learning throughout the district (Fullan & Quinn, 2015). It increases the quality of plans because it involves more stakeholders, and it increases the capacity of the organization to approach future issues. Furthermore, great leaders act as "Lead Learners", and they impact the organization through modeling learning, through shaping the culture through relationships, trust and engagement, and through maximizing the impact on learning (Fullan & Quinn, 2015).

Dr. Conti fits the description of a leader that creates trust, relationships and empowerment among teachers and principals. Not only does he make sure that the district has established a few well-understood priorities, which helps to execute the theory of change, but he also gives a fair amount of autonomy to the school principals, while making sure to generate a collaborative culture across the district. For example, he substitute-teaches once a month, attends events that are important for teachers and visits regularly the schools to share time with staff. If a teacher has a new idea, he willingly listens and supports that teacher in their innovation journey. However, he also provides a minimal amount of structure for principals to work. A school principal, for example, said that Dr. Conti asked all principals to comply only with a list of research-based "non-negotiables" (i.e., that math should be taught in the morning for better outcomes), and beyond that they had autonomy to run their schools, knowing that the superintendent trusts their work. Importantly, Dr. Conti also pointed out that he always tries to elevate and recognize the leadership of his team (whether principals or teachers) when something is successful, as opposed to self-attributing the success. He is not concerned with being congratulated, but for his team to feel successful and recognized. In difficult times though, he perseveres to lead and absorb the difficulties, so that the teachers can continue to work ahead in favor of the students.

Leadership is clearly important to establish a culture that supports teacher professional development. In this case, we found a collaborative leader that has had a ripple effect on all stakeholders, thus contributing to enable the whole district to live into a culture of adaptation, learning and trusting relationships.

7.6 Investment in Infrastructure

Another reason for a thriving culture in BPS that aids teacher empowerment is their investment in infrastructure, especially in the area of technology. When we first met Mr. Villano, Director of Technology at BPS, he emphasized a three-step strategy to roll out a technological reform: (1) Infrastructure, (2) Devices, and (3) People.

Villano mentioned how most reforms that do invest in technology, almost always put the people first, thus risking the sustainability of the intervention. In BPS, they first set up the infrastructure, including high-speed wireless internet and routers. Next, they invested in the one-to-one device program (i.e., an iPad for every child). Once the infrastructure was in place, they started investing in resources for both teachers and students. This level of preparedness helped BPS gain trust among teachers who were the key implementer stakeholders. BPS made sure that the necessary support, both in terms of lesson planning and diagnostic tools, was present for the teachers. The teachers make use of technology to collect data from assessments or end-of-day learning checks through apps, such as i-Ready. The teachers can even rely on the student help desk, which is an effort to diagnose everyday technical issues in terms of technology use, both for teachers and students. It is this nature of codependency and collaboration among the stakeholders and the existing structure that promotes learning in BPS.

The Burlington teacher preparation experience is a hybrid between structures and habits that combines top-to-bottom and bottom-up professional development. In this system, agency, collaboration and leadership are crucial. There is alignment between teacher preparation and student learning goals, particularly regarding socio-emotional learning, collaboration, and creativity and innovation. Moreover, citizenship seems to be loosely aligned to a culture of teacher agency embedded in the system; though there is weak evidence of cultural competency training, a learning goal that was mentioned regarding student learning goals. Furthermore, digital learning is highly driven by leadership and formal training from the district.

7.7 Key Takeaways for Educators and Future Research

While Burlington is an example of a high-performing district at work, we are cognizant of the possibility that there are enabling factors present in Burlington that may elude other school systems in the United States and around the world.

Long tenure of collaborative leaders. While the average tenure of a district superintendent in the United States is of about 3–4 years (Conti, 2018), the BPS superintendent is on his eleventh year. Long tenure of leaders and staff provides a nuanced understanding of how to navigate key relationships in the district and how priorities should evolve to serve BPS students. A relatively long tenure, we believe, can play an essential role in building social capital and therefore in developing a cohesive school culture over time. Developing a culture of collaboration, for instance, requires focused, intentional effort over a sufficiently long period of time as teams don't learn to collaborate overnight.

Hiring policies. Unlike other districts in the world, it should be noted that the Superintendent can hire the principals, and indeed has hired each of them, and he can also remove them. This is favorable for the alignment required in a coalition and leads to the belief that school leaders' autonomy is mediated by the trust generated in the selection process.

Financial resources. Especially in developing countries, the choices that BPS made should be understood within the context of the resources at their disposal. For example, the total per pupil expenditure in BPS amounts to $20,678 USD annually (Massachusetts Department of Education 2018), but it is approximately $1,500 USD in Peru, $167 USD in the Philippines (World Education News + Reviews, 2018) and as low as $127 USD in some areas in India (Jain, 2017). This is especially relevant since many of the main factors of BPS involve purchasing goods and services, such as evaluations and professional development. While cost structures vary across countries, it is clear that schools need adequate resources, in their respective settings, to be able to acquire the kind of inputs that can support efforts of instructional improvement such as those examined in this chapter.

