



Policy Recommendations to Activate Learning Sciences in Your District

ISTE



Table of Contents

Why Do the Learning Sciences Matter for District Leaders?	2
District Case Studies	5
Frederick County Public Schools: Teachers as Ambassadors for the Learning Sciences	5
Delta County School District: Maintaining Momentum by Empowering District Educators	11
District of Columbia Public Schools: Essential Practices to Guide Educators	15
Washoe County School District: Linking Social and Emotional Learning to Achievement	19
District Policy Recommendations and Examples	25
Conclusion: Action Steps for Activating Learning Sciences in Your District	30
Acknowledgments	35

[Course of Mind](#) is ISTE's learning sciences initiative. [ISTE](#) is creating resources for educators, education leaders, specialists in edtech procurement and educational policymakers who want to make learning more impactful, efficient and inclusive through a deeper understanding of the learning sciences. Through publications, podcasts, model policy and online courses, Course of Mind seeks to empower educators and leaders to understand how to use the learning sciences to build upon existing teaching practices to more fully realize the power of education for learners of any age.



Published June 2019

This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>

Why Do the Learning Sciences Matter for District Leaders?

Learning sciences, a multidisciplinary field of research that brings together findings from fields like cognitive science, social science, developmental psychology and educational psychology, has fundamentally transformed what we know about why and how students grasp new knowledge and skills under specific conditions. For example, researchers have repeatedly found evidence against “learning styles” theories, which posit that individuals learn best when materials are presented in a specific manner of their preference.¹ A more robust body of evidence supports the “dual coding” theory of learning, which suggests that learning is enhanced when students engage with new content through multiple modalities (i.e. both visual and verbal).²

Fortunately, federal policy in recent years has moved in a direction that supports the use of evidence-based practices in schools. The Every Student Succeeds Act (ESSA) [requires or incentivizes](#) the use of federal funds to support “evidence-based” programs and activities,³ providing district leaders with a unique opportunity to examine educational resources and classroom strategies grounded in research.

However, ESSA only goes so far as to outline different evidence “[tiers](#),” defining the types of studies that qualify as strong, moderate or promising evidence.⁴ The law does not specify which fields of research districts should consider when selecting evidence-based programs and activities or building educators’ capacity to implement them with fidelity. Such flexibility lends itself to large variabilities in what constitutes “evidence” in each district and, consequently, which educational resources and classroom strategies educators choose to use.

District leaders have echoed this concern. Kurt Clay, assistant superintendent at Delta County School District, stated that to truly catalyze a cultural shift toward the use of evidence-based practices, policymakers and education leaders must move away from the rhetoric of pushing educators to use “individualized instruction” or “rigorous curricula” without detailed guidance. They must make

¹ Willingham, D. T., Hughes, E. M., & Dobolyi, D. G. (2015). The scientific status of learning styles theories. *Teaching of Psychology*, 42(3), 266-271. <https://doi.org/10.1177/0098628315589505>

² Mayer, R. E. & Anderson, R. B. (1992). The instructive animation: Helping students build connects between words and pictures in multimedia learning. *Journal of Educational Psychology*, 84(4), 444-452. <https://doi.org/10.1037/0022-0663.84.4.444>

³ Results for America. (2016). *The evidence provisions of the Every Student Succeeds Act*. Retrieved from <http://results4america.org/wp-content/uploads/2016/11/ESSA-evidence-provisions-explainer-7.22.16-Update.pdf>

⁴ Office of Elementary and Secondary Education. (2016). *Non-regulatory guidance: Using evidence to strengthen education investments*. Washington, DC: US Department of Education. Retrieved from <https://www2.ed.gov/policy/elsec/leg/essa/guidanceuseinvestment.pdf>

deliberate efforts to build teachers' and administrators' capacities to be more "thoughtful in their craft."⁵

To bridge this gap between federal policy and district-level implementation, various educational organizations, including the Alliance for Excellent Education⁶ and Turnaround for Children,⁷ have called for education leaders to strongly consider the infusion of the learning sciences into policies that govern educator quality and student learning. The following series of case studies showcases how several district leaders from around the country have pioneered this work of putting the learning sciences at the forefront of their initiatives. ISTE finds that the four featured districts share the following policy principles.

LEADING DISTRICTS:

1. Collaborate with a diverse group of district stakeholders to establish a shared, long-term vision around the learning sciences.
2. Engage in a systematic rollout of ongoing professional learning opportunities on the learning sciences.
3. Incentivize educators to understand concepts and findings from the learning sciences and apply them in the classroom.
4. Sustain professional learning opportunities on the learning sciences.



