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In 2014, DPS established an innovation lab—the Imaginarium— with a mission “to stimulate and support innovation across Denver to transform learning and public education systems.”

Denver Public Schools (DPS) has an ambitious vision: Every Child Succeeds. To close historic gaps in opportunity and achievement and ensure all learners graduate prepared to succeed in a knowledge-intensive and globally connected world, DPS is making learning personal by nurturing all children’s unique needs and strengths and empowering them to advocate for themselves in their learning and in their lives. To do this will require fundamental shifts in practice and policy from the classroom to the district to the state. Acknowledging this need and the magnitude of the shifts it will require, the Denver Plan 2020 recognizes innovation and Personalized Learning as essential district strategies.

In 2014, DPS established an innovation lab—the Imaginarium— with a mission to stimulate and support innovation across Denver to transform learning and public education systems. The Imaginarium contributed to the district’s vision by supporting teachers and leaders in schools of all types and governance—new and existing, charter, innovation, and district-run—to design, implement, and scale models of Personalized Learning. In the 2015-2016 school year, ten schools launched Personalized Learning pilots. The Imaginarium is telling three of their stories in this report in order to shine a light on innovative work, to describe lessons learned from one year of implementation, and to identify ways that DPS can better support the individual teachers, leaders, and learners who are at the forefront of re-imagining and re-inventing school.
What is Personalized Learning?

Personalized Learning has no single definition within the national education landscape. Therefore, as DPS first explored Personalized Learning as a district-wide improvement strategy in 2012, leaders hosted stakeholder conversations with learners, teachers, and families to understand what Personalized Learning meant to them. From these conversations emerged common beliefs: that all learners are unique, that all learners can achieve at high levels when they form strong relationships in supportive environments, that all learners should have the opportunity to define and pursue their personal interests, that resources and instructional strategies should be flexible in order to meet learners’ needs, and that teachers should be supported and empowered so that they might, in turn, support and empower learners. From these beliefs, Denver developed its own definition of Personalized Learning, captured in the framework below. Individually, each practice described in this framework requires shifts within our current education system. Implemented together, they challenge our current system entirely.

[Figure 1: DPS Personalized Learning Framework]
DPS empowers school leadership teams to drive change in their schools and grants them flexibility to innovate. As a result, the district’s work to support Personalized Learning is neither uniform nor top-down. Rather, each school that pilots Personalized Learning develops a model fitted to the assets and needs of its community, while still grounding its design within the DPS Personalized Learning framework.

**Learner Agency: What is it and why is it important?**

Developing learner agency lies at the heart of Denver’s approach to Personalized Learning. Personalization involves preparing young people to be self-advocates in the classroom and in their lives, and equipping them with skills and dispositions to participate actively in their communities. Because agency is core to Denver’s definition of Personalized Learning, each case study will focus on how teachers, learners, and leaders approached agency and what they learned along the way.

What is learner agency? In the context of school, learner agency is the learner’s ability—due to both internal capacity and external circumstances—to influence and ultimately direct his or her own learning.

**Self-awareness:** agency thrives when learners know themselves, discover their own gifts, and develop themselves as self-confident lifelong learners.

**Self-efficacy:** agency builds on and contributes to belief in one’s ability to succeed with effort. Academic self-regulation: agency requires the capacity to set goals, make plans, monitor progress and reflect on learning.

**Relationships:** agency is not the same as autonomy. It is inherently relational, and requires awareness of the consequences of one’s own actions on the environment and on others.

For learners to develop agency, they must be become active owners of their learning and teachers must become coaches and guides. Even as learner and teacher roles change, however, the learner-teacher relationship remains important. Case studies will show that shifting roles while deepening relationships requires planning, support, and commitment to continuous improvement.

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Case Study Overview

In this report the Imaginarium highlights the work of three pilot schools during their first year of implementation: 1) Roots Elementary School; 2) Sabin World School; and 3) Denver School of Innovation and Sustainable Design. Studies describe why each school embarked on a journey toward personalization, what they aspired to do, how they approached implementation and continuous improvement, and the successes and challenges they encountered. Individually, each study depicts how one school designed, implemented, and adjusted Personalized Learning in practice, with a focus on the specific elements of the Personalized Learning framework that the school chose to prioritize. Together, they paint a picture of Denver’s overall approach to Personalized Learning. They share insights to help teachers and leaders embark upon Personalized Learning and to assist the district in supporting Personalized Learning.

The Imaginarium used qualitative and descriptive methods to study the schools profiled in these case studies. Studies draw data from site observations, interviews with school staff and learners, and study of key artifacts. Additionally, studies draw from the records of the Imaginarium’s ongoing support and presence in piloting schools; Imaginarium staff were in schools on a weekly basis to guide pilot teachers through inquiry and improvement cycles and meet with school leaders about their strategies for managing change.

The approach used in these studies is consistent with national research models; for early stage initiatives with small sample sizes, qualitative methods are most appropriate for identifying leading indicators of longer-term outcomes and for developing outcomes models that can be used for formal impact evaluation in subsequent years. As described in the last section of this summary, year one allowed the Imaginarium to develop an impact evaluation model and research agenda that will be used to rigorously assess Personalized Learning outcomes in year two and beyond.

Summary of Findings

While each school’s experience was unique, all suggest that Personalized Learning initiatives lead to positive student outcomes. Learners develop the capacity to set clear goals, independently seek out resources to support their learning, and reflect on personal academic and social-emotional development. And consistently, teachers become more invested in Personalized Learning and more personally engaged in teaching as they innovate. Additional themes emerged across all schools; the table below synthesizes what each school learned.
## Agency
- Plan explicit instruction to help learners develop agency.
- Improve scaffolding structures to build agency.

## School Conditions
- Leadership must support, trust and empower teachers.
- Ensure teachers are committed and have a tolerance for change and failure.
- Establish strong teacher communication and collaboration systems to support learners and prepare for scale.
- Ensure staffing structure supports personalized learning strategies, including roles, responsibilities, and flexible teaming.

## Implementation
- Minimize learning curve by leveraging outside resources.
- Provide responsive opportunities for learners and teachers to have voice in the implementation process.
- Utilize evidence-based inquiry to iterate and improve early innovations.
- Increase family trust and engagement in personalized learning.
- Utilize evidence-based inquiry to iterate and improve early innovations.
- Increase family trust and engagement in personalized learning.
- Utilize a phased implementation approach.
- Utilize evidence-based inquiry to iterate and improve early innovations.

## District Implications
- Align district resources around personalized learning work.
- Provide all schools with resources to support the development of learner agency.
- Align district resources around personalized learning work.

## School-Specific Implementation Insights
- Streamline and focus learner advisory time to support the school’s culture and community.
- Utilize cohorts to make competency-based learning manageable.
- Refine project-based learning to ensure alignment with data-driven practices.
- Refine coaching sessions to support learner agency and provide actionable data.
- Improve configuration of the physical learning space called The Grove.
- Improve the use of learner profiles.
- Refine project-based learning approach to ensure students have the skills to collaborate and self-direct.
School-Level Insights

The following lessons learned emerged at the school level. Each has implications for the district, discussed in the last section of this summary.

**Learner Agency**

> In the most effective schools, leaders create cultures of measured risk-taking, resist micro-management, and drive innovation through the lens of continuous improvement.

**Provide explicit instruction to help learners develop agency.** Leaders and teachers should anticipate that developing learner agency is complex, takes time, and requires support. Young learners benefit from explicit instruction about self-regulation. Older learners need support to develop essential habits of success. Schools should prepare to provide all learners opportunities to exercise agency, even as they are in the process of developing these necessary skills; the more opportunities learners have to practice agency with support, the greater their growth in critical skills, and the more likely they will be to exercise agency independently in the future.

This can feel like a leap of faith for educators, so careful planning, scaffolding, and learner monitoring are important.

**Provide scaffolding to develop learner agency.** Leaders and teachers need to manage how ownership and direction are transferred between teachers and learners. Moving too quickly to give learners too much freedom around instructional decision-making can result in confusion and, counter-intuitively, can slow the shift to Personalized Learning. Teachers should provide scaffolding early on and gradually remove these supports as learners demonstrate the skills necessary to direct their learning--academic and emotional self-regulation, self-awareness and reflection, and asking for help when appropriate.

**School Conditions**

**Leadership support is essential.** With support from the Instructional Superintendent and broader school community, a school leader and leadership team must craft the vision for Personalized Learning, establish priorities, and align resources and supports to enable Personalized Learning to blossom. After that, they must step back; they must trust and empower teachers to take risks and learn through practice, while building teachers’ capacities for this level of instructional change management. In the most effective schools, leaders create cultures of measured risk-taking, resist micro-management, and drive innovation through the lens of continuous improvement.

> Teachers engaged in Personalized Learning must demonstrate growth mindset, cultural competency, and a belief that it is possible for all learners to be self-directed.
**Teacher investment is essential.** Teachers must drive the transformation to Personalized Learning; it cannot be mandated or forced. Teachers must be resilient and comfortable with taking risks and adapting their practice based as they learn. Early findings suggest that it is helpful for teachers to demonstrate strong foundational pedagogy and practice before embarking on this work but that foundational skills alone are not sufficient. Teachers engaged in Personalized Learning must demonstrate growth mindset, cultural competency, and a belief that it is possible for all learners to be self-directed.

**Resources and staffing structures must support personalized learning.** Leaders must strategically and comprehensively assess the alignment between their schools’ operational structures and Personalized Learning visions. Early findings show that resource allocation – time, technology, physical space, and human capital – as well as staffing structures are among the most critical operational structures for Personalized Learning. Further research will be conducted to better understand the specific resource allocation strategies and staffing models that are most highly correlated with successful implementation of Personalized Learning.

**Implementation**

*Increase community trust and engagement in personalized learning efforts.* Most adults carry assumptions about school based on their personal experiences. These assumptions can make Personalized Learning difficult to comprehend; many parents and families do not immediately grasp or value the purpose or structure of personalized environments. Schools must work to build community understanding and trust and need to educate and empower families in Personalized Learning efforts in order to connect the home and school learning environments.

*Utilize a phased implementation approach and leverage outside resources.* When implementing Personalized Learning, schools need to start small, learn fast, and grow carefully. All pilot schools implemented Personalized Learning in a limited number of classrooms in year one, generally in certain grade levels or content areas. This approach allowed schools to manage the risk associated with trying something new by studying impacts in selected and carefully contained environments. Schools also found it valuable to balance the use of evidence-based best practice and innovative practice. In places where innovation is not necessary – where existing knowledge and tools are adequate and risk is low – schools should look to borrow from what already works. This approach helps schools manage the magnitude of change and keep everyone focused on the most challenging work.
**District-Level Lessons Learned**

Pilot schools’ experiences point to the importance of collaboration between schools and central office in order to provide the systems and resources needed for schools to innovate.

