



Northshore School District
Strengthening Our Community Through Excellence in Education



Empowering Possibilities

Preparing all Students to Thrive in a World Yet to be Imagined

Northshore School District
2019-2022 Instructional Technology Plan

Introduction

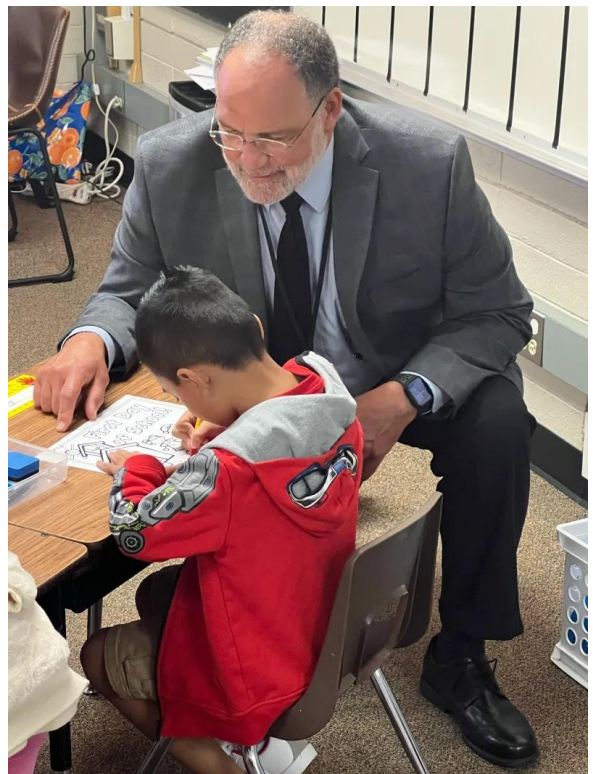
Learning leads to change and change leads to growth and new possibilities. Learning into the future is a precondition for growth, a passageway into living the life you imagine. Our forward-thinking, data-driven Instructional Technology Plan places innovation and digital citizenship squarely at the forefront of the possibilities we create for our students and families. Our community possesses the ingredients for success: caring, committed teachers and staff; capable, empowering leadership; supportive, engaged parents and caregivers; and a responsive, generous community.

More precious than all these are our students – children and young adults whose compassion, sense of wonder, and imagination invite us to dream, to push our boundaries. With this plan, we commit to coupling together the powers of curiosity, creativity, and innovation in technology integration to fulfill the promise we make to our students - to equip them to be contributors to a global community.

With our Instructional Technology Plan, we provide our community with a thoughtful and transparent approach to caring for the investment they have made through their generous support of our Capital Technology Levy. It is our mission to ensure that every dollar spent has a measurable impact on student learning and to report on that investment regularly to inform future investments.

As we embrace learning into the future as an ethic within our schools and community, we will advance steadily toward accomplishing our aspirational goals for ALL of our students and the hopes and dreams for our community.

Interim Superintendent Michael Tolley



Vision and Core Beliefs

In the Northshore School District, we recognize that the world is changing rapidly. As a result, we are fundamentally reconstructing what it means to deliver a contemporary, world-class education that prepares our students for the future ahead of them. Our visionary technology plan sets a bold course for the District, one in which technology is both a keystone component of the teaching and learning experience, and a critical enabler of our operational programs to fully achieve our vision.



The mission of the Northshore School District is to strengthen our community through excellence in education. We believe this mission includes preparing learners to enter a global society as digital citizens who think critically as consumers and creators of information. Embedded in this effort is the requirement that all learners have equitable access to technological resources, when and where they need those resources to develop digital literacy skills. When coupled with guidance from a skilled and effective teacher, technology has the power to amplify and personalize the learning experience for our students, removing barriers and closing the opportunity gap. Such experiences will equip our learners with the knowledge and skills they need to be contributors to our larger global community.



Fundamental to this effort is our belief that each Northshore student has a right to the experiences and learning opportunities that will prepare them for their path in life. These experiences should not be limited by factors such as geographical location, learning ability, race, gender, or socioeconomic status. Removing barriers and closing the opportunity gap is a critical component of Northshore's teaching and learning mission. We believe that technology plays a vital role in our work to provide each student with what they need to thrive and reach their full potential.

Our District



23,414

Students Enrolled
2020-21 School Year

Northshore School District is a public school district covering portions of both King County and Snohomish County, Washington. The district's service area covers the cities of Bothell, Kenmore, and Woodinville as well as portions of unincorporated King and Snohomish Counties.