District leaders can use the case studies and specific recommendations associated with the four shared policy principles (pages 25-29) as a model to evaluate whether their respective local education agencies' policies could be better leveraged to support educators' understanding and application of the learning sciences. ISTE further provides a set of concrete action steps (page 30) that district leaders can take to introduce the learning sciences to their local education agencies.

⁵ K. Clay, personal communication, September 27, 2018

⁶ Alliance for Excellent Education. (2019). *Science of adolescent learning*. Retrieved from <https://all4ed.org/science-of-adolescent-learning/>

⁷ Turnaround for Children. (2018). *Key findings and implications of the science of learning and development*. Washington, D.C.: Turnaround for Children. Retrieved from <https://www.turnaroundusa.org/wp-content/uploads/2018/02/Key-Findings-and-Implications-of-the-Science-of-Learning-Development.pdf>

What are the learning sciences?

The learning sciences refer to a body of research focused on how the learning environment, instructional design, classroom practices and various characteristics of the learner — particularly their cognition, motivation and behavior — come together to shape the learning process in different contexts.

How do the learning sciences help educators?

The learning sciences empower educators with an understanding of both why and how students access and process information, engage with content and express what they know in varying contexts (e.g. subjects, environments, cultures). Being knowledgeable of such information can influence educators' choice of instructional strategies, design of learning environments, and practices to nurture positive classroom cultures that improve student learning. Furthermore, the learning sciences can help educators assess potential reasons for student achievement gaps and thereby take effective measures in response.

Knowledge of the learning sciences can encourage teachers to question popular misconceptions that do not have a discernible effect on student learning, such as beliefs that individual differences can be attributed to [learning styles](#)¹ or a [dominant brain hemisphere](#).⁸ Equipped with key findings⁹ from the learning sciences, teachers can implement better strategies such as engaging students with new content through [multiple modalities](#).² They can also assess learners' [prior knowledge and experiences](#)¹⁰ to identify individual differences in learning.

What Do the Learning Sciences Mean for Education Technology?

The learning sciences additionally inform educators and education leaders about how to better leverage technology to provide the best possible learning experience for students. The combination of teacher experience with findings from the learning sciences helps maximize the transformative impact technology can have in the classroom and, consequently, provides a better return on investment.

⁸ Kauffman, S. B. (2013). *The real neuroscience of creativity*. New York, NY: Scientific American. Retrieved from <https://blogs.scientificamerican.com/beautiful-minds/the-real-neuroscience-of-creativity/>

⁹ See "Action Steps for Activating Learning Sciences in Your District" for additional resources to help district leaders familiarize themselves with various concepts.

¹⁰ Lent, R. C. (2012). Background knowledge: The glue that makes learning stick. In *Overcoming textbook fatigue: 21st century tools to revitalize teaching and learning*. Alexandria, VA: ASCD. Retrieved from <http://www.ascd.org/publications/books/113005/chapters/Background-Knowledge@-The-Glue-That-Makes-Learning-Stick.aspx>

Frederick County Public Schools: Teachers as Ambassadors for the Learning Sciences

Frederick County Public Schools (FCPS) is a growing suburban district located just outside of the nation's capital. FCPS leaders are committed to improving the outcomes of all students by building teachers' capacities to implement evidence-based instructional strategies. This sentiment is reflected in Goal 2, Priority 4 of the districtwide strategic plan, which states, because "research repeatedly demonstrates that great [teachers] drive better outcomes for students," district leaders "will support all staff by providing ongoing opportunities to grow as professionals throughout their career."¹¹ Aligned to this goal, the FCPS central office features the Office of Advanced Academics. Margaret (Meg) Lee, a district advocate for classroom practices informed by the learning sciences, leads the Office of Advanced Academics. Lee's team of advanced academic specialists, stationed amongst FCPS elementary and middle schools, have traditionally provided job-embedded, ongoing professional learning opportunities for teachers of high-achieving students.¹²



Lee recognized that by focusing solely on the high achievers, her office could be overlooking historically underserved student groups and unintentionally widening the district's achievement gap. For example, on state assessments, lower percentages of black students, Hispanic students and students qualifying for free or reduced-priced lunch achieved proficiency compared to other subgroups.¹³ Given her previous roles as both a teacher and administrator at the district, Lee understood that FCPS students capable of high-level learning may be inhibited by often invisible factors, including poverty, discrimination or cultural barriers. On the Office of Advanced Academics webpage, FCPS echoes Lee's