Alignment begins with a shared vision for personalized learning, and a clear understanding of where personalized learning fits among the district’s core priorities. Personalized Learning is not “another program,” but an overarching philosophy of teaching that can connect and accelerate district initiatives. When schools are not confident that Personalized Learning is “here to stay” or feel competition between Personalized Learning and other district initiatives, they may not fully embrace Personalized Learning. Clearer messaging and support from senior leadership will help schools innovate with confidence.

District policy and central office practices must allow schools to use resources like time, technology, and curriculum strategically and flexibly. While flexibility itself does not guarantee that teachers and leaders will personalize learning, the absence of school-based flexibility makes Personalized Learning exceedingly difficult. Flexibilities need to be clear and fully supported in practice; when schools are not clear about the scope of their decision-making flexibility or worry that they will be penalized for exercising flexibility, they do not feel empowered to innovate.

The district should deepen professional learning, support teacher networks, and provide critical professional resources. Schools must have easy access to high-quality opportunities to develop their skills in Personalized Learning, including opportunities to connect with and share practices with other teachers. Teachers are eager for the district to provide resources to assist them in implementing Personalized Learning because it is time-consuming and inefficient for individual schools to create them. These resources include tools for teachers to assess their students’ development of non-cognitive skills as well as academic competencies within a competency-based system. The district should also address the need for guides to selecting digital content.

**Implications and Next Steps**

Personalized Learning case studies illustrate good work happening in DPS schools and highlight ways that DPS can support the development and expansion of innovation and Personalized Learning as strategies for district improvement. Looking to the 2016-2017 school year, the Imaginarium will focus on the following priorities:
Supporting teachers and leaders. All case studies highlight the importance of strong leadership and the critical role that teachers play in driving and improving the implementation of innovations in Personalized Learning.

School leaders play an essential role in creating a culture of continuous learning and establishing conditions for success. The Imaginarium will pilot an inaugural leadership development track for leaders in Imaginarium schools, partnering with existing DPS leadership pathways to share learning and best practices.

Teachers are passionate, knowledgeable, and eager innovators. They need support, and are often one another’s best resources. The Imaginarium will promote affinity-based, blended peer professional learning networks to support teachers in sharing knowledge and skill. These networks will also facilitate teachers’ sharing of promising practices.

Many piloting schools hire Personalized Learning coaches; teachers in these roles oversee the introduction of Personalized Learning and support teachers’ professional development as schools prepare to expand personalization across all classrooms. Most schools promote teachers into these roles on a full- or part-time basis; piloting teachers have both the skill and the knowledge of the specific school needed for this work. The Imaginarium will work with district personnel to find sustainable ways for teachers to continue in these important change-management positions, which are currently funded by grant money.

Systems, Coherence, and Flexibility. DPS identifies innovation as an essential strategy for school and district improvement, yet Personalized Learning schools do not consistently experience district conditions as conducive to their innovation. DPS can address this in several ways:

Senior leadership can articulate a shared, compelling vision for Personalized Learning—why it matters, how it serves the Denver Plan 2020 goals, and where it fits alongside other district initiatives. School leaders and teachers are more likely to feel that Personalized Learning is feasible and sustainable when they are clear about its relationship to district priorities and initiatives, including Relay and others.

Schools benefit when data and technology systems support Personalized Learning. Examples include allowing flexible scheduling in Infinite Campus, providing on-demand access to a wider range of learner data, and easily integrating approved learning applications and digital curricula with existing district systems. The district, including DoTS, the Department of Personalized Learning, and the Imaginarium, can do more to help schools access the resources and platforms that will allow them to support learners along Personalized Learning pathways. As the district anticipates allocation of resources to schools through the bond and mill levy, it should articulate a clear and comprehensive strategy for the purpose and implementation of educational technology for learning.
Instructional Superintendents play a particularly key role in supporting a school’s efforts to introduce Personalized Learning and need more opportunities to learn about it. It is also essential that communities understand Personalized Learning. DPS can lead the way nationally if we invest time and resources to understand how families of all races, cultures, and backgrounds relate to Personalized Learning and to ensure that approaches are culturally competent. The Imaginarium will work with school leaders to create plans for engagement and will look for support from the Chief Schools Office (CSO) and Family and Community Engagement (FACE) leaders to create opportunities for conversation with the community.

DPS can offer schools flexibility to allocate resources and make instructional decisions that reflect their vision for Personalized Learning and meet their learners’ needs. Currently, not all schools are consistently able to take advantage of this flexibility in practice. The district can do more to ensure that all those involved – school leaders and Instructional Superintendents in particular – understand their respective roles related to creating the school’s vision and making and carrying out decisions to bring it to life.

**Defining Impact.** Denver and the Imaginarium are leading the way nationally to develop a Personalized Learning impact and outcomes model that will explore and explain how Personalized Learning promotes learner success and helps close opportunity gaps. The Imaginarium continues to work on developing measures of success and instruments of assessment and to provide all schools with continuous improvement plans tailored to their specific needs.

Based on lessons learned from pilot schools and a comprehensive literature review, the Imaginarium developed a Personalized Learning impact and outcomes model. The model hypothesizes that over time, Personalized Learning will lead to specific outcomes—first to the development of learner agency, then to the development of 21st century and social-emotional skills and academic growth, and ultimately to the development of the whole child and college and career readiness. In 2016-17, the Imaginarium will study how Personalized Learning promotes these outcomes, with specific foci on understanding how learners develop agency and identifying conditions that support success. The Imaginarium is working with Assessment, Research, and Evaluation and the Department of Personalized Learning to align these efforts with existing district research and to create custom instruments where district instruments are lacking.

The Imaginarium will support twenty-seven schools in 2016-17 and the demographics of these schools will mirror those of the district. As a result, the Imaginarium’s impact and research methods will focus explicitly on understanding how personalization can reflect culturally competent practices and meet the needs of non-white learners, language learners, and learners with special needs.

**Anticipating Scale.** School re-design alone will not ensure that every DPS learner has access to Personalized Learning environments. The Imaginarium is currently exploring strategies to achieve scale.
There is a need to define alternative pathways to personalization. The Imaginarium saw early success this year in partnering directly with Instructional Superintendents to implement Personalized Learning across their networks (e.g. Network One). While this partnership model still required a fair amount of hands-on support for schools, there remains promise in a scalable “train the trainer” model that will support the Instructional Superintendent as the primary driver of innovation across his or her network. Additionally, the Imaginarium will pilot strategies for sharing classroom and school practices that leaders and teachers may begin to implement independently; as the research team identifies promising practices, the Imaginarium will explore ways to use practice banks, video libraries, and teacher networks to share and disseminate these practices.

It is important that Personalized Learning be aligned to the district’s core work. District partners helped the Imaginarium identify the following opportunities to integrate Personalized Learning with named district priorities, including Whole Child, Opportunity Gap, and Ready for College and Career.

Additionally, partners in CSO and Portfolio Management helped the Imaginarium identify opportunities for strategic partnerships with schools that are identified as at risk for closure through the School Performance Compact, schools applying for innovation status in their improvement efforts, and district-led applications for school restart. The Imaginarium is exploring these partnerships as strategies for expanding impact and promoting equity.

The efforts of year one pilot schools provide the district with insights as to how to support personalized learning as a strategy for achievement and equity. The Imaginarium looks forward to deepening the learning process with pilot schools in year two and beyond, and is grateful to the forward-thinking school leaders and teachers for trailblazing. The Imaginarium is committed to supporting schools in the shift to personalized learning, to understanding personalized learning’s impact on students’ cognitive and social-emotional growth, and to helping DPS re-imagine school and achieve its vision that Every Child Succeeds.

What is Personalized Learning?

Personalized Learning has no single definition within the national education landscape. Therefore, as DPS first explored personalized learning as a district-wide improvement strategy in 2012, leaders hosted stakeholder conversations with learners, teachers, and families to understand what personalized learning meant to them. From these conversations emerged common beliefs: that all learners are unique, that all learners can achieve at high levels when they form strong relationships in supportive environments, that all learners should have the opportunity to define and pursue their personal interests, that resources and instructional strategies should be flexible in order to meet their needs, and that teachers should be supported and empowered so that they might, in turn, support and empower learners. From these beliefs, Denver developed its own definition of personalized learning, captured in the framework below. Individually, each practice described in this framework requires shifts within our current education system. Implemented together, they challenge our current system entirely.

Background

School Type: District (new)
Current Grades: 9
Students Served: 95 (450 at scale)
Demographics:
  15% African American; 35% Latino; 35% Caucasian; 15% Other
FRL: 63%
ELL: 15%
SPED: 15%

In August 2015, 100 ninth-graders began their high school experience in a brand new school, the Denver School of Innovation and Sustainable Design (DSISD). DSISD is one of a kind in Denver Public Schools (DPS)—a Personalized Learning environment that re-imagines what is possible in a public high school. DPS began the process of designing this breakthrough high school in late 2013 with support from the Carnegie Corporation of New York’s Opportunity By Design Challenge. As a first step the district hired Danny Medved, a rising leader who embraced the opportunity, challenge, and urgency of this task. Medved dove into the work, committed to the belief that a purposefully designed and carefully managed school could enable each learner to thrive and close persistent opportunity gaps.

“If we use the same system we’ve had, we are going to get the same results.”

“My motivation as a school leader is closing the opportunity gap and really rethinking what’s possible within education,” Medved explains. “If we use the same system we’ve had, we are going to get the same results. Is school today relevant? Or is it just creating really good, obedient learners who are going to get through high school, go to college…but then get out into the world and realize they don’t know how to solve the complex problems of today or lead or collaborate? I wanted to build a school based on the skills kids will need when they are adults.”
Building a school is not an individual endeavor, and from the outset Medved worked with a design team of educators, students, staff and community members. He engaged input from future DSISD learners in early in the process, hired local and national founding team members to shape the instructional model, and brought in parents to serve as design partners and community advocates. The design team worked also closely with partner organizations, including multiple DPS departments, the Carnegie Corporation of New York, the school support organization Springpoint Schools, and leading charter management organization Summit Public Schools. These partners offered anchoring design principles corresponding to Denver’s personalized learning framework and provided the design team with a national community of practice.

Together, the DSISD design team developed a compelling vision: To empower ALL learners to own their learning, shape their dreams, and create a better world.

DSISD’s vision takes root in the belief that in order to create a better world, students need a broad set of knowledge, skills, and abilities that include but are not limited to academic abilities. The design team therefore identified sixteen competencies, called the DSISD Qualities and Competencies of Innovators, and integrated these competencies into all aspects of the school design.

**DSISD’s Qualities of Innovators**

- Personal Academic Excellence
- Lifelong Learning and Citizenship
- Innovative Thinking and Action
- Transformative Leadership

“To empower ALL learners to own their learning, shape their dreams, and create a better world.”
As the team moved from envisioning to building, it sought to bring its vision and the Qualities and Competencies of Innovators off the page and into practice. In an effort to balance best practice with innovation, the team deferred to established research and proven models wherever possible and employed user-centered design to generate new models and practices where existing ones fell short.