76.3%

Met ELA
Standards

68.2%

Met Math
Standards

62.6%

Met Science
Standard

2018-19 School Year



95%

Graduated in 4 Years
2019-20 School Year



1,210

Number of Classroom
Teachers
2019-20 School Year



12.6

Average Years of Teaching
Experience
2019-20 School Year



32.9%

High Math
Growth

32.6%

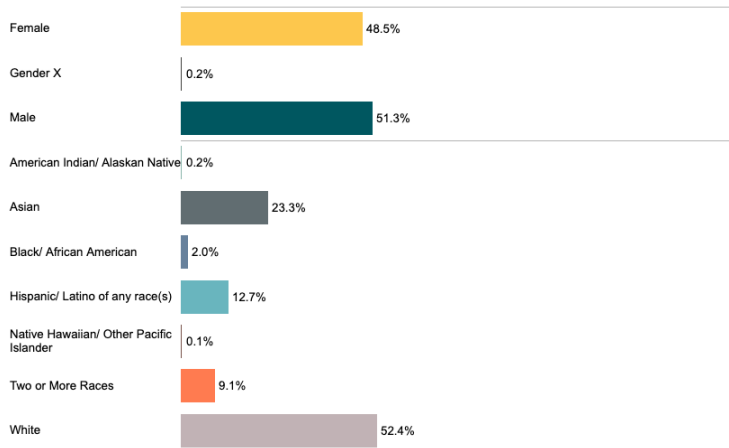
High ELA
Growth

2018-19 School Year

Northshore is committed to creating a safe, caring, and mutually respectful environment within our school district community so that all students, families and staff feel welcomed, valued and supported. We recognize that the diversity represented across our communities and throughout our schools has steadily changed and that even greater racial, ethnic, cultural, religious, economic diversity is projected in the years to come.

How many students were enrolled at the beginning of the school year, by student demographics?

Northshore School District 2020-21



NORTHSHORE SCHOOL DISTRICT

INFRASTRUCTURE



INSTRUCTIONAL COMPUTING DEVICES
29,494 for student use
3600 for staff

NETWORKED PRINTERS
900



INSTRUCTIONAL PRESENTATION SYSTEMS
1400

MINES OF FIBER OPTIC PATHWAY
63.36

WIRELESS ACCESS POINTS WITH
CONNECTION SPEEDS UP TO 150 MBPS
1800

THAT'S MORE THAN ONE IN EVERY CLASSROOM!



DEVICES CONNECTED TO NSD PUBLIC NETWORK
ON AN AVERAGE SCHOOL DAY
6000

STUDENTS LEARNING WITH TECHNOLOGY EVERY DAY!
23,414



LEARNING INTO THE FUTURE!

NORTHSHORE SCHOOL DISTRICT

DEMOGRAPHICS



English Language Learners

9.2 %

English-language learners, or ELLs, are students who are unable to communicate fluently or learn effectively in English, who often come from non-English-speaking homes and backgrounds, and who typically require specialized or modified instruction in both the English language and in their academic courses.



Low Income

11.4 %

Low-income is considered 200 percent of the federal poverty level, and poor is defined as 100 percent of the poverty level. For 2013, a family of four making less than \$23,624 is considered at the federal poverty level, and \$47,248 is considered low income.



Students with Disabilities

12.8 %

The Individualized Educational Plan (IEP) is a plan or program developed to ensure that a child who has a disability identified under the law and is attending an elementary or secondary educational institution receives specialized instruction and related services.



Students with a 504 Plan

8.3 %

The 504 Plan is a plan developed to ensure that a child who has a disability identified under the law and is attending an elementary or secondary educational institution receives accommodations that will ensure their academic success and access to the learning environment.



Homeless

0.3 %

The McKinney-Vento Act defines homeless children as "individuals who lack a fixed, regular, and adequate nighttime residence."

DATA FROM OSPI 2020-21

Northshore's Strategic Plan

Goals that Guide Us

The Northshore Strategic Plan provides a defined set of goals and building blocks that underlie all that we do in the work to prepare students for their futures. It is our “true north” and provides a framework which is supported by the implementation of tools and resources for teaching and learning. Specific to the implementation and use of Technology resources, the Goals are the driving force that guides our decision-making in regard to what we implement, how we use it, and how the return on that investment is measured.