¹¹ Alban, T. (2018). *Maryland's reform plan bridge to excellence in public schools: 2018 master plan update*. Frederick, MD: Frederick County Public Schools. Retrieved from <https://campussuite-storage.s3.amazonaws.com/prod/33903/86de7fb0-3a18-11e6-b537-22000bd8490f/1683009/c4db909e-f7bd-11e7-a3ce-0a1f57555670/file/ProgressReport29Vol1.pdf>

¹² Frederick County Public Schools (FCPS). (n.d.a). *Advanced academics*. Retrieved from <https://www.fcps.org/academics/advacademics>

¹³ Maryland State Department of Education (MSDE). (2018a). *Frederick County: MCAP*. Retrieved from <http://reportcard.msde.maryland.gov/>

thoughts regarding environmental factors that impede learning, writing, “‘giftedness’ is not a static trait, labeling a student ‘gifted’ or ‘not gifted’ can be problematic and inaccurate.”¹⁴ Thus, to equitably serve all students and bring out their individual potentials as high-performing learners, it was necessary for both FCPS leaders and teachers to understand how to properly nurture students’ executive functions by using evidence-based classroom strategies grounded in the learning sciences.¹⁴

Lee also had the support of Keith Harris, executive director for the Department of Accelerating Achievement and Equity, which encompasses the Office of Advanced Academics. As a district leader whose role is to oversee efforts to provide special education, English learner, cultural proficiency and psychological services, Harris is dedicated to supporting the academic, social and emotional growth of all FCPS students to ensure they are provided with the knowledge, skills, abilities and experiences necessary to become empowered lifelong learners.¹⁵ Like Lee, Harris believed that to eliminate achievement gaps, classroom instruction must be grounded in the learning sciences.

Leveraging Existing Resources

Lee acknowledged that this endeavor to build FCPS teachers’ and leaders’ proficiency in the learning sciences would not be successful at scale if it became an entirely new districtwide initiative. Such efforts would require significant financial and human capital commitments, and add onto FCPS teachers’ demanding workloads. Therefore, the Office of Advanced Academics was challenged with leveraging existing district structures and driving the largest achievable change with limited resources. To Lee, it became clear that leveraging the advanced academics specialists, who were already influencing professional learning and curricula, was the most logical course of action. Although FCPS does not have enough advanced academics specialists to be stationed in every school, by training them on key findings and principles from the learning sciences, they could, in turn, translate the principles into actionable lesson plans and instructional strategies and ultimately communicate those practices to the broader audience of FCPS principals and teachers.¹⁴ The question now became: Which experts in the learning sciences would make this work possible?

¹⁴ M. Lee, personal communication, August 30, 2018

¹⁵ Frederick County Public Schools. (2016). *Accelerating achievement and equity*. Retrieved from <https://www.fcps.org/centraloffice/accelerating-achievement-and-equity-summary>

Forming Strategic Partnerships

At the 2016 Learning and the Brain Conference in Boston, Massachusetts, Lee met the keynote speaker Glenn Whitman, director of the Center for Transformative Teaching and Learning (CTTL) at St. Andrew's Episcopal School in Potomac, Maryland, and learned about the 2017 Science of Teaching and School Leadership Academy. Hosted by CTTL, this week-long summer program would offer educators an opportunity to develop their knowledge about the learning sciences and translate the research into actionable classroom practices. With grant funding from CTTL's partnership with the Ford Foundation, as well as FCPS' budget for travel logistics, FCPS entered into a three-year agreement with CTTL. Every summer from 2017 to 2019, Lee would send two teams of middle school educators and several advanced academics specialists to the Science of Teaching and School Leadership Academy. The district's senior leadership also saw value in this partnership, and the FCPS deputy superintendent, accompanied by Harris and other executive directors from various departments — school leadership, curriculum and instruction, and assessment and accountability — volunteered to attend the academy as an additional district team.⁴

In February 2019, Lee expanded her district's partnership with CTTL by enrolling a cohort of 28 teachers and six administrators in the [Neuroteach Global](#) program, a series of microcourses about the learning sciences supported by ongoing online coaching sessions. To sustain the engagement of district leadership, Harris also participates in this program. A second cohort of 60 teachers will enroll in summer 2019.¹⁶

Enabling Policies

Several district policies that recognize and reward teachers for participating in professional learning programs served as critical enablers of the FCPS-CTTL partnership. First, district leaders conducted a crosswalk between the district's teacher evaluation system and CTTL's programs and found a natural fit between the two. Grounded in Charlotte Danielson's [Enhancing Professional Practice: A Framework for Teaching](#), the FCPS teacher evaluation system places a strong emphasis on professional learning, encouraging teachers to "select a goal area and to explore in depth new ideas/interests ... to refine teaching skills and to promote professional growth and student achievement."¹⁷ Therefore, teachers participating in Science of Teaching and School Leadership Academy or Neuroteach Global could be assured that their experiences will reinforce annual evaluation scores.