Given these enabling factors, BPS nevertheless proves to be an example for other school systems. We draw the following lessons from this case, which we hope are useful to education leaders interested in supporting the development of teacher capacity to empower students with the full breath of competencies necessary.

Alignment around few priorities is key. The strategic planning had few priorities, which were clearly understood by all actors. The priorities describe what to do (engaged learning) and how to do it (collaboration). Focused alignment can be reinforced by strong leadership.

The importance of formative assessments. In many systems, standardized assessments fail to help educators to improve curriculum, either because the data arrives late, or because they do not provide a comprehensive range of data about students. Districts might consider crafting or buying a different set of evaluations that are commonly agreed upon by all actors, with the specific objective of promoting frequent collaboration among teachers aimed at improving instruction.

Investment in technology processes. Implementation should follow a three-step process: (1) Investing in infrastructure (points of access, broadband internet); (2) Investment in devices (iPads, computers, readers); and (3) Training people (professional development) (Villano, 2018). School leaders shared that many districts fail to implement technology-driven instruction because they start by purchasing devices without proper investment in infrastructure. After implementation, it is also important to include maintenance budget lines to continue to update equipment, though these expenses are considerably less than the initial investments.

A culture of bounded autonomy. Policymakers may benefit from coalescing actors around elements of structure and direction such as the main goals of the strategic plan, standards, or minimal agreements of execution (such as the "non-negotiable list of execution" that Dr. Conti shared with principals). However, it is also key to provide autonomy. Teachers are empowered when they see opportunities to create products, contribute knowledge and choose their learning; examples include sharing professional development with peers, building curriculum or selecting BPS Conference professional development sessions. Teachers should also be asked for feedback on initiatives.

As we look to the next generations to solve tomorrow's problems, it is imperative that education systems are designed and implemented in ways that support the multifaceted student and maximize their abilities and capacity for development. The

following ideas illustrate the complexities of supporting twenty-first century skills in various educational systems in relation to the goals set forth by the Burlington Public School district.

Digital citizenship enabled by ICT. Through intentional implementation of the one-to-one device program, Burlington Public Schools is leading the way in its application of information and computer technology (ICT). The integration of iPads and laptops in the classroom has created more dynamic learning experiences and given teachers and students more flexibility in their communications and interactions. The one-to-one program supports the cognitive competencies of adaptive learning and ICT literacy. By virtue of the connectivity and ease of sharing information, learners in the district are equipped to further develop interpersonal competencies such as collaboration, teamwork, assertive communication and social influence with others. The importance of ICT literacy cannot be underestimated, as students prepare to be active and engaged citizens.

Building to higher-order thinking skills. The ethos of Higher-Order Thinking Skills (HOTS) is to enable students to lead their learning process—a major aim of the district. From creating digital portfolios to learning about mindfulness, the students in Burlington are creators of their own experience and have ample opportunity to cultivate HOTS. Further, David Villano, Director of Technology Integration at BPS, talks proudly about incorporating the SAMR model (Substitution, Augmentation, Modification and Redefinition) in their curriculum. Burlington uses relatively simple technology tools like Scratch and Sphero to enhance problem-solving skills.

Widespread support of socio-emotional learning. In Burlington, social-emotional learning is included in the guiding principles of curriculum frameworks and in the district's strategic objectives. Burlington also runs empathy walks, meditation schedules and peer mentorship programs that help kids collaborate and work through real-life problems or simply cultivate a culture of acceptance (Villano, 2018).

Collaboration and diversity. Relationship management is included in Burlington as a guiding principle for curriculum frameworks. Burlington leaders, curriculum frameworks and strategic plans explain empathy and cultural competence as understanding the perspective of others.

We conclude this analysis with three questions that we cannot answer at this time. The first concerns whether the collaborative culture would suffer if the Superintendent changed. It would be important to examine the degree to which district habits and investments have sufficient legitimacy to continue regardless of changes of leadership at the top. A limitation of this study is that we conducted a small number of teacher interviews. Further studies may include a broader sample or surveying teachers to inquire into the robustness of the collaborative culture. The second question relates to the tension between one-to-one learning and collaboration. Classroom visits showed all students conducting individual work on their iPads, which leads to the question of how BPS can balance personalized learning and teamwork. The third question asks how BPS will evaluate other competencies in the future. Current evaluation systems for math, literacy and socio-emotional learning exist in elementary school, and it remains to be seen whether and how these policies translate to middle school and high school.

This analysis serves to draw lessons from Burlington Public Schools as an ecosystem and to help policymakers reflect on their own ecosystems, taking into consideration the complex interplays that must be managed to achieve coherence between the different actors' priorities, focus in the district's efforts, and ultimately, student progress towards twenty-first century competencies.

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