1. Success in the Early Years

Each student will develop intellectual curiosity, persistence, social-emotional awareness, and academic skills to be positioned for success by the end of grade 3. Each student, regardless of background or experiences, demonstrates academic and social-emotional competence for successful transition out of grade 3 through equitable, targeted resources, instruction, and individualized learning.



2. Responsible, Resilient, Empathetic Learners

Each student will feel safe as a responsible and persistent learner, open to and accepting of diverse cultures and perspectives, and empowered to advocate for and pursue their own educational passions. Each student embraces their own voice, accepts ownership of their own actions and experiences, and honors the diversity, unique needs, and contribution of others.



3. Growth for Every Student, Elimination of Outcome and Opportunity Gaps

Each student will experience continuous growth in all subjects, progress toward graduation at a pace that eliminates opportunity and outcome gaps, and receive fair and equitable treatment with regard to discipline. Each student actively engages in rigorous, standards-based curriculum, effective instruction, timely, targeted enrichment and intervention, and proactive social-emotional supports.



4. Innovative, Creative, Critical Thinkers

Each student will be involved in relevant and engaging learning that fosters creativity and imagination, and will gain the confidence and competence to address personal, community, and global issues in collaborative and resourceful ways. Each student engages in culturally relevant and cognitively challenging, real-world learning, while applying knowledge and skills in a variety of ways.