¹⁶ M. Lee, personal communication, January 25, 2019

¹⁷ Frederick County Public Schools (FCPS). (n.d.b). *Teacher evaluation*. Retrieved from <https://campussuite-storage.s3.amazonaws.com/prod/33903/86de7fb0-3a18-11e6-b537-22000bd8490f/631232/4403273e-7493-11e6-904b-22000bd8490f/file>

Second, according to the Maryland State Department of Education, the state suggests that professional learning opportunities be aligned to the Council of Chief State School Officers' (CCSSO) InTASC Model Core Teaching Standards. The learning sciences are a key component of the InTASC Model Core Teaching Standards,¹⁸ calling upon educators to understand “how cognitive, linguistic, social, emotional and physical development occurs, with the recognition that learners are individuals who bring differing personal and family backgrounds, skills, abilities, perspectives, talents and interests.”¹⁹ Therefore, FCPS teachers participating in CTTL’s programs may apply for Maryland’s continuing education units (CEUs), which supports their relicensure.²⁰

Lastly, Lee is currently in the process of working with the district’s professional learning department to develop a series of three microcredentials that FCPS teachers can earn upon completion of professional learning activities and subsequent demonstration of implementing evidence-based practices grounded in the learning sciences in the classroom.¹⁶

Impact of Professional Learning

Lee describes that the Office of Advanced Academics’ stakeholders, including school administrators, teachers and students, have been largely receptive to professional learning on the learning sciences. For example, FCPS staff who attended the 2018 Science of Teaching and School Leadership Academy recently presented a session about cognitive load to several FCPS principals. During that session, principals brainstormed some of the strategies that they employ in their own day-to-day work to reduce their cognitive load. Principals also discussed how students at their respective schools — especially those struggling with multi-step tasks — could benefit from being explicitly taught strategies to reduce working memory demands, such as breaking a larger problem into smaller steps or using a graphic organizer to make connections to prior knowledge. Furthermore, principals developed action plans to include discussions on student cognitive load in their teacher observation and feedback procedures.²⁰

Teachers who received training on the learning sciences from the advanced academics specialists have reported feeling encouraged to know the reasons behind effective practices they used in the past. In the future, they look forward to replicating these effective practices and mitigate strategies not in line with current findings in the learning sciences, such as identifying and catering to students’ “learning styles.” Lee elaborated that, “Our teachers are excited and asking for more information ... to know that what