The design team also knew that implementation would require learning new systems and tools as well as shifting mental models and navigating the personal and interpersonal challenges that come with innovation. The team used Improvement Science to manage these shifts. Improvement Science is a change management methodology designed to provide structure for tricky implementation processes. In keeping with the Improvement Science approach, the team identified five key drivers; this allowed them to focus their attention on designing, testing, and revising the most essential – and challenging – aspects of the school model.

**Agency:** Agency is at the heart of DSISD’s model. The school believes that a culture of agency is key to engaging learners in a personalized environment. The school model is designed to ensure that all learning experiences provide students with opportunities for self-direction and with multiple opportunities to develop and reflect on Habits of Success. The team anticipated the need to build agency skills and built two blocks in the school day devoted to doing so: Advisory teaches a Habits of Success curriculum, and Career Survey enables learners to explore career options and set personal life goals.

![Diagram C: DSISD Habits of Success]
Driver Two: Competency-Based Learning (CBL): DSISD employs a competency-based approach to learning to ensure that all learners not only develop all the Qualities and Competencies of Innovators but that they do so in the ways and at the pace that suit them best. The school uses multiple systems to bring CBL to life. In Personal Learning Time, learners use a learning management system to access playlists aligned to their personal profiles and paths. For designated portions of the school day, learners work independently on playlists, advancing as they demonstrate competency. DSISD maintains a balance between individual (personal) and collaborative (Project-Based Learning, or PBL) learning. PBL keeps learners focused on applying their learning to solving real-world problems.

Driver Three: Student Supports: To promote equity, DSISD places strong emphasis on positive youth development and a multi-tiered intervention system. Staff meet regularly to study student data and develop strategies to allow every student access to challenging coursework.

Driver Four: Advisory: Learners meet daily with a dedicated faculty advisor who serves as a mentor. Learners and advisors work together to create personal learner profiles that include learning preferences and interests, to consider how to make best use of the learner’s strengths, and to address areas of challenge or weakness. Advisory supports learners in developing specific habits of success that support agency and in reflecting on their progress in all competency areas.

Driver Five: Data Driven Instruction: DSISD ensures that all learning and teaching are driven by data. The school’s pedagogy is built around inter-disciplinary projects and incorporates Summit’s Cognitive Skills Rubric. Using competency-aligned project design, DSISD provides opportunities for students and teachers to look at student data together over the course of every project.

[Diagram B: DSISD Four Year Arc]
DSISD’s school model incorporates personalization throughout its five drivers. This case study will focus on DSISD’s approaches under two areas of the DPS Personalized Learning Framework, which align to the school’s driver model: Agency and Competency-Based Learning. The following pages examine DSISD’s specific approach to developing, demonstrating and deepening learner agency as a foundation for the Qualities and Competencies of Innovators.

Research Methodology

The Imaginarium studied DSISD’s Personalized Learning efforts through site observations and teacher coaching sessions, focus groups, teachers’ written reflections, and interviews. The Imaginarium employed a field manager who was in the school weekly throughout the school year to guide teachers through inquiry cycles and data-driven iteration to support shifts in classroom learning and school design. The Imaginarium observed one mid-year focus group with eight (four male and four female) ninth grade learners to gain insight into students’ experiences, with a focus on the development of agency. The Imaginarium also used three reflective articles authored by DSISD staff for Springpoint Schools highlighting the lessons learned during year one. Finally, the Imaginarium conducted interviews with two leaders and four teachers at the end of the school year.

Personalized Learning in Practice

Developing Learner Agency

From the outset, teachers received professional development on the delivery of the Habits of Success and participated in inquiry-based professional development on learner agency. The Imaginarium field manager used coaching cycles to help teachers test, study, and refine classroom practices designed to grow agency. Advisors played a particularly important role in this work; they delivered lessons on Habits of Success in three-week cycles, conducted one-on-one conferences to help learners reflect on their progress and create weekly goals and plans and helped learners reflect on their progress in the twelve non-academic DSISD Competencies. Career Survey allowed students to explore personal interests in career clusters and practice study skills essential in college. The DSISD team hoped that advisors and Career Survey teachers would support learner agency by increasing learners’ self-awareness, personal goal-setting and reflection.

In spite of this well-planned approach, DSISD encountered challenges implementing advisory and Career Survey. The school’s experience demonstrates the complexity of developing agency and a culture of ownership, even with supports in place. Medved reflected, “Agency is incredibly complex. There’s no easy way to teach it. Research shows that agency correlates with opportunity. It’s a lot more complicated than that, but we saw that our learners who came from more opportunity had higher agency, higher achievement. Our learners who had more challenges to navigate, their agency skills were lower, and that was preventing them from accessing our curriculum.”
Mid-year surveys of teachers and learners suggested that advisory was over-planned and over-structured, and that it was a burden for teacher advisors to implement both the Habits of Success curriculum and one-on-one mentoring. Surveys suggested that Career Survey proved redundant to the Habits of Success curriculum taught in advisory. Further, learners wanted advisory to allow more time for relationship-building. Based on this feedback, DSISD will refine its learner support structures in the 2016-17 school year. The faculty will replace the Career Survey course and the Habits of Success curriculum component of advisory with a new course called Design My Future (DMF). Advisory will focus on individual conferencing as well as relationship- and community-building.

“[We are] using systems thinking [so that the] different aspects of the school support each other [to ultimately achieve] the end vision, which is learners who have the agency to reach their dreams and create a better world.”

“In ninth grade, DMF will have the same content as the previous Career Survey pilot course, but we have optimized the timing and pacing of the content,” explained Lisa Simms, DSISD Dean of Curriculum and Instruction in this blog post. “We will be very intentional and transparent about teaching and fostering agency for learners. In tenth grade, beginning at the end of the first hexter [six-week period], learners who have demonstrated mastery of Habits of Success and agency in their DMF class will have the opportunity to earn self-directed learning time in our Raven’s Nest, a community space with innovative furniture and workspaces. Learners who need more support in agency and Habits of Success, such as organization and time management, will continue to go to DMF after those initial six weeks and will receive additional one-on-one support from their teacher.”

DSISD hopes to see a more aligned and cohesive approach to developing agency. Learners will receive explicit instruction on skills related to agency, be expected to exercise agency throughout the school day, and receive feedback in advisory. As they progress through high school, learners will eventually take on more ownership of their learning through internships and college courses. “All of those experiences in the DMF course sequence are reinforced by the advisor via bi-weekly one-on-ones,” stated Medved. “[We are] using systems thinking [so that the] different aspects of the school support each other [to ultimately achieve] the end vision, which is learners who have the agency to reach their dreams and create a better world.”

Implementing a Competency-Based Model

Using iNACOL’s five-part definition of Competency-Based Learning as a guide, DSISD designed an instructional model based on demonstration of mastery. As discussed earlier, the schedule alternated personal learning and project days so that learners would both progress asynchronously, receiving content and instruction tailored to their personal needs, and have opportunities to work collaboratively in heterogeneous groups. The faculty planned for learners to work through individual playlists generated by a learning management system in personal learning time, then reinforce and apply that knowledge and skill in group projects.
Two months into the school year, teachers found they needed to make changes to this approach. Interviews and focus groups revealed that learners wanted more teacher support during personal learning time and that learners felt isolated on their computers. As DSISD’s Language Arts Lead Teacher Stephanie Price described, “[My initial approach] didn’t account for the fact that learners weren’t ready to identify their own needs without my guidance. Many of them lacked the self-directed learning skills and agency. It became messy and it started to feel like each learner was isolated.”

Veteran teachers also struggled to cultivate a strong classroom culture, provide learners with the right levels of support, and manage the workload associated with advancing learners asynchronously based on mastery. Medved explained, “We saw teacher burn-out because now instead of teaching one prep where every one of my hundred learners is on the same lesson, now I’ve got a hundred different learners in a hundred different places which ultimately means I’m less effective at meeting each learner. We saw just a lack of culture and a sense of isolation ....There was no sense of collective movement or efficacy. Morale began to sink among learners and among teachers. There wasn’t a sense of community in the classroom.”

By October, DSISD recognized the need to provide more scaffolding for the competency-based approach that enabled learners to work at their own level and progress based on mastery and also addressed learners’ desire for more community and teacher support.

The DSISD cohort model emerged from this mid-year reflection and was piloted in Language Arts. The cohort model provides learners with individual learning paths while also allowing them to opt in to smaller learning communities (cohorts) within a classroom, without the constraint of teacher placement or academic prerequisite. Each cohort works as a community toward shared learning goals through the year, collaborating on projects and other activities. In the DSISD Language Arts classroom, for example, learners were able to choose from three cohorts: Introduction to Literature, AP Language Cohort, and AP Language Veterans.

As Price described the change, “The cohort model made my classroom truly competency based. Not only are my [learners] at varying levels, but what it takes for each of them to master material is different. Every [learner] in my classroom is able to work at their level without being separated from their peers. They can learn from one another and make shifts in the level of their course work when they are ready—not when the next school year begins […] The cohort model created an avenue for all [learners] to be proud of themselves for taking risks and accepting challenges [and] truly owning their learning.”
Teachers encouraged learners to choose challenging work and provided them with opportunities to join cohorts throughout the year. Ultimately though, learners chose their own path. “The cohort model simply allows learners to choose their own adventure in the classroom. The cohorts are not homogeneous when it comes to academic ability....The choice to join an AP cohort is not about ability, it’s about interest, motivation and agency,” Price explained.

In all cohorts, teachers assigned projects lasting three to six weeks. Projects were anchored in standards and designed to foster higher-order thinking skills, as described in Summit’s Cognitive Skills Rubric. Each course included six to eight projects per year. Every six weeks, teachers reviewed the outcomes represented in the learners’ products in order to improve subsequent projects. The standards and cognitive skills they were working on in each project and the next steps they needed to take to advance along the mastery-based continuum of the Cognitive Skills Rubric were made explicit to learners. Learners had degrees of choice within projects, such as choosing the novels for Literature Circles and proposing how they would demonstrate mastery.

Teachers provided pacing guides and calendars so that learners had a clear vision of what they should be doing on a daily and weekly basis. Calendars helped learners understand the expectations for each project and supported them in developing time management skills. Learners could work ahead or be a little behind, but were continually aware of optimal pacing. Teachers offered revision windows and scaffolds to keep students accountable for demonstrating mastery while also permitting them to work at different paces; they structured time and additional supports at the end of each cycle for revision and completion including office hours, a Student Support Lab, and a support block during lunch. Formative and summative assessments gave learners multiple, flexible opportunities to demonstrate mastery of cognitive skills throughout the year.

DSISD used the district’s data driven instruction practices to ensure students made expected progress, that projects were rigorous, and that projects covered appropriate breadth and depth of standards. Teachers and leaders reflected that it took them the year to understand how to construct projects in a way that enabled learners to complete them efficiently and that provided learners and teachers with access to reliable and transparent data, which are essential in a competency-based approach.
“While the project time-line can still flex for learners, if you don’t put some parameters [around them], you risk constant procrastination and a completion issue. In general, without pacing you’re going to lose efficiency and the collective movement of a group,” Medved noted. “We also asked: How can we have predictable cycles in our school? A project needs to hit standards that intentionally spiral project to project. The six-week cycle allowed us to run a consistent data process that’s high frequency and [aligns with] best practice on data-driven instruction.”