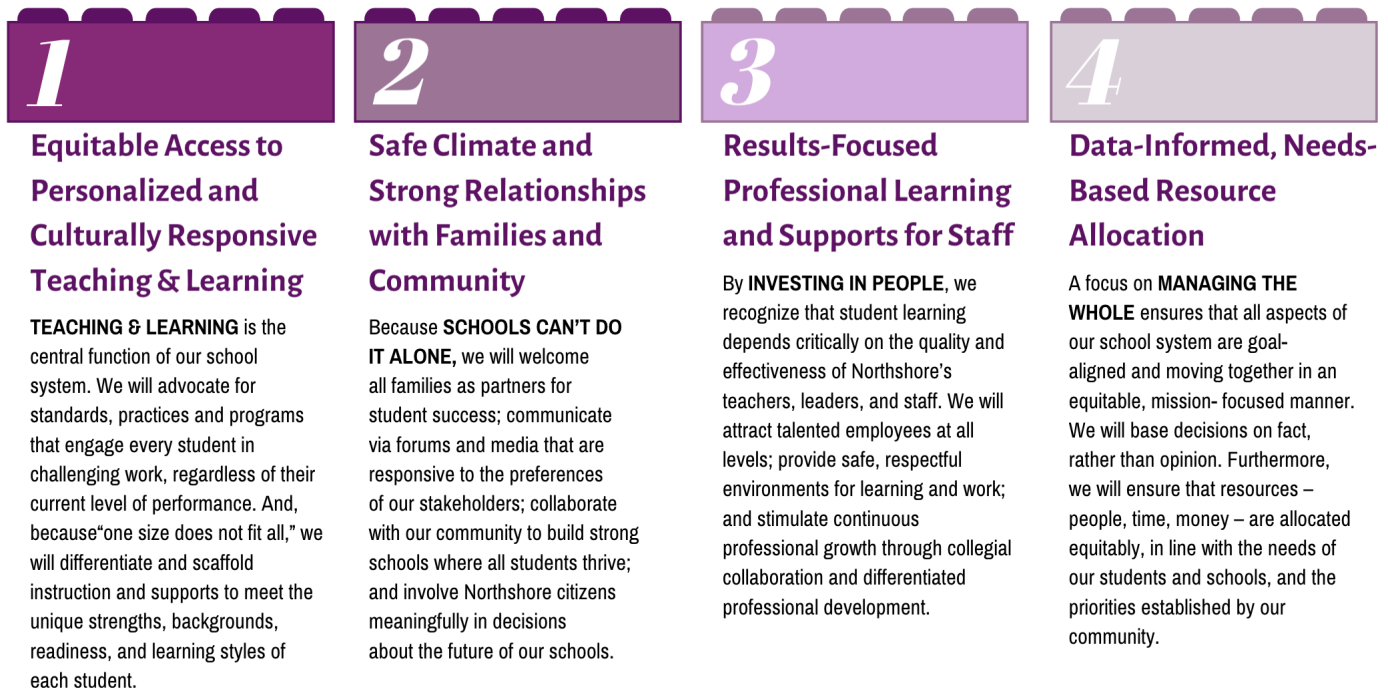


5. Ready for Lifelong Success After Graduation

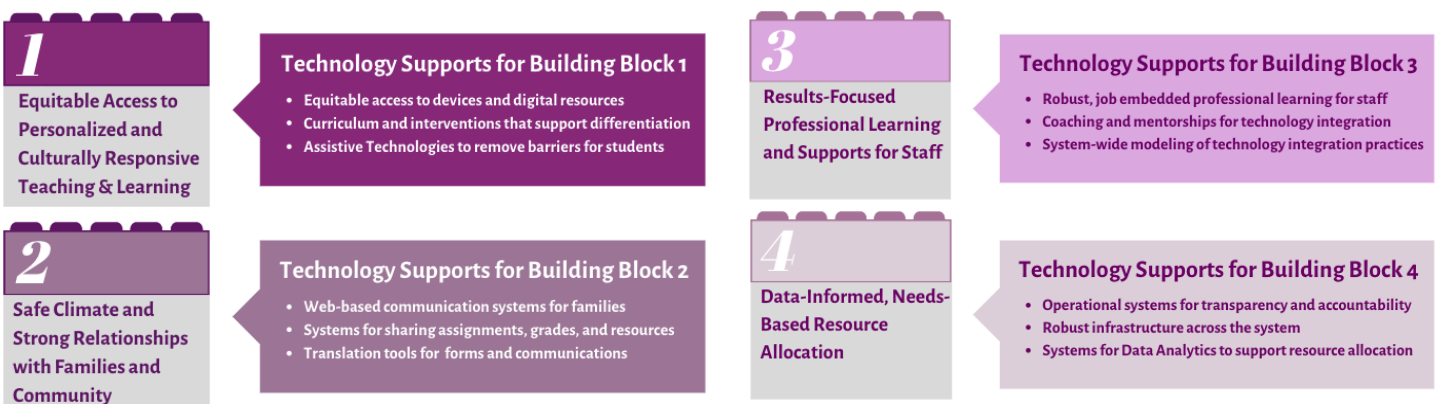
Each student will graduate from high school with the habits for post-secondary success, productive citizenship, and lifelong learning. Each student receives equitable access to experiences crucial for success in college and beyond, and meets or exceeds Washington state's college-and-career readiness graduation requirements.

Building Blocks to Support our Work

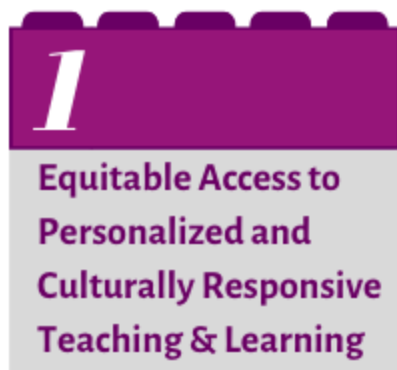
The four Building Blocks of our Strategic Plan are what we must do well to manifest outcomes for students; i.e. they are the means to the ends. Together, the Four Building Blocks define the capabilities we must develop continuously to strengthen instructional effectiveness and organizational infrastructure. The implementation of Technology services and systems provide foundational support for these Building Blocks.



To achieve our ambitious goals, we must harness the power that technology has to strengthen our building blocks. Digital resources, robust infrastructure, and tools to support learning are critical partners in the delivery of a modern education, personalized to the needs of each student.



Foundations for our Building Blocks



Teaching and Learning

Teaching and Learning is the core service that we provide to our larger community. The practices we employ to provide a contemporary educational experience for each of our students prepare them for participation and leadership in our global economy. Technology services and digital resources help us to provide each student with a personalized learning experience that matches their specific learning strengths and challenges.

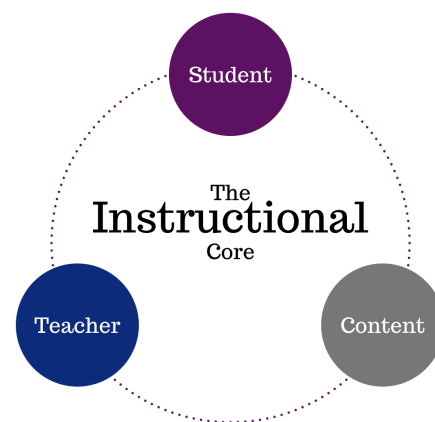
Technology provides us with rich, relevant content and services to deliver that content to students, allowing pacing through Assistive Technologies that respect each student's readiness for developing new skills and consuming new information. Our Leadership Practices reinforce those Teaching strategies through the equitable allocation of resources and the modeling and evaluation of consistent expectations for use of technology services in the act of teaching and learning. Our leaders ensure that policies and resources equip teachers with the right tools and ongoing support to personalize learning in their classrooms. At the Organizational level, we focus on deploying and maintaining technological resources equitably and effectively across the district to ensure that students have what they need when they need it to support their learning journey.