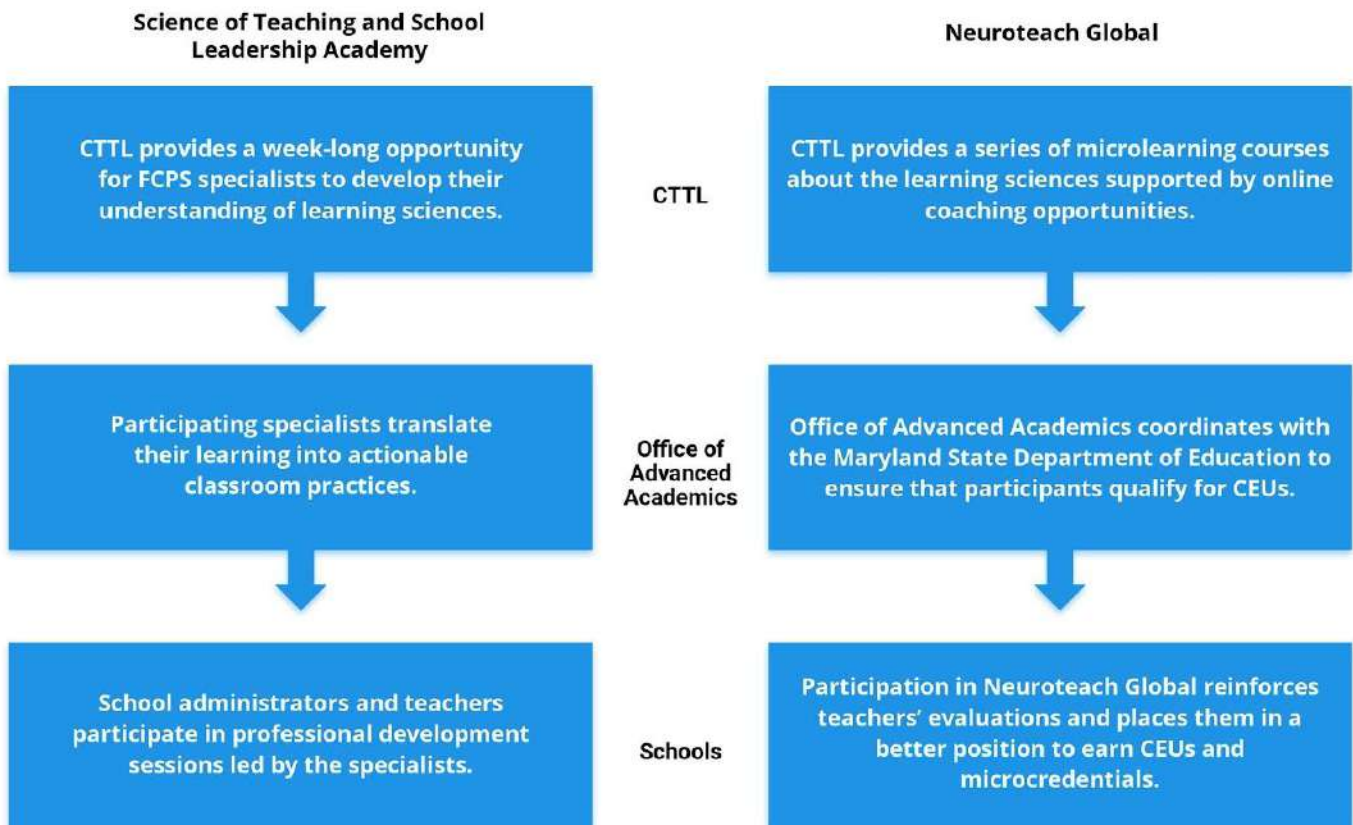
¹⁸ Maryland State Department of Education (MSDE). (2018b). *Continuing professional development manual*. Baltimore, MD: MSDE. Retrieved from <http://marylandpublicschools.org/about/Documents/DEE/ProgramApproval/CPDMANUALRevisedMarch2019.pdf>

¹⁹ Council of Chief State School Officers (CCSSO). (2013). *In TASC model core teaching standards and learning progressions for teachers 1.0*. Washington, D.C.: CCSSO. Retrieved from https://ccsso.org/sites/default/files/2017-12/2013_INTASC_Learning_Progressions_for_Teachers.pdf

²⁰ M. Lee, personal communication, October 18, 2018

they're doing is optimized for learners is exciting to them." Finally, students have been observed to be more engaged in their classrooms through exposure to active learning opportunities. For example, after noting that effective learning occurs in the transition between modalities, teachers have pushed students to represent the materials they have learned in a variety of ways. Lee explained, "[In our district], if [students] read about it, they need to talk about it. If they watch it, they need to write about it. If they talk about it, they need to act it out."²⁰

FCPS-CTTL Partnership Structure



FCPS in 2029

Several challenges still remain in the way of FCPS sustaining professional learning opportunities. Lee described that funding the partnership with CTTL has not been the easiest barrier to overcome. To work around this challenge, Lee worked with CTTL to acquire additional grant funds that would support spring and summer 2019 Neuroteach Global cohorts. Lee is also looking to further incentivize teachers to participate in Neuroteach Global. Currently, Lee is discussing with local institutions of higher education about the possibility of offering graduate credits to teachers who complete the program.²⁰

Although such challenges remain to be solved, Lee believes that professional learning on the learning sciences is a worthwhile experience for FCPS teachers and will have a lasting positive impact on the district's achievement gap. Her vision for FCPS 10 years down the road consists of all students, regardless of background, taking ownership of practices informed by the learning sciences (i.e. students engaging in the practices automatically without explicit teacher input) and teachers keeping up with the latest research in the learning sciences to continuously refine their instruction. Lee stated, "There is not a silver bullet to achievement gap, but [the learning sciences are] a small step that can contribute to closing it."²⁰



Published June 2019

This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>

Delta County School District: Maintaining Momentum by Empowering District Educators

Delta County School District is a local education agency in rural Colorado that consolidates five smaller townships in the Gunnison River Valley²¹ Across different student subgroups, the county has recently shown positive trends in achievement as measured by the Colorado Measures of Academic Success.²² Assistant superintendent Kurt Clay and other district leaders were challenged with maintaining this momentum for all students served by Delta County. He elaborated, “Student success is the why behind all of our [district initiatives]. Student success is the one piece that reaches across all grade levels and content areas.”⁵