As DSISD looks to the future of its cohort model, the school is focusing on providing learners with clear progressions and multiple pathways to access the most rigorous learning. The team conducted equity audits throughout the year to ensure that the cohort model was increasing opportunity and equity and not tracking students or perpetuating historical gaps. The school will continue these audits next year and beyond. “The goal is that [we are] increasing proportionate, equitable representation in the cohorts […] because every kid deserves access to high value learning opportunities,” explained Medved. “So if a kid comes in two to three years behind, we have to guard against [locking them in]. We have to push [and ask ourselves], how am I going to close the gap to get them into that AP cohort group?”

In year two, teachers will implement the cohort model from the outset, providing learners with coaching and other supports.

Early Impact of Personalized Learning

The Imaginarium plans to follow and study the impact of personalized learning efforts on learner achievement and academic growth. For the purpose of this study we capture early perceptions of impact from leaders, teachers, and learners.

Teacher and leader reflections and classroom observations reveal that DSISD successfully established a foundation of trusting teacher-learner relationships and a learner-centered culture. As DSISD’s Dean of Culture, Otto Espinoza, reflected, “Our feedback surveys show 100% of kids valued their education and loved coming to school….We got that feedback from kids that this is another home for them, that they are appreciated and valued and loved for who they are….What more could you want?” Learners’ voices were also honored as adjustments were made to the dress code, advisory component and the creation of the cohort model, all in response to learner feedback. As one learner stated in a focus group, “Learner voice is big here and we are able to say if something isn’t working for us.”
Explicit instruction around learner agency also increased ownership of learning at DSISD. As Espinoza described, “Learners were coming in during lunch time, staying after school, coming in early, and really owning everything that they needed to do. They didn’t say ‘Oh it didn’t happen during the class time and I can't do it at home so it doesn’t get done.’ They really stepped up and took ownership of everything that they needed to do.” Student reflection echoed this sentiment; one learner stated, “It is important to take ownership of your failure and not blame it on the teacher. You need to feel in control.”

Teachers and leaders reflect that the school’s approaches to Competency-Based Learning pushed learners to achieve rigorous outcomes and master standards and skills at their own pace and also increased learner engagement. As Espinoza described, “I get goose bumps when I talk to people about what we accomplished and where our kids are right now. I think our kids at the end of their ninth grade year, intellectually, surpassed a lot of kids in the tenth and eleventh grade.” The cohort model also provided learners and teachers with an efficient and sustainable way to implement Competency-Based Learning. Medved reflected, “Learners are working at the edge of their stamina constantly so they’re maximizing learning, but they’re doing it in a community so when those lulls come somebody can pick them up or they can pick up their peer....It created a sense of community. It gave kids a sense of purpose, and something to strive towards. Teachers had a foundation and predictable system to build upon, and kids were empowered.”

**Early Lessons Learned**

As DSISD looks ahead to year two, the school aims to expand upon the foundations they laid in year one to deepen Personalized Learning. Lessons learned are synthesized here to provide guidance and direction to educators, leaders, and district staff.

**Learner Agency**

Enhance explicit instruction on skills and mindsets that enable learners to practice agency. DSISD discovered the importance of creating, aligning, and reinforcing these skills. Design My Future, strengthened by opportunities to practice agency in coursework and get feedback on it in advisory, will be key to developing learner agency in future years at DSISD.

Scaffolding is necessary to develop learner agency. There is danger of isolation in building agency, and it is important to take a collaborative approach. “There’s this historic paradigm that kids are the vessel that the teacher pours lessons into them. We’re trying to change that paradigm to say the kid reaches out [for help], and determines their own learning. But getting from being a vessel for eight years to seeking out all your own knowledge [is difficult],” explained Medved. “We’ve scaffolded in a lot more of the explicit skill building in ninth grade and tenth grade so that when kids get to eleventh grade and twelfth grade they have a foundation of learner agency and they can self-direct.”
School conditions
Anchor in a strong, compelling vision. The first year of opening a new school – putting design into practice and operating in a start-up environment - brings challenges. DSISD found that having a compelling vision and grounding every decision in this vision created a strong culture and enabled the school to navigate through inevitable first year challenges. As Simms described, “The vision is the first test for all of our decisions and school design elements. This simple stake in the ground creates unity and confidence among the staff and provides consistency in the midst of uncertainty and change.”

Leadership must support, trust and empower teachers. Teachers consistently reflected that having school leaders' trust and being given autonomy to take calculated risks were key factors that enabled their success in year one. As Lead Science teacher Jessica Goldstein explained, “Everybody's really rallying behind us and they're asking the right critical questions….The culture is always constructive and supportive and it's helped us to grow immensely.”

DSISD leaders developed a highly distributed leadership model, giving teachers flexibility in generating solutions and designing their content area’s instruction model, but at the same time requiring them to clearly commit to a course of action and agree on norms and structures. As Medved described, “I work alongside people. I co-create systems and then I let other people run those. I will consult and confer and make sure they’re on track and we fine tune them together….Everybody gets to lead and create in their own way and I see my job as making sure that all these different systems support the vision.”

Ensure teachers are committed and have a tolerance for change and failure. The team is critical. Teachers taking on this work must be committed, resilient, flexible, willing to take risks outside of their comfort zones, and unafraid of failing. As Medved reflected, “Building a team of people that I trust, that I can be vulnerable with and that I can count on, and creating a culture of trust where risk is incentivized is key. We’re going to take smart, responsible risks…we’re in uncharted territory…and you better be passionate about it. The last thing it is is secure. So you need to be surrounded by a team of people that are like-minded and want that experience.”

Implementation
Minimize the learning curve by making use of outside resources. By using and adapting Summit’s learning management system and Cognitive Skills Rubric as well as INACOL’s definition of a competency-based model, DSISD was able to navigate the change management associated with the shift to personalized learning.
As Medved explained, “We employ a pragmatic approach...We need to deliver results with our kids here and now which means we borrow what works but then we get to translate it. We saved ourselves three, four years and we’re way out ahead.” Innovation requires both building on what works and inventing new ways of working; it's not about reinventing the wheel, it's about smart, pragmatic leadership coupled with passionate, bold creativity.

"We employ a pragmatic approach...We need to deliver results with our kids here and now which means we borrow what works but then we get to translate it. We saved ourselves three, four years and we’re way out ahead."

Learn through feedback loops. DSISD made changes throughout the year in response to learner and teacher feedback secured through surveys and focus groups at the end of the six-week improvement cycles. “One of our successes was that as a team we were willing and committed to making changes to meet kids and their needs. Instructional shifts, culture shifts, whatever that might have been. We’re dedicated to doing what we have to do to help kids be successful,” stated Espinoza. As the school grows, it will continue to respond to learner and teacher voice while settling into an increasingly clear and consistent instructional model.

Streamline and focus advisory. DSISD discovered its advisory structure attempted to cover too much and was not the best place to implement curriculum to build learner agency. Next year, DSISD will dedicate advisory to community and relationship building through self-reflection and coaching, while Design My Future will explicitly teach skills related to agency.

Monitor cohort model to ensure equity. DSISD will continue to monitor its cohort model through equity audits and will work to increase access to the advanced cohorts. Every teacher will articulate a goal to move a target percentage of learners into the advanced cohorts by the end of the year.

Refine project-based learning to ensure alignment with data-driven practices. DSISD will continue to improve the integration of data-driven cycles with Project-Based Learning. With focus on the data-driven instruction driver, the team plans to provide a local and national model for Project-Based Learning. Teachers will meet regularly to look at student data to assess engagement and achievement.
**District Implications**
Facilitate a network of support and resources that schools can draw on. DSISD leaders identified keys to their success: Support from the district, access to a national community of practice with Springpoint Schools and Summit Public Schools, and autonomies earned as an innovation school. “There’s a number of district resources folks and partners…that I can draw on, and a national learning community around me of leaders doing the same work. On my own, I could never do it,” said Medved. DPS can continue to support the school by developing a bank of resources for Personalized Learning, ensuring that schools have genuine opportunities for flexibility, and providing a local network of practice like the national network that DSISD valued so much.

Medved is optimistic for the future. “I believe we will use Personalized Learning to get to rigorous outcomes that the elite programs focus on.” The Imaginarium looks forward to following and measuring the impact of these efforts in the years to come.
What is Personalized Learning?
Personalized Learning has no single definition within the national education landscape. Therefore, as DPS first explored personalized learning as a district-wide improvement strategy in 2012, leaders hosted stakeholder conversations with learners, teachers, and families to understand what personalized learning meant to them. From these conversations emerged common beliefs: that all learners are unique, that all learners can achieve at high levels when they form strong relationships in supportive environments, that all learners should have the opportunity to define and pursue their personal interests, that resources and instructional strategies should be flexible in order to meet their needs, and that teachers should be supported and empowered so that they might, in turn, support and empower learners. From these beliefs, Denver developed its own definition of personalized learning, captured in the framework below. Individually, each practice described in this framework requires shifts within our current education system. Implemented together, they challenge our current system entirely.
Personalized Learning: A Journey Through Year One

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Growing Roots

A new Denver elementary school’s journey towards personalized learning

Roots Elementary aims to re-imagine school—to show that innovations in scheduling, learning spaces, technology, and staff can help meet all learners where they are and close achievement gaps. The school opened its doors in fall 2015 to 100 kindergarten and first grade learners in the Northeast Park Hill neighborhood. This fall, Roots moved into a brand new facility, where it will grow and serve hundreds more students and families in the coming years. This case study focuses on Roots’ experience in its inaugural year, and the lessons the school learned along the way.

Roots’ founding team drew from best practices across the country while also challenging deeply-held assumptions about the structures of elementary learning. After three years of research and design, Roots defined its vision—Roots Elementary envisions a world where demography is not destiny—its mission—to empower all children to determine who they are and who they will become by providing an exceptionally personalized, rigorous, and joyful education.”

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Roots Elementary School

Background

School Type:
Charter
Current Grades:
K and 1
Grades at Scale:
K thru 5
Students Served:
100 (600 at scale)
Demographics:
66% African American; 21% Latino; 8% Caucasian; %5 Other
FRL: 87%
ELL: 3%
SPED: 10%

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At Roots, learners are not assigned to single classrooms according to their age and grade but progress at their own paces through a variety of environments that utilize multiple learning modalities. To implement the design, the Roots team prioritized the following instructional principles:

**Re-imagine teacher roles.** Roots defines three distinct roles that support learner development. **Content teachers** deliver instruction in one content area, rather than managing a single set of learners over all content areas as elementary teachers usually do. **Learning coaches** conduct one-on-one coaching sessions to help learners set goals and monitor progress, provide teachers with data to drive content instruction, and support learners’ social and emotional development. Finally, **teaching fellows** support content specialists and reduce the student-to-teacher ratio.