Support for the Instructional Core

*"When carefully designed and thoughtfully applied, technology can accelerate, amplify, and expand the impact of effective teaching practices. However, to be transformative, educators need to have the knowledge and skills to take full advantage of technology-rich learning environments (see Section 2: Teaching). In addition, the roles of PK-12 classroom teachers and postsecondary instructors, librarians, families, and learners all will need to shift as technology enables new types of learning experiences."*¹

In its simplest terms, the **Instructional Core** is composed of the teacher and the student in the presence of content. It is the relationship between the teacher, the student, and the content – not the qualities of any one of them by themselves – that determines the nature of instructional practice, and each corner of the instructional core has its own particular role and resources to bring to the instructional process².

The Instructional Core forms the basis for Northshore's Vision for Instructional Practice. To ensure optimal learning experiences for our students, we leverage practices from three domains that produce the best outcomes. Technology provides support for these practices as students and teachers work in relationship with content to further understanding.



¹ National Educational Technology Plan, 2017, pg. 5

² Instructional Rounds in Education, City, Elmore, Fiarman, and Teitel, pp. 22-23

Research tells us that there are proven strategies that result in the best learning outcomes for students. The three sets of pedagogical strategies that we use are:

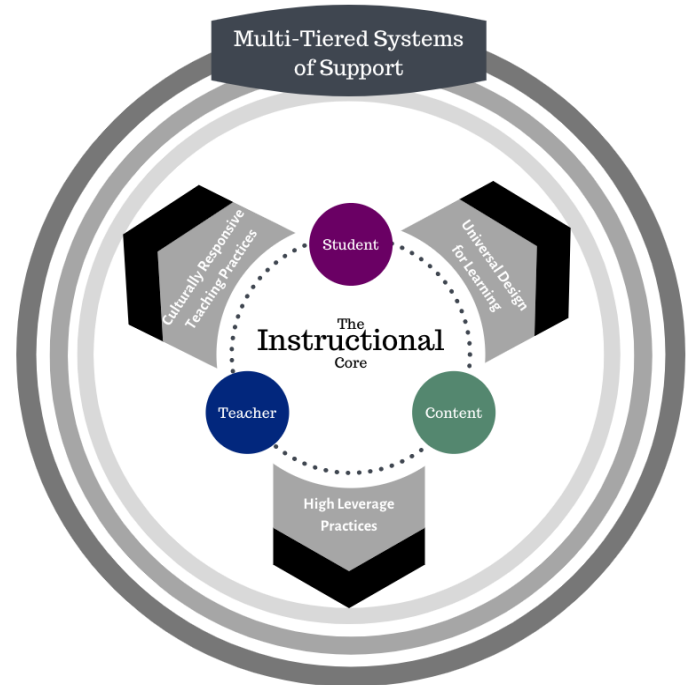
1. **Culturally Responsive Teaching Practices:**

Culture is central to learning. It plays a role not only in communicating and receiving information, but also in shaping the thinking process of groups and individuals. A pedagogy that acknowledges, responds to, and celebrates fundamental cultures offers full, equitable access to education for students from all cultures. Culturally Responsive Teaching may inform our use of technology to tell stories, access information about other cultures, and present content in other languages, among other things. (Ladson-Billings, 1994).³

2. **Universal Design for Learning (UDL)**⁴: The UDL

Model connects neurological research to the presentation and interpretation of content and experience. It frames the learning experience using three parts of the brain that are activated based on the types of experiences we provide in the act of teaching. Those three categories allow us to examine our practice with a lens toward activating parts of the brain that respond to the WHY of learning, the WHAT of learning, and the HOW of learning. UDL is the framework that helps us to consider alternative or assistive technology solutions to support learners with different or unique needs. These students may or may not qualify for special education services.