District leaders began this work by looking into popular resources offered by various vendors. They soon realized that, because all vendors advertise seemingly impressive results, there needed to be a better way to support school administrators and teachers in deciding which resources are most supported by research on how students learn best and are thus worth implementing. Based on literature suggesting that building teacher quality has the largest effect size on student learning²³, district leaders looked to partner with an organization with expertise in the learning sciences that could provide Delta County educators with flexible professional learning opportunities and help them be more “thoughtful in their craft” as they select among available resources.⁵

Empowering Educators Through Neuroteach Global

Upon discovering the Center for Transformative Teaching and Learning’s (CTTL) goal to assist educators in applying concepts, principles and findings from the learning sciences in the classroom, Clay and a

²¹ Delta County School District (DCSD). (n.d.). *Area profile*. Retrieved from <http://www.deltaschools.com/area-profile.php>

²² Colorado Department of Education (CDE). (2018a). *District dashboard: Delta County 50(j)*. Retrieved from <https://www.cde.state.co.us/code/districtdashboard>

²³ Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1), 1-44. <http://dx.doi.org/10.14507/epaa.v8n1.2000>

team of Delta County teachers attended the 2018 Science of Teaching and School Leadership Academy. Aside from receiving information on evidence-based instructional strategies to implement in Delta County schools, Clay had an opportunity to directly engage with CTTL Director Glenn Whitman to learn about [Neuroteach Global](#), a series of microcourses about the learning sciences supported by ongoing online coaching sessions. Given its flexible, self-paced delivery method, Delta County's district leaders decided to partner with CTTL and make Track One of Neuroteach Global — which covers topics such as teacher and student mindsets, classroom design and classroom culture — available to all of Delta County teachers and leaders. The district's goal for 2019 is that 95 to 100 percent of Delta County's 296 teachers will enroll in Track One of Neuroteach Global.²⁴

To help ease teachers into Neuroteach Global, Delta County began with a districtwide book study on CTTL's publication [Neuroteach](#), which previews some of the concepts and strategies discussed in the Neuroteach Global program. In August 2018, Ian Kelleher, CTTL's Head of Research, visited Delta County's district leaders and school administrators to provide an introductory training session on methods and tools for examining each chapter in-depth. Since the beginning of the 2018-2019 school year, Delta County principals and assistant principals have been heading the book studies at their respective schools. Upon conclusion of the book study in January 2019, Delta County held a follow-up training session with their participating teachers and Glenn Whitman to officially kick off Neuroteach Global.²⁴

Enabling Policies

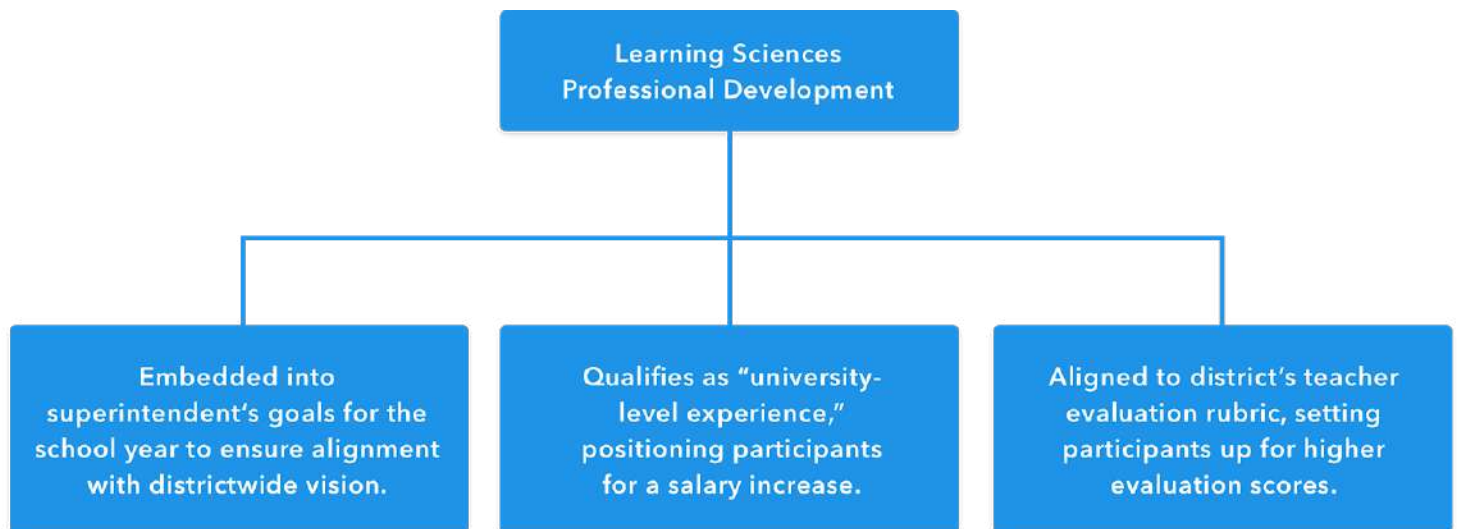
Several district policies created conditions conducive to Delta County's partnership with CTTL. First, Superintendent Caryn Gibson set a districtwide vision for teaching and learning informed by the learning sciences. Specifically, Core Belief 2 of the district's goals for 2018-2019 explains that the district will “[utilize] ... resources in a responsible ... and effective manner” by providing “professional development around educating the whole child through mind brain education.”²⁵ Second, district leaders leveraged the school board's policies regarding teacher salaries to incentivize teachers' participation in Neuroteach Global. In Delta County, 10 university-level credits are required for each teacher to move up the locally dictated pay scale. District leaders chose to qualify Neuroteach Global participation as a university-level experience, putting participants in a better position for a salary increase.⁵