**Reimagine the school day.** Learners spend time in four primary learning environments.

- **Content instruction:** Learners are placed in content rotations. Content groupings are re-assessed on six-week cycles based on learner data. Even more, learners are flexibly grouped within content environments multiple times in any given day.
- **The Grove:** Learners spend a substantial portion of their day in the Grove, a large open space that supports Personalized Learning. Each learner has an individual Grove schedule, rotating through a variety of learning centers including library, writing, iPad, and maker space. Content teachers set Grove priorities for each learner every two weeks based on data from content instruction and assessments and these priorities help generate each learner’s schedule, which is presented as a personal playlist. During Grove Time, learning coaches conduct one-on-one sessions with learners and teachers pull learners into small groups for instruction to remediate and accelerate skills.

[Diagram A: The Grove]
Coaching sessions: Coaching sessions are built into the school day and play an important role in Roots’ learner-centered model. Coaches help learners reflect on their academic and social-emotional progress, set personal learning goals, and develop plans to meet these goals. Coaches use personal learner profiles that outline each learner’s goals, and collect data from multiple sources to guide these critical conversations.

Morning and closing circles: Whole-school morning and closing circles supplement coaching sessions as additional opportunities for learners to check in with teachers, reflect on progress made, and set goals for the day and week.

Use cutting-edge technology. All learners have their own iPads that generate their individual daily Grove schedules, create their learner profiles, and capture their academic data. During Grove time, learners have access to digital curricula such as ST Math, Dreambox, RAZ Kids leveled library, and Lexia.

The Roots team implemented multiple innovations at once and infused elements of personalization throughout their school model. This case study will focus on Roots’ approach to strategic resource use, learner paths, and developing learner agency. The study will describe how building networks of relationships, providing learner supports, and adjusting learners’ schedules in response to data can support even the youngest of learners in developing the foundational skills to thrive in personalized environments.

Research Methodology
The Imaginarium studied Roots’ Personalized Learning efforts through site observations and interviews. The research team visited Roots ten times throughout the year to observe instruction in the Grove. At the end of the school year, the Imaginarium conducted five teacher interviews and two coach interviews and observed coaching sessions with seven learners. The information gathered through these efforts is synthesized in this case study.

Personalized Learning in Practice

Strategic Resource Use
The Roots team recognized that they would need to help learners understand and meet expectations for each learning center within the Grove, independently use the Grove’s resources, and adapt to the open and flexible environment.

At the start of each Grove session, learners used their iPads to “check in” to the Grove; the check in application allowed them to access their individual Grove playlists and schedules for the day. The check-in app used picture representations for each center, helping learners find their places in the Grove. Music signaled the start and end of each Grove rotation. Learners scanned in to every center with their iPads, launching either the applications they needed to use or instructions about what they needed to do. Apps and instructions were individualized for every learner.
Content teachers responded quickly to learner needs and pulled small groups for remedial or accelerated instruction. Content teachers were available to provide these individual and small group supports because of teaching fellows who “floated” during Grove time, helping learners stay on task. Technology also facilitated individualized supports; the learning applications used in the Grove generated data reports for each learner, which teachers used to nimbly identify and respond to individual needs. Content teachers and coaches could pull data on any learner from the last six months with a click of a button. They could also watch each learner interact with learning applications from their own screens, directly observing learners’ mastery or difficulty with specific skills or concepts. Content teachers used technology to target learners’ specific skill and content gaps throughout the year, helping to accelerate progress.

[Diagram D: Roots Key Digital Resources]

- **Lexia**
  - Addresses phonics and literacy skills
  - Has been super successful for Roots’ lowest performing scholars
  - High levels of investment and incredibly targeted to meet each student exactly where they are and experience success

- **ST Math**
  - Addresses math skills
  - Great for visual learners so has been especially successful in engaging non-readers, ELL and dyslexic students
  - Incredibly targeted to meet each student exactly at their level

- **Class Kick**
  - Application for independent work
  - Teacher uploads any PDF and student use their fingers to complete the work on their iPad
  - Teachers can view everyone’s screen in real-time, can write direction on student’s sheets and conference with multiple kids at one time
**Learning Paths**

Roots employed two coaches, each of whom managed a cohort of fifty learners. Coaches maintained and updated each learner’s personal profile with input from content teachers and hosted coaching sessions to help learners set and reflect on goals related to social-emotional and academic progress. Coaches intended to meet with each learner every two weeks. In practice, they met with each learner every six to eight weeks, believing it would be more beneficial to engage in deeper rather than more frequent conversations. A typical coaching session was tightly structured and centered on Roots’ Power Habits.

[Diagram B & C: Roots Coaching Session Flow and Roots Power Habits]
Coaches were responsible for recommending adjustments to learners’ instructional plans and Grove schedules, as set by Content Teachers. Coaches might make recommendations about prioritization of Grove time in different content areas, for example, or suggest scheduling longer blocks of time to allow for more intensive small group instruction in challenge areas. After each session, coaches updated the learner’s personal learning profile and emailed the entire staff regarding the content and outcomes of the session. This communication kept all adults in the building informed about each learner’s goals and progress. Content teachers and coaches cited this communication practice as a key to success. As lead STEAM teacher Leksy Wolk explained, communication practices “allowed for rich problem solving. You could learn why a learner thrives in one environment and adjust your own classroom accordingly.”

Coaching sessions created structures for learners to voice needs and preferences about at least one aspect of their learning, the content of their Grove playlists. However, the team observed that they needed to do more to develop learners’ social and emotional skills and capacity for self-regulation before allowing them greater voice or opportunity for agency. They decided to modify coaching sessions and implement a school-wide approach to scaffolding self-regulation before promoting these higher levels of agency.

**Developing Agency Through Self-Regulation**

The Roots team wanted a shared approach to developing self-regulation and therefore adopted common strategies for all teachers. They implemented the Dovetail curriculum as the school-wide framework for social-emotional development. Teachers and coaches introduced and reinforced the twelve tools from the Dovetail toolbox in morning and closing circles, content instruction, and coaching sessions. Coaching sessions became “practice spaces,” where learners could develop the skills needed to reflect, advocate for their needs, and begin to take ownership for their behavior as well as their learning. The staff created non-punitive de-escalation areas throughout the school to give learners spaces to rest, reflect, and work through problems. They also used Dovetail’s school-wide behavior system to provide daily reports to learners and families, to reinforce the tools outside of school. Roots used restorative approaches like peace circles to give learners additional support with solving inter-personal challenges and managing conflict. Lastly, Roots established Power Habits, a subset of twenty-eight Habits of Success that all Roots learners are expected to develop. Roots viewed Power Habits as the non-academic competencies that students should develop, while the Dovetail curriculum and toolbox contained the concrete strategies and language that teachers and learners employed to help learners develop these habits. Learners set goals related to the Power Habits in their coaching sessions and reflected upon their progress towards these goals. Based on this foundational work, the Roots staff observed that learners grew in their abilities to self-reflect, self-regulate, and self-direct. As is discussed later in this report, Roots will build on this foundation in year two and beyond.
Snapshots of Coach and Learner Conversations

Roots’ social-emotional and self-regulation practices are illuminated by learners’ reflective discussions with coaches during coaching sessions:

**Learner**: “Sometimes I get a little angry, but then I use my breathing tool.”

**Coach**: “Have you used any tools [if being bullied]?”
**Learner**: “I used ‘time and time away’ [tool]. And in my time and time away I did not think about that person and just thought about how I could have a good day.”

**Coach**: “How is The Grove going for you?”
**Learner**: “I don’t like the library center. It’s hard for me to read and I’m getting rushed.”
(The coach then changed the learner’s Grove playlist to stack their schedule with back to back library blocks to allow for more library time.)

**Learner**: “I’ve been a little distracted in class… [Jane Doe] has this seat they’re always sitting in and makes a lot of noise.”
**Coach**: “What can you do when [that learner] is making a lot of noise?”
**Learner**: “I can do what I do at home… just walk away.”
**Coach**: “Well it’s hard to walk away in class isn’t it?”
**Learner**: “Or I can ignore [the person].”

**Coach**: “What do you want your goal to be?”
**Learner**: “To get good grades and doing the right thing. Showing empathy.”
**Coach**: “How are you going to do that?”
**Learner**: “By showing respect, self-control, and kindness.”
Early Impact of Personalized Learning

The Imaginarium plans to follow and study the impact of Personalized Learning efforts on learner achievement and academic growth. For the purpose of this study we capture early perceptions and leading evidence of impact from observation and staff reflections.

“...What I am seeing and what I think we are going to see [in a year or two] is an intense ability to focus, ...be a self-regulated person, and the ability to teach yourself how to be able to adapt to different situations.”

Teachers reflected that their explicit focus on teaching the Power Habits and self-regulation skills built a strong foundation for learners to own their behavior and understand how behavior impacts learning. Several teachers noted that by the end of the year Roots learners were better able to self-regulate and problem solve, which allowed them to benefit from the opportunities for independent, Personalized Learning. Teachers valued opportunities to coach learners on how to work through being “stuck” in their learning, and observed learners cultivating independent problem-solving skills. Learners were increasingly able to persist in the face of setbacks and take an active role in their learning. “What I am seeing and what I think we are going to see [in a year or two] especially with kids working in an unstructured environment like the Grove and putting them into an environment...where they have to problem-solve all the time, is an intense ability to focus, ...be a self-regulated person, and the ability to teach yourself how to be able to adapt to different situations,” explained Roots coach, Megan Miles.

By the end of the year, learners had developed many of the skills needed to manage their individual schedules and used these skills to engage effectively in the Grove. “Kids are internalizing this language and using their words to express to other kids: I need to focus. Please don’t talk to me. I am going to change seats,” said Miles. “It is amazing to me that five- and six-year olds are able to articulate that and are so invested in what they are doing that they are learning how to get from place to place [without a teacher and in a space with a lot more freedom like The Grove].”

Teachers and coaches noted that learners grew their ability to self-reflect and set meaningful goals around self-regulation during one-on-one coaching sessions. Miles noted that by the end of the year learners could express what they needed and identify the tools to help them get there. “Our kids are getting really good at [identifying what they need],” explained Miles. “It is pretty amazing that [by the end of the year] almost all of the time what we felt they needed to work on most was the goal the scholars wanted to set for themselves.”

“It is amazing to me that five and six-year olds are able to articulate that and are so invested in what they are doing that they are learning how to get from place to place [without a teacher and in a space with a lot more freedom like The Grove].”
Early Lessons Learned
As Roots looks ahead to year two, the staff will extend personalized learning by expanding upon the foundations they laid in year one. The following lessons learned and areas of improvement are keys to future success.