3. **High Leverage Practices**⁵: Based on the work of John Hattie and Bob Marzano, a comprehensive set of practices (such as productive group work, setting purpose, and others) has been shown to have a measurable effect size when examining student learning outcomes. Better practices have higher effect sizes.



Multi-Tiered Systems of Support (MTSS)⁶: The MTSS Model brings together all of the practices we use and informs us that there is a set of students who will respond well to a Tier 1 or compulsory experience. Those who don't respond well to the first tier experience will benefit from additional or different content or teaching strategies. Those who still don't respond within Tier 1 or 2 benefit from targeted and specific interventions or accelerations (Tier 3). These tiers apply to struggling students as well as those who are identified as highly capable.

We use all of these frameworks in concert to further teaching and learning. These structures are made more effective through the use of Technology. From providing differentiated content or multiple visual representations of a concept, Technology is a critical partner in our work in the Instructional Core.

³<http://www.ascd.org/publications/educational-leadership/sept95/vol53/num01/A-Framework-for-Culturally-Responsive-Teaching.aspx>

⁴<http://www.cast.org/our-work/about-udl.html#.XNM6fpNKjGI>

⁵<https://visible-learning.org/hattie-ranking-influences-effect-sizes-learning-achievement/>

⁶<https://www.pbis.org/school/mtss>

2

Safe Climate and Strong Relationships with Families and Community

Robust Communications with Families and Community

Building a positive and productive learning environment isn't just about what happens inside a classroom, it's about building a community without walls, one that includes and engages families. Research⁷ has shown that students with involved families, regardless of background, are more likely to be successful in academics and develop better social skills.

Our Strategic Plan prioritizes the need for the home/school connection. The plan calls for engaging in two-way communication regarding each student's academic and social emotional progress, and collaboration with families to strengthen student resilience and motivation. Part of this important work includes the need to employ a variety of authentic methods across languages and cultures. Technology is a critical partner in this work, providing us with tools to translate verbally and in written forms as well as providing means to communicate instantly with families using text, app-based communications, and system-wide learning management systems that allow families to track their student's academic and social emotional progress. Our robust website allows us to publish information in a timely and accessible way and the technologies we use to engage in two-way communications with families give them relevant ways to interact with teachers and leaders.

One aspect of creating and sustaining relationships with families is the need to assess the availability and state of technology in our learners' homes. Without addressing the needs of our families who don't have access to broadband internet or access to a device for learning, we risk widening the "homework gap" that prevents some students from reaching their potential. Northshore is committed to finding innovative ways to provide internet access to those families that need it as a remedy for this gap.

In addition to providing infrastructure and tools for learning in and out of school, it is critical for us to have policies in place to promote responsible use and protect student privacy. Our Responsible Use Procedure (RUP) and student rights and responsibilities handbook are written agreements among parents, students, and staff that outlines the terms of responsible use and consequences for misuse. Our RUP provides an opportunity to teach students, while in school, to become responsible digital citizens, which will help them thrive in a connected world.

The use of student data is crucial for personalized learning. We have several responsibilities related to the use of that data. Staff, families, and our business partners have to be thoughtful about how data privacy, confidentiality, and security practices affect students. We have an obligation to tell students and families what kind of student data the school or third parties (e.g., online educational service providers) are collecting and how the data can be used. As we plan, we adhere to policies regarding who has access to student data and that students and families understand their rights and responsibilities concerning data collection. Northshore staff are required to follow procedures that guarantee the safety and security of all student data, whether that data is collected by NSD or by a third party.

⁷Carnegie Report: Joining Together to Create a Bold Vision for Next Generation - Family Engagement Engaging Families to Transform Education (<http://bit.ly/2S7FcHy>)



Building Block 3: Personalized Professional Development

“Rapid advances in technology are putting pressure on educators to refresh or shift their approaches to teaching and learning. When digital tools are introduced without a continual, dialectical relationship between research and pedagogy, or without timely professional development for teachers, technology implementations can result in wasted time, effort and investments—and lost opportunities to learn for students.”

⁸

In an article published by the Bill and Melinda Gates Foundation entitled 3 Key Elements for High-Quality Professional Learning, authors Felicia Smith and Vivian Mihalakis describe the characteristics that make for effective PD for teachers. They assert that:

1. Teachers want - and benefit the most from - job-embedded professional learning that happens within their school day. It's crucial to recognize that teachers need the time and space in their schools to plan, collaborate, learn, and reflect.
2. Teachers reap tremendous benefits from working with teams of colleagues as professional learning communities - especially those who teach the same grade or subject - to plan and share best practices.
3. Professional learning should be anchored in a strong instructional system that includes coherent and relevant materials, tools, and curricula that are aligned to high standards.