²⁴ K. Clay, personal communication, November 15, 2018

²⁵ Gibson, C. (2018). Delta County School District: *Superintendent goals 2018-2019*. Delta, CO: Delta County School District. Retrieved from <http://www.deltaschools.com/content/misc/superintendent-goals.pdf>

Third, Delta County’s educator evaluation system supports classroom practices with evidence from the learning sciences. Recent changes to the [Colorado law](#) required districts to adopt evaluation systems aligned to the [state’s quality standards](#).²⁶ Therefore, in the 2017-2018 school year, Delta County implemented a [new evaluation rubric](#). This rubric not only requires Delta County teachers to demonstrate “knowledge of ... appropriate evidence-based instructional practices,” but also “knowledge about the ways in which learning takes place, including the levels of intellectual, physical, social and emotional development of their students.” Furthermore, the rubric requires teachers to demonstrate uses of specific classroom strategies supported by the learning sciences, such as providing students with multiple representations of a new concept as well as ample opportunities to make connections with prior knowledge. Through this rubric, Delta County ensures that teachers who receive the Neuroteach Global training are better positioned to receive higher annual evaluation scores.

Delta County School District Policy Structure



Impact of Professional Learning

Because Delta County is in the first year of its engagement with the learning sciences, district leaders have not yet conducted a formal evaluation of the CTTL partnership. However, they are consistently receiving positive reports from school administrators in charge of coordinating the Neuroteach book studies. For example, principals reported that their teachers are having “aha moments” at each session, understanding why student motivations, mindsets and other factors related to their social and

²⁶ Colorado Department of Education (CDE). (2018b). *Supporting great teachers and leaders*. Denver, CO: CDE. Retrieved from <http://www.cde.state.co.us/educatoreffectiveness/sb191factsheet>

emotional learning (SEL) must be cultivated to have the greatest possible impact on their academics. Principals additionally have reported that a culture of appropriate risk-taking is being gradually cultivated as teachers feel more driven to experiment with different strategies by either altering types of homework assignments or redirecting student misbehavior in more positive ways. District leaders hope that participation in Neuroteach Global will reinforce this new learning by encouraging teachers to challenge traditional classroom practices and “use the right strategy at the right time” (e.g. Given the age and proficiency-level of the class, would lecture-based, direct instruction or application-based, small-group activities work better?). Clay also hopes that the district leadership’s participation in Neuroteach Global will drive them to unpack buzzwords such as “rigorous curriculum” and “individualized instruction,” allowing for in-depth evaluations of currently adopted curricula.⁵

Taking Steps Toward a Larger Cultural Shift

Following participation in Neuroteach Global, Delta County seeks to sustain professional learning by forming partnerships with other state-level funding sources. With this support, the district will hire at least one in-house SEL expert who can coordinate and administer job-embedded professional learning opportunities on the topic. By this time, Delta County teachers’ previous participation in Neuroteach Global will have developed their foundational knowledge on the learning sciences, enabling them to naturally see the connections between SEL and other components of “educating the whole child.” Teachers will recognize that students who feel socially and emotionally supported at school are more likely to succeed academically as well.⁵