Learner Agency
Instruction is necessary to develop agency for young learners. While Roots always planned to focus on the social-emotional development of its young learners, the staff did not anticipate the degree to which their learners would need support to develop self-regulation skills. Without these skills, Roots’ young learners were unable to successfully engage in a Personalized Learning environment like the Grove. Roots spent much of year one developing self-regulation skills in its learners and will begin year two with a much better idea of the time and degree of instruction necessary to build these skills.

“Improve scaffolding structures to build agency. As Roots learners grow older, independent learning time should allow them more voice in the “how” of their learning, and decisions about activities, experiences, and strategies should become learner-driven.”

Improve scaffolding structures to build agency. With foundational self-regulation skills established, Roots expects to give more opportunities for scholars to direct their learning in the Grove. In year one, learners had influence around the “what” of their learning by providing input about their Grove playlists. However, they did not have the opportunity to influence the “how;” learners had few opportunities to choose activities, which were assigned by content teachers and coaches. As Roots learners grow older, independent learning time should allow them more voice in the “how” of their learning, and decisions about activities, experiences, and strategies should become learner-driven. One teacher described the ultimate vision for the Grove: Learners will engage in independently-designed research projects based on their interests and focused on personal learning objectives, and will progress through Grove centers based on their personalized projects.

School conditions
Establish teacher communication and collaboration systems. Teachers and coaches repeatedly cited communication as a key strength. Simple email communications in follow up to coaching sessions informed all staff about each learner’s goals and needs. To maintain the same level of knowledge of each learner’s profile as enrollment grows, Roots will continually assess and refine its communication systems. Roots plans to build a system to transparently track a learner’s progress toward goals set in coaching in order to enable the entire staff to collaborate and support learners in achieving their goals.

Ensure staffing structure supports personalized learning. Roots’ founding team worked to develop a staffing structure that would support their highly personalized model. By having teaching fellows float during Grove time, there were enough adults to support to learners, which allowing the other teachers to focus on small-group instruction.
Implementation

*Increase family involvement and engagement.* To reinforce self-regulation and foster learner agency, Roots will engage families in goal-setting processes. Next year, coaches are planning to call parents after each one-on-one session. This lesson reflects a key component of Denver’s Personalized Learning framework: Community is a learning resource just like time or technology, and Personalized Learning schools must find ways to build a strong and culturally responsive connection between school and home.

*Refine coaching sessions.* Once learners have developed foundational self-regulation skills, Roots can expect to transition its coaching sessions to focus less on the Power Habits and more on increasing learner agency in instructional decision-making. In future, Roots plans to hold coaching sessions with twenty learners a week (compared to eight learners per week currently) so that each coach will see each learner every three weeks. Content of the sessions will include reflection on academic standards, articulating next steps in learning, and setting goals and selecting Grove activities to help learners achieve them.

*Improve set-up of the Grove.* Roots plans to adjust the physical setup of the Grove to provide more choices. For example, staff will set up small “cubbies” around the Grove so learners may choose quieter spaces for independent work time should they need them. Learners will also have the choice to access spaces outside of the Grove, such as the library or writing center, if those environments help them learn best.

With these insights and lessons learned from year one, Roots looks to build upon its Personalized Learning efforts in year two and beyond. The team’s work has established a foundation for continued success. As Miles reflects, “I am seeing [our learners’] love of learning [grow daily…]. And as they get older, the Grove [and their school experience will be] even more independent and even more autonomous. There are [so many] possibilities and we are just scratching the surface with what we can do for kids. By the time [our learners] are in third, fourth, and fifth grade, it will be really amazing to see what they [can do] on an independent level.”

“Community is a learning resource just like time or technology, and Personalized Learning schools must find ways to build a strong and culturally responsive connection between school and home.”

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What is Personalized Learning?

Personalized Learning has no single definition within the national education landscape. Therefore, as DPS first explored personalized learning as a district-wide improvement strategy in 2012, leaders hosted stakeholder conversations with learners, teachers, and families to understand what personalized learning meant to them. From these conversations emerged common beliefs: that all learners are unique, that all learners can achieve at high levels when they form strong relationships in supportive environments, that all learners should have the opportunity to define and pursue their personal interests, that resources and instructional strategies should be flexible in order to meet their needs, and that teachers should be supported and empowered so that they might, in turn, support and empower learners. From these beliefs, Denver developed its own definition of personalized learning, captured in the framework below. Individually, each practice described in this framework requires shifts within our current education system. Implemented together, they challenge our current system entirely.

Sabin World School

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Sabin World Elementary School (Sabin) serves over 700 diverse learners in Southwest Denver. Sabin is committed to innovation in service of its vision, To prepare academically and socially skilled citizens of today to be ready for post-secondary education and to meet the challenges of a global tomorrow. One of only three public elementary schools in Denver to offer the International Baccalaureate (IB) Primary Years Programme, Sabin aspires to be a model of globally conscious, concept-based, and Personalized Learning.

Sabin’s path to Personalized Learning began when teachers applied for and were awarded the Janus Foundation’s Blending Learning Grant in 2013 and 2014. Teachers were inspired by creating new opportunities for learners and discovered how technology could differentiate instruction and engage learners in ways they had not imagined. They also discovered, though, that technology alone would not create truly meaningful learning experiences for every child. “Our thinking started to shift from blended learning to Personalized Learning, and instead of thinking about technology driving the work, realizing the work is technology-enabled. Technology can accelerate the pace at which we can do Personalized Learning, but it is not the only driver.”

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Janine Logar, fifth grade teacher and team lead. “Technology can accelerate the pace at which we can do Personalized Learning, but it is not the only driver. That was a big aha for us.” Sabin’s shift to personalized learning took root in their belief that the structure of a traditional school could never adequately prepare all learners with 21st century skills to succeed in post-secondary environments and beyond. “Employers are looking for a very different skill set than even when I graduated. They care about your ability to communicate, collaborate and innovate, and none of those skills are embedded in standard teaching methods,” said Logar. “We really wanted our kids to see themselves in school, and [see that] that every child matters regardless of their learning style. And we wanted our kids to be doing what we know businesses are demanding of learners. If we manage the school day from bell to bell, how do they ever have the chance to be creative or critical thinkers?”

Teacher and leader commitment to innovation runs deep at Sabin, so much so that when the school applied to be a part of Denver’s inaugural pilot Personalized Learning cohort in 2014, teachers predicated their application on the guarantee that they would design and implement Personalized Learning with or without additional resources and support. The Imaginarium recognized this commitment, supported by Sabin’s track record of success implementing innovative efforts, as an asset and a predictor of success.

Grounded in design thinking, the Imaginarium’s approach to school re-design emphasizes developing prototypes and testing them in short cycles in order to facilitate rapid learning about what works and how innovations in the classroom can be improved. In keeping with this approach, the design team of teachers and Principal Kirsten Frassanito identified four pilot classrooms – two second grade and two fifth grade – to develop and test specific Personalized Learning strategies in year one, while simultaneously providing whole-school professional development to lay the groundwork for expansion across the school. While several non-piloting teachers began adapting their practice in year one based on the piloting teachers’ positive experiences and their access to professional development, this study focuses on the work of Sabin’s second grade and fifth grade classrooms.

Sabin’s piloting teachers experimented with several strategies to implement Personalized Learning. These efforts focused on three areas of the DPS Personalized Learning Framework: learner paths, strategic resource use, and learner agency.

**Learner Paths.** Second and fifth grade piloting teachers helped each child to develop a learner profile inventory. Teachers developed customized profile inventories that expanded on attributes of the IB learner profile. Teachers provided regular opportunities for learners to assess their strengths and areas for growth and be assessed against these attributes using school-developed rubrics. Learners also used profile inventories to set personal learning goals.
Strategic Resource Use (Space and Time). Second and fifth grade pilot teachers worked with learners to re-imagine classroom spaces that would allow learners to self-direct. Teachers included learners in the re-design process to ensure that spaces would reflect their needs and preferences. Having learners take ownership of the classroom design also supported the goal of helping them to develop agency. In addition, second grade teachers re-designed the classroom schedule in order to better meet learner needs. Lead teachers co-taught the entire body of students in one subject area, with support from Denver Teacher Residents, who moved around the learning space to provide additional help as needed. With guidance from teachers, each second grader developed a personalized daily schedule designed to meet his or her instructional needs in English Language Arts and Math.

Learner Agency. Sabin turned to Project-Based Learning to further promote personalization and collaboration between learners and to give them choices about the topics they would investigate. Teachers designed projects with learners, centering projects on essential questions consistent with the IB program. Projects integrated demonstrations of proficiency of Common Core State Standards, while allowing learners to proceed at their own pace and select how they would acquire information and demonstrate what they had learned.

Teachers implemented some strategies in full, put some in effect loosely, and put some on hold. This case study will examine Sabin’s approach to each of the above strategies outlined above, in order to offer insights into the successes, challenges, and lessons learned in the implementation process.

Research Methodology
The Imaginarium studied Sabin’s Personalized Learning efforts through site observations, learner surveys, and interviews. The Imaginarium employed a field manager who was in the school once a week on average throughout the school year to support piloting teachers. The field manager led teachers through guided inquiry cycles that helped them develop questions about their strategies, examine data, and make changes based on what the data showed. In addition, the research team visited Sabin three times throughout the school year to observe classroom re-design, Project-Based Learning, and learners’ project presentations. At the end of the school year, the Imaginarium conducted one principal interview, two teacher interviews, and eight learner interviews, as well as an interview with Sabin’s field manager. In order to better understand learners’ experience of being in a Personalized Learning classroom, the Imaginarium also conducted an end-of-the-year survey of forty-eight fifth grade learners who had participated in piloting classrooms during the 2015-16 school year. The information gathered through these efforts is synthesized in this case study.
Personalized Learning in Practice

**Learner Profiles**

All second and fifth grade pilot teachers administered learner profile inventories. Profiles built on the IB learner profile, which outlines ten attributes valued by all IB World Schools: inquirers, knowledgeable, thinkers, communicators, principled, open-minded, caring, risk-takers, balanced, and reflective. Teachers expanded on the IB profile, experimenting with other methods to build a more holistic picture of their learners. All learners completed a free Thrively survey, a personality inventory that generates a report on a learner’s interests and strengths. Teachers held individual conversations with each learner about survey results; learners used results to identify personal strengths and growth areas and to establish personal goals.

The expansion of the learner profiles showed some success. Fifth grade teachers observed that learners referenced their profiles and demonstrated increasing levels of self-awareness. Teachers hypothesized that learner profiles helped learners collaborate more effectively as they learned to communicate their goals, needs, and preferences. However, teachers also saw room for more organized and systematic use of learner profiles. Their use of learner profiles was sidelined because they were attempting to implement multiple Personalized Learning strategies simultaneously at the start of the year. In 2016-17 they plan to hone in on learner profiles by having learners interact with them daily. They believe that developing learner profiles should be the very first step toward personalization at the start of the school year, as profiles help establish self-awareness and shape personal goals, both of which are foundations of personalization.