The traditional methodology of workshop or time constrained trainings where learners come together for segments of time outside of their work day and/or outside of their school building has long been the model through which leaders distribute learning. Research has shown this practice to be one of the least effective delivery models for professional learning. Engaging all teachers in meaningful professional development on innovative and agile teaching practices is key to successful technology integration. Top-down, one-size-fits-all, sit-and-get training shows little to no impact on student achievement. Instead, personalized, job-embedded professional development can support teachers in their journeys as lifelong learners and practitioners who continue developing their professional skills.

From the 2017 National Educational Technology Plan: “Educators can be co-learners with students and peers. The availability of technology-based learning tools gives educators a chance to be co-learners alongside their students and peers. Although educators should not be expected to know everything there is to know in their disciplines, they should be expected to model how to leverage available tools to engage content with curiosity and a mindset bent on problem solving and how to be co-creators of knowledge. In short, teachers should be the students they hope to inspire in their classrooms.”⁹ It is this mindset that Northshore strives to cultivate in its teaching force. Modeling curiosity and a learning stance is fundamental to the work we do every day with students.

⁸ CoSN Driving Innovation in K12 Hurdles 2019 (<https://cosn.org/driving-k-12-innovation-2019-hurdles>)

⁹ <https://tech.ed.gov/netp/teaching/>

4

Data-Informed, Needs-Based Resource Allocation

Data-Informed Practices

In almost all aspects of our daily lives, data helps us personalize and adapt experiences to our individual needs. In an educational setting, data can help us make decisions about a student's course of study, evaluate the effectiveness of curricula, and identify connections between phenomena such as discipline data and academic achievement. Data analysis can also help us to identify where there may be needs for resources across the system. There are several variables that make educational data challenging to work with that technology can provide solutions for:

- Data are often housed in “silos”, making it difficult to connect data to draw conclusions.
- Complex data analysis is typically a special field and requires a skillset that many teachers and teacher leaders do not have.
- Data analysis can be time consuming, making it difficult to have access to data quickly in order to inform instructional practice or resource allocation.

In order to ensure that data analysis informs the services we provide to students and families, we will implement a system of tools and professional practices that allow us to connect that data across disparate systems and ease the work needed to make sense of that information. That will require that we invest in the preparation and development of teachers and leaders in the skills needed for data analysis and inquiry. It will also demand that we identify and implement technologies that allow us to visualize data and implement those systems with the support of staff that have the necessary skills to support our teachers and leaders in their data inquiry work.

The collection of data is critical in all aspects of the business of education. In addition to the data we use to track student academic and social emotional progress, it is also critical that we leverage technology to maintain the operational aspects of our work. This may include fiscal systems, human resources systems, technology for the routing of busses and other vehicles, and systems for maintaining infrastructure. These operational systems allow us to track how we spend our precious resources and measure the impact of our organizational decisions on student learning. We use these operational systems to ensure transparency and accountability when communicating with our staff and community about the work we are doing.

Program Evaluation

Evaluation of our Capital Technology Levy spending is a fundamental part of our plan to ensure fiscal responsibility and return on investment. We intend to employ a multi-dimensional system to assess the impact that the technologies we deploy have on student success in the classroom. A robust assessment system will need to include a way to see and evaluate the effect that technology investments and implementation have had as a part of instructional programs designed to improve outcomes for students. We'll develop such a capability in partnership with educators in the District.

If we increase teacher and student access to technology all students will have the tools they need for learning, when and where they need them. This will help create an environment for student-centered instructional initiatives that will improve student learning outcomes.

Evaluation will begin with a few specific educational focus areas as determined by measures outlined in the Strategic Plan. We will develop and test methods to understand the benefits brought to the educational experience as a result of effective technology deployment and use. **We understand that the technology itself will not make the classroom experience what it can be.** There will need to be strong support for educators as they learn and adapt to new approaches offered by various technological options. There will need to be forward-thinking instructional programs in place that utilize technology tools in meaningful, creative ways. We will partner with District leaders who guide the curriculum and pedagogy in the classroom in developing effective ways to distinguish how the technology investments have influenced and supported the outcomes.