Finally, to truly catalyze a cultural shift where educators are unafraid to engage with the learning sciences, district leaders would like federal and state policymakers to think about how educator autonomy and accountability policies can coexist. Collecting data on student performance is indeed crucial to ensuring equitable outcomes. However, because teachers must currently meet requirements set by mandated assessments, accountability policies can serve as barriers to teachers experimenting with different strategies, often driving them to resort to familiar traditional practices that they believe will meet state standards. Policymakers should not overlook the consequences of well-intended policies on day-to-day teacher behavior.⁵



Published June 2019

This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>

District of Columbia Public Schools: Essential Practices to Guide Educators

District of Columbia Public Schools (DCPS) is a local education agency that oversees 115 non-charter public schools in the nation's capital.²⁷ As evidenced by assessment data, a large achievement gap currently exists between the eight DCPS wards. According to the Office of the State Superintendent of Education (OSSE), wards 7 and 8 — the lowest income-neighborhoods²⁸ — have the lowest number of students demonstrating proficiency in mathematics and English language arts.²⁹ Therefore, ensuring a high-quality learning experience for all students is a major priority for the district. This goal is reflected in DCPS' 2017-2022 strategic plan, which states that the district will “[d]efine, understand and promote equity so that we eliminate opportunity gaps and systematically interrupt institutional bias.”³⁰ One major source of the district's inequity was that teachers often were not adequately coached on how best to serve students using evidence-based practices. In 2009, although 95% of teachers received a high evaluation score, teachers felt that they were left largely “unclear exactly what was expected of [them].”³¹ To address this mismatch, district leaders needed to rethink their vision for what an effective classroom looks like and build teachers' capacities to execute that vision.



Image Attribution: Central America Lesson at Roosevelt Senior High School
<https://flic.kr/p/CcWuKw> by teachingforchange is licensed under CC BY-NC 2.0
<http://creativecommons.org/licenses/by-nc/2.0>

²⁷ District of Columbia Public Schools (DCPS). (n.d.a). *Our schools*. Retrieved from <https://dcps.dc.gov/page/our-schools>

²⁸ DC Economic Strategy. (2019). *Household income by race and ward*. Retrieved from <http://dceconomicstrategy.com/household-income/>

²⁹ Office of the State Superintendent of Education (OSSE). *DC's 2018 PARCC results*. Washington, D.C.: OSSE. Retrieved from https://osse.dc.gov/sites/default/files/dc/sites/osse/page_content/attachments/2018%20PARCC%20Results%20Release%2028Aug.%2016%2C%202018%29.pdf

³⁰ District of Columbia Public Schools (DCPS). (2017). *A capital commitment: 2017-2022 strategic plan*. Washington, D.C.: DCPS. Retrieved from https://dcps.dc.gov/sites/default/files/dc/sites/dcps/publication/attachments/DCPS%20Strategic%20Plan%20-%20A%20Capital%20Commitment%202017-2022-English_0.pdf

³¹ District of Columbia Public Schools (DCPS). (2016a). *We the people: How the DC Public Schools to get, grow, and keep great teachers and principals*. Washington, D.C.: DCPS. Retrieved from https://dcps.dc.gov/sites/default/files/dc/sites/dcps/page_content/attachments/DCPSWeThePeople.pdf

A New Human Capital Development Initiative

Jason Kamras, the 2005 National Teacher of the Year and DCPS' chief of human capital, began this vision-setting process by consulting various experts in evidence-based instruction, including key developers of the Next Generation Science Standards as well as researchers like Carol Dweck, Robert Marzano and John Hattie. DCPS leaders also partnered with research organizations like Mathematica that identified a number of DCPS teachers who were "beating the odds" by consistently showing high student achievement despite demographic disadvantages. Mathematica also interviewed these high-performing teachers and recorded their classroom proceedings to derive common practices shared among them.³²

Findings from this process were initially consolidated into nine different facets of effective instruction. DCPS instructional superintendents subsequently helped condense this list down to five categories, forming the basis for what would become the [DCPS Essential Practices](#). The Essential Practices are a core set of evidence-based practices that all DCPS teachers are expected to demonstrate in their classrooms. Principles grounded in the learning sciences are thoroughly incorporated into the Essential Practices. For example, Essential Practice 3B, titled "Skillful Facilitation," leverages the dual coding theory of learning, calling teachers to "[present] content in multiple ways (e.g., explanations, visual representations, concrete examples)." Essential Practice 4B, titled "Supports and Extensions," calls on teachers to recognize limited working memory capacities of