Second grade teachers refined their understanding of learner profiles throughout the year. They studied the work of Anastasis Academy’s Learning Genome Project, which takes into account learning preferences, interests, passions, social/emotional maturation, school environment and a host of other factors that comprise a learner’s strengths and preferences. At Anastasis, these aspects of a learner are explored through an hour-long, one-on-one interview with each learner. Second grade teachers experimented with the resources provided from Anastasis and conducted one-hour interviews with five learners to test the process’s applicability to their own context. Moving forward, Sabin plans to incorporate this interview method with the IB learner profile to build out a learning profile that captures a complete picture of the learner, from both an academic and a social-emotional perspective.

In 2016-17, Sabin will build on this understanding and have all teachers co-create profiles with learners at the start of the year, as a foundational practice to support personalization. Abel Varney, a fifth grade pilot teacher and team lead, explained the importance of profiles: “A lot of these kids have been told what they are their whole lives. What would happen if kids can recognize their strengths and weaknesses, know who they are, know what makes them special, where they are valuable and own all those things?”
What would happen if kids can recognize their strengths and weaknesses, know who they are, know what makes them special, where they are valuable and own all those things?”

**Flexible Scheduling**

Understanding the diversity of their learners’ needs, second grade teachers experimented with flexible scheduling between their classrooms. One teacher led math instruction for all second graders, while the other led literacy. Teachers met with each learner to create a personal learning plan based on multiple assessments, teacher observations, and learners’ own assessment of their literacy and math priorities. The two teachers rearranged the school day schedule so that both could work with small groups in one subject area while the rest of the learners worked on independent, individualized work. Denver Teaching Residents were instrumental in supporting learners in this independent work.

Sabin’s experience with co-teaching provides insight into the supports needed to develop agency in younger learners. Teachers quickly observed that second grade learners found it difficult to engage in a flexible scheduling structure. Learners assigned to independent work did not possess the skills to problem-solve or identify the next steps in their learning processes. As a result, they were often confused and disrupted small group instruction to get a teacher’s help. Even with Teaching Residents present, there were often not enough adults in the room to provide learners with the supports they needed. Second-grade teachers realized they needed to build a foundation of rituals, routines and expectations for independent work. In 2016-17 they will implement scaffolds to support the development of learner agency.

School and system-level barriers also presented challenges. Second grade teachers attempted to change the schedule with full support from their principal, but without a district- or school-wide scheduling system. Teachers did not have access to a software program to generate schedules and consequently had to create individualized schedules manually. The district’s Infinite Campus system automatically assigned specific learners to teachers at the beginning of the year and could not be adjusted to account for the changes. This presented challenges for teachers when it came time to complete report cards and conduct parent teacher conferences. All of these factors eventually caused Sabin’s second grade teachers to put flexible scheduling on hold. Moving forward, the District should offer systems that allow teachers flexibility in how they schedule the school day.

**Project-Based Learning**

Second and fifth grade teachers implemented Project-Based Learning to ensure that collaborative learning in heterogeneous groups remained a core part of learners’ experiences, even as they sought to implement individual scheduling and independent work. Teachers planned to implement Project-Based Learning in a way that would align with the IB approach and allow learners to co-design projects with teachers, progress at a pace based on demonstration of mastery, and select resources based on their personal preferences.
In both grades, projects were built from essential questions that incorporated Common Core State Standards and IB trans-disciplinary themes. Learners created individual goals to meet standards, based on their interests. As Logar explained, “The standards don’t deviate, but the time-frame and the expectation about how they learn it and how quickly they learn it may deviate.” For example, for the fifth grade capstone literacy project, learners could choose any topic they wanted, but had to connect their project to the theme of human rights and to create tasks that connected specific literacy, math, art, science and history standards. This trans-disciplinary project took on many different forms – “What is protest art and how it is used to express yourself?” “The Flint water crisis and environmental rights,” and “Rap and how it used as a voice for change” – but all were grounded in standards and learners’ choices about how to meet those standards.

Second grade classrooms implemented Project-Based Learning using scrum boards, visual organizers that horizontally list project tasks and indicate progress to teachers and learners in an easy-to-read fashion. Learners could select topics based on their interests, opt for individual or group work, and choose the location where they worked.

[Diagram A: Sabin Scrum Board]
The second grade team’s experiences provide insight into the supports needed for younger learners to successfully engage in learner-directed projects. On the one hand, teachers observed that learners were highly engaged and improved their ability to prioritize tasks and manage time. Teachers also discovered, however, that they needed to establish clearer expectations and guidelines for both the independent and collaborative work required in projects and that learners needed clearer direction about how to progress through project stages. Moving forward, teachers will explore new strategies for setting expectations through direct instruction and modeling and will implement scrum boards earlier. They will slowly increase learner autonomy throughout the year, by introducing teacher-guided projects early on, moving toward more learner-guided projects by the end of the year.

Fifth-grade teachers purposefully transitioned from teacher-guided to learner-guided projects. Varney explained, “At the beginning of the year, we made everything for the kids and said, ‘These are the tasks that go with the standards.’ But as the year progressed we turned that over, and [the kids] would be given the standards and they could make up the task that went with it so they were driving their own learning.” The fifth grade learners’ success suggests that a gradual transfer of ownership provides better support for learners. Fifth grade teachers will incorporate the same project-based approach they implemented in literacy in year one into math in 2016-17.
Fifth Grade Learner Reflections of Capstone Literacy Project

Sabin’s Project-Based Learning approach is illuminated by learners’ descriptions of and reflections on their capstone project:

• “In previous projects through all my years at Sabin it was: here’s the central idea, here’s the standards. You have to write this paper, this paper, and this paper. This year we made our central idea. We made our standards. We connected it to our theme. We connected it to everything. We made the project. They did not make the project which is really nice.”

• “Find something that you like [in this project] … To go through the project, you got to find something that you want to look at. What sounds interesting is probably going to be interesting. Or if it doesn’t find something else. If you don’t like fishing, why’d you go fishing? If you don’t like swimming, why would you try to swim across the lake? You have to find something that you want to do in this project.”

• “I’m more likely to look at a picture than read an article and protest art is a great way to express your opinions.”

• “We had a rubric of our tasks and we each had our own so we put them in “to-do”, “doing”, “done”. Then at the end of the day or the end of the week we would each see where we got up to and maybe support one another if someone was behind on a task.”

• “Everyone in the class is at different levels and the teachers work with everyone… And [the teachers] did a great job of finding everyone a good project for their level and what they wanted to do. It wasn’t too hard and it wasn’t too easy. Some projects beforehand in other grades have been too hard and easy.”

Flexible Space

To support flexible scheduling and project-based approaches, both second grade and fifth grade teachers engaged learners in collaborative efforts to re-design their classrooms to provide learners with opportunities to self-direct, utilizing a variety of learning spaces and resources. Teachers wove the re-design work into their Project-Based Learning model, creating a project that incorporated math concepts and required learners to apply those concepts by measuring the room and building three-dimensional models.

While Sabin’s leader carved out a small amount of money for this work - approximately $1,000 per classroom - teachers hoped that having minimal funds would encourage learners to be creative. However, learners lacked strategies to think creatively, exercise ownership in the project, and imagine a classroom space for self-directed learning.
So teachers introduced design thinking in order to scaffold the creative process for their learners. “In order to really think out of the box, you have to change the paradigm [for learners]. So, for example, when we asked them to design their classroom the only idea they came up with at first was “buy furniture,” but then we had them conduct empathy surveys and do research on businesses and restaurants that used flexibly designed spaces. We organized field trips to the second grade classroom that had already been re-organized for flexible spaces and then they came back with a lot of ideas,” said Varney. “There may be some learners who are used to being creative, but to be successful with all of our learners, we need to show them what is possible and … allow them to take it further. By [designing] experiences at the beginning of the year to create a foundation, by the end of the year they could take off and use their freedom to create.”

Second grade learners completed classroom re-design three times during the school year as learners continued to reflect on what they needed from their classroom spaces and as teachers continued to evolve their approaches to Personalized Learning. They encountered district-level barriers along the way. For example, learners and teachers requested that the wall between the two second grade classrooms be removed in order to build a sense of community and to support the co-teaching model, but the District’s construction services were not able to complete the request. They hope to have the wall removed by the end of 2016.

Sabin’s experience with re-designing the classroom matches experiences that are common across many piloting schools. The physical environment plays an important role in shaping classroom culture and can enable or hinder flexibility, choice, and collaboration, which are all important components of Personalized Learning. Re-designing space is a frequent entry point into Personalized Learning for teachers; the process of re-design makes Personalized Learning visible and tangible, and provides a concrete focus for learners and teachers to talk about their hopes, needs, and vision for learning. Once completed, a re-designed space can become a catalyst for further instructional shifts as learners and teachers adapt their respective practices to the new environment.

**Early Impact of Personalized Learning**

The Imaginarium plans to follow and study the impact of Personalized Learning efforts on learner achievement and academic growth. This study captures early perceptions and leading evidence of impact from leaders, teachers, and learners.

Interviews with teachers suggested that Sabin’s co-created, standards-based, and learner-directed approach to Project-Based Learning helped learners better understand and articulate what they were learning and why. As Varney explained, “To have the opportunity to work with standards on a day-to-day basis instead of a worksheet that is aligned to the standards allows [kids] to engage at a higher level than they ever have before.” Sabin found that sharing the standards, allowing learners to choose a focus that would meet the standards, and giving them greater responsibility for managing their projects contributed to learners’ self-awareness, engagement and motivation.
Varney explained, “A number of learners took ownership of their own learning in ways that I think they never had before…[Personalized Learning] showed them that they had the potential to do things themselves and that maybe education was actually important to them after all. You get a lot of kids, especially those below grade level, that have already have given up on themselves at this point in their learning and this year I saw them change that.” Logar added, “Their middle schools won’t know how to handle these kids who are advocating for how they learn and what space works best for them.”

The end-of-the-year survey results conducted with forty-eight fifth grade learners also help to shed light on the learners’ experience in a Personalized Learning environment. For example, when asked what they liked best about fifth grade, in an open-ended response, approximately one-third of learners named something related to autonomy and one-half cited learning experiences directly related to Personalized Learning. Other questions probed learners’ self-perception about several skills related to self-regulated learning: Setting goals, planning a project, keeping track of progress, knowing whether they are doing good work, knowing how they learn best, choosing a good workspace, and listening to feedback. At least two-thirds of learners agreed that they possess these skills, which are so important in the development of learner agency.

In addition to the rewards of observing learners grow in their capacity to take ownership of their learning, teachers grew professionally because of their engagement with Personalized Learning. “It has been revitalizing for me. I don’t consider it to be work. Because of the work we are doing and how exciting it is…it has been rewarding,” said Varney.