Evaluating the benefits of specific, deployed technologies will be the starting point and initial focus of our assessment work. Initially the District will want to understand the impacts of technology currently deployed in the classroom. This can take the form of looking at empirical data (such as improvements in student outcomes) as well as feedback from surveys. At this point it seems appropriate to anticipate we would want feedback both from the educators and the students in the classroom. Finding ways to differentiate between the overall effectiveness of the coursework and the specific effects of deployed technology may take some time to develop and improve; however, that is our objective.

A framework, such as the Technology Integration Matrix from the University of South Florida's College of Education¹⁰, would provide a robust and comprehensive set of evaluation criteria specific to the integration of technology in instructional settings. The Technology Integration Matrix (TIM) provides a framework for describing and targeting the use of technology to enhance learning. The TIM incorporates five interdependent characteristics of meaningful learning environments: active, collaborative, constructive, authentic, and goal-directed. These characteristics are associated with five levels of technology integration: entry, adoption, adaptation, infusion, and transformation. Together, the five characteristics of meaningful learning environments and five levels of technology integration create a matrix of 25 cells. Developed by the Florida Center for Instructional Technology (FCIT) in 2005, the TIM is now in its third edition (2019).

¹⁰ <https://fcit.usf.edu/matrix/matrix/>

If teachers engage in high-quality, job-embedded professional development in technology integration and are provided on-going support, then teaching practices will mature and students will have opportunities to use technology to practice creative and innovative learning.

According to the National Educational Technology (NET) plan, “Professional learning and development programs should transition to support and develop educators’ identities as fluent users of technology; creative and collaborative problem solvers; and adaptive, socially aware experts throughout their careers. Programs also should address challenges when it comes to using technology learning: ongoing professional development should be job embedded and available just in time.”¹¹

Once mature, our evaluation system will include a review of the benefits of specific technologies, best practices for professional development and support to enable the most effective use of those technologies in the classroom, and ways to evaluate the potential of future technologies not yet available. We would be remiss if we did not include an “equity lens” in our evaluation work as well.

Our evaluation system should also lead to best practices for professional development and support to enable the most effective use of those technologies in the classroom. We expect to learn about the effectiveness of our professional development work. The technologies deployed will only be as effective as our ability to support the classroom teachers in using them. An element of this aspect of the evaluation system will be focused on our professional development and classroom support efforts.

If we provide a wide array of technologies to address varied learning needs and support teachers in the application of those technologies, then students will have access to tools and resources that support their individual learning needs and achieve better learning outcomes.

Equity is an important element in our District’s Strategic Plan, and the impacts on equity should be part of our technology evaluation system as well. Technology has the ability to improve equitable treatment and outcomes of and for students. We’ll keep the equity lens engaged in our evaluation work as well.

The International Society for Technology in Education’s Essential Conditions states the importance of removing barriers to learning by leveraging technology:¹² “To bridge socioeconomic gaps and truly support digital learning for all students, an initiative must ensure sufficient bandwidth and connection speeds to allow learning and teaching to occur anytime, with limited interruptions resulting from infrastructure problems. But equitable access means more than simply providing devices and connectivity. It also means giving every student the opportunity to learn from teachers who understand how to use technology to both enhance learning and create quality learning experiences for students with special needs.”

One of the opportunities that technology presents is to provide opportunities for the more individualized needs of students. We’ll want to learn if our approaches are improving equity for our students.

¹¹ <https://tech.ed.gov/netp/teaching/>

¹² <https://www.iste.org/standards/essential-conditions>

However, there is also a risk that technology can exacerbate equity issues, particularly when some students don't have access to similar tools and supports as their peers. We would certainly want to be aware of any incidents or issues where technology degrades equal opportunities for each student to succeed.

Our efforts to assess the effectiveness of technology in the classroom will be based on our strategic plan, start in 2019 and expand as we learn from our experiences. Our efforts will form the basis of our continuous improvement efforts.

Conclusion

The Northshore School District Strategic Plan places students at the center of our mission and vision and assumes responsibility for helping them to meet their potential. Technology tools, when used effectively, have the power to engage students, allow for individualized and personalized learning experiences, and foster innovation and creation in each student's learning path. Our Instructional Technology Plan lays the foundation necessary to support individual student learning and to engage teachers in professional growth using tools that enable equitable learning experiences for students. Additionally, it establishes a solid, flexible infrastructure that supports students, teachers, and staff in the work of teaching and learning in Northshore.