Sabin built on the school’s culture of teacher empowerment to begin spreading knowledge and skills about Personalized Learning among non-piloting teachers. All teachers in the school participated in a professional learning community and book study related to Personalized Learning. Sabin’s piloting teachers had Differentiated Role status, which allowed them to coach the teachers who would begin Personalized Learning in the following school year. This coaching model allows non-piloting teachers to get individualized support from a peer and, as Logar explained, “We had little pockets of grade levels that were getting pumped up about this and we had little pockets that started adapting their practice based on what they were learning and seeing. It started to build and people started to get interested. At Sabin it’s been this whisper that has grown to a roar.” These early indicators of teacher engagement speak to the power of teacher leadership and offer promising practices that other leaders and teachers might adopt as they begin planning to scale Personalized Learning across their schools.

**Early Lessons Learned**

As Sabin looks ahead, they learn from the foundations they laid in year one to expand personalized learning in the years to come.
**Learner Agency**

Improve scaffolding structures to develop learner agency. As Varney reflected, “When you have kids that have never done things like this…they lose their minds in this new environment. The kids where school was great for them and they could sit in the back and get all A’s are now saying wait, what? Kids resist that change and you have take the time to encourage and motivate them and show them what they can do and how to engage.” Sabin teachers will scaffold the shift from teacher-driven to learner-driven ownership across all Personalized Learning efforts – from Project-Based Learning to flexible design spaces – so that learners possess the skills to operate in an autonomous environment.

“I just really have a belief in teachers. I trust them. I believe in them. I see their potential… I am their cheerleader. I believe that teachers get into education because they want to make a difference in kids’ lives and if we don’t encourage them to take risks and allow for failure…then they’re never going to try new things and we’re never going to get beyond the status quo... I try to build] a culture of continuous improvement for teachers and kids.”

**School conditions**

Ensure leadership support is in place. Sabin’s teachers consistently cited their school leader, Kirsten Frassanito, as an enabler of their Personalized Learning practices. They reflected that she did not micro-manage their work and that she created a culture of trust and empowerment. Frassanito allowed risk-taking; she asked that teachers research ideas and test them at small scale and then allowed them room and autonomy to experiment and learn from their mistakes. Frassanito explained her philosophy in this way: “I just really have a belief in teachers. I trust them. I believe in them. I see their potential… I am their cheerleader. I believe that teachers get into education because they want to make a difference in kids’ lives and if we don’t encourage them to take risks and allow for failure…then they’re never going to try new things and we’re never going to get beyond the status quo... [I try to build] a culture of continuous improvement for teachers and kids.”

Ensure teachers are committed. Teachers believe strongly and proclaim loudly that the shift to Personalized Learning must be teacher-led rather than driven by administration. Teachers must be committed to the work and comfortable taking risks. Varney summed up the need for teachers to embrace uncertainty: “The work, though rewarding, is hard. You have to be a unique person to say, ‘I don’t know how, but I don’t care.’”

Enhance staffing structure. Sabin will hire a Personalized Learning Coordinator in 2016-17 to oversee the implementation of Personalized Learning and to support teachers for whom Personalized Learning is brand new. This move reflects the district’s commitment to having teachers lead the implementation of school-level priorities and initiatives.

“The work, though rewarding, is hard. You have to be a unique person to say, ‘I don’t know how, but I don’t care.’"
The Imaginarium also recognizes the importance of the Personalized Learning coordinator and will work in the coming year with the Personalized Learning and Human Resources departments to find ways to make sure this position is supported by both departments.

**Implementation**

Utilize a phased implementation approach. Sabin has had success managing the shift toward Personalized Learning by prototyping and testing in a limited number of piloting classrooms. Non-piloting teachers were able to observe piloting classrooms, while participating in school-wide, teacher-led professional development. Frassanito explained this approach: “It’s a good idea to start small....Just build it and do it and let people observe what it's looking like and they’re going to want to do it....When you see your colleague trying it and being open with the things that work and didn’t work for them then everybody feels a little safer taking risks.”

In the first year, teachers designed and tested rapidly; now that Sabin is clearer about the instructional priorities and the conditions needed for success, the school will employ longer cycles. They look forward to a second pilot year in which they will begin to focus on implementation with fidelity.

Increase community trust and engagement. Sabin teachers are aware that work remains to build community trust and understanding. Varney explained, “Our learners’ parents [generally] have a commonality of having gone to the same kind of [traditional] schooling with desks in rows and all of these things that people have in their mind of what school used to be. Breaking parents of that [preconceived idea] is a [hard] thing.”

Sabin believes that communication is the key to educating the community about Personalized Learning. The school hopes to use the teacher and parent portals so that parents can know what their child is working on and what progress is being made in the classroom. The school also plans to incorporate parent and community voice into the learner profiles next year and ensure that families are aware of the information being generated about their child and how it is being used to individualize each child’s instruction.

Improve the use of learning profiles. The entire school will implement learner profiles next year. In addition to IB attributes, Sabin plans to conduct interviews with learners at the beginning of the school year, modeling interviews after Anastasis Academy’s. Teachers plan to use these profiles daily to inform learner groupings and provide individualized scaffolds for each learner.

Refine Project-Based Learning approach. As discussed above, second grade teachers will start using scrum boards at the beginning of the year. Teachers will begin by developing rubrics that define rigor for each standard, offering exemplars and suggesting different next steps that learners can take to improve their work.
**District Implications**

Align district resources and increase investment in personalized learning work. Just as school leadership support is essential for teachers, Instructional Superintendent and district support are critical for schools. Sabin had strong support from its Instructional Superintendent and district leaders, which helped the school’s work progress in year one. However, Sabin also encountered a number of district-level barriers that made implementing Personalized Learning challenging. These include coordinating with DPS construction services and trying to introduce flexible scheduling within Infinite Campus. The Imaginarium recognizes that it needs to seek out ways to partner with departments and district leaders and will evaluate how to better support the implementation of Personalized Learning at the school level.

The district might also examine ways to alleviate teacher workload associated with implementing Personalized Learning. For example, Sabin’s plans to collect data were hampered by lack of access to a central data system to store and analyze learner data. The district is working to address this challenge by introducing a new learning management system and integrated learning platform; once in place, these will make a large difference for teachers. The district can also support Personalized Learning by investing in the development of tools and resources that schools should not have to develop on their own. These might include learner profile templates, proficiency rubrics, and performance-based assessments.

With these lessons from its year one pilot, Sabin is optimistic about the future of the school’s Personalized Learning efforts. The introduction of personal learner profiles, flexible spaces, and Project-Based Learning has established a strong foundation. Varney describes the promise of Personalized Learning, “[Personalized Learning] has been revitalizing for me. I became a teacher to help kids and I got so frustrated that I didn’t feel like I could help kids in the system that there was. Now I feel like I can help kids—and that’s exciting.”
Personalized Learning (PL) is a holistic approach to learning, teaching, and school design. PL helps educators and leaders support the unique needs of diverse students and develop students’ personal agency so that every student succeeds and develops the attributes of a DPS graduate. PL is an instrumental strategy to ensure Denver achieves our 2020 Goals to Support the Whole Child, Close Opportunity Gaps, and ensure students are Ready for College and Career. Early findings from six schools piloting PL in 2015 suggest that students in PL environments have higher levels of academic proficiency than their peer groups in non-PL learning environments, and that they outperform district averages across the board. These positive early data are consistent for almost all racial, socioeconomic, and language sub-groups, suggesting that PL can be an effective strategy for closing opportunity and achievement gaps. Baseline data collected from fifteen schools planning or piloting PL in 2016 provide insight into student, teacher, and school-level factors that influence PL and student achievement more broadly. These baseline findings will be used in spring 2017 to show how non-academic variables affect student achievement in PL environments, and to suggest district strategies for school, teacher and school support.
Personalized Learning Outcomes

- **Student Agency:** Ownership, Self-Advocacy, Self-Direction
- **Social Emotional Engagement:** Behavioral, Emotional, Cognitive
- **21st Century Skills:** Collaboration, Critical Thinking, Creativity
- **Academic Outcomes:** Achievement, Growth, Acceleration
- **Denver 2020 Goals:** Opportunity Gaps, College & Career, Whole Child

Research Questions and Priorities

**Outcomes and impact**

How does PL affect student outcomes, including agency, social---emotional skills, 21st century skills, and academic growth? What impact does personalized learning have on closing opportunity gaps?

**Conditions for implementation and growth**

How do student, teacher, school, and district conditions affect the implementation and outcomes of personalized learning? How can DPS support personalized learning best?
Academic Outcomes

Academic impact appears positive in PL classrooms as compared to traditional classrooms and as compared to the district on the whole. PL appears to accelerate growth for multiple student sub-groups, with the exception of Black students. More research will explore how PL can support Black students and other subgroups, and specify PL practices most highly correlated with academic achievement.

In Science and Math, students in PL classroom outperformed their peers in traditional classrooms. In Science, ELA, and Math, students in PL classrooms outperformed district averages.

ELL, FRL, SPED, and Hispanic PL students performed on par or better than their comparison group peers in traditional environments, and they also outperformed the district.

However, Black students in PL classrooms underperformed their peers in non-PL classrooms and the District. Further research will explore and address this trend.

Student Variables

We collected baseline data about student non-academic variables: agency, social emotional engagement, and 21st century skills. These baseline findings suggest possible relationships between student non-academic and academic variables that may, after end-line data in Spring 2017, suggest strategies for student support.

As a baseline, white students report greater self-efficacy than Hispanic and Multiple Race students. There exist statistically significant gaps between ELL, Non-ELL, and Exited-ELL, FRL and non-FRL, and Special Education and traditional students. Research suggests self-efficacy contributes to achievement; we anticipate PL can increase self-efficacy, especially for sub-groups, and help narrow achievement and opportunity gaps as a result.

As a baseline, students report higher behavioral engagement (paying attention) than emotional engagement (relationships, joy, and support) or cognitive engagement (rigor, critical thinking, creativity). Both emotional and cognitive drop steadily as students mature. We anticipate that students in PL environments will recover engagement levels and close the gap between behavioral and emotional and cognitive engagement.
**Teacher and School Conditions**

We collected baseline data about school climate variables and teacher beliefs that are research-based and correlated with student academic success. These baseline findings suggest possible relationships that may, after end-line data in Spring 2017, suggest strategies for teacher development and school support.

PL schools score high on all measures of Academic Optimism: staff belief that they can reach all students; trust in students and families; and emphasis on academic rigor. Research shows Academic Optimism to be a predictor of academic success controlling for socio-economic status; this suggests that PL schools are positioned for success.

Teachers at schools with green SPF ratings report higher levels of Academic Optimism than teachers in schools with red or yellow ratings. Interventions that address these aspects of school culture may affect school performance.

Teachers in PL schools believe in the value of student agency and exhibit high levels of self-efficacy. They have high growth mindset and progressive educational beliefs, especially when compared to peers teachers in traditional classrooms. Teacher selection, development, and leadership strategies may want to consider these variables.

There are consistent gaps between teachers’ belief that student agency has positive impact on students, and their belief that it is feasible at their school. Schools that have a smaller gap have higher SPF ratings compared to schools where the gap is greater. This suggests a relationship between teacher confidence and school’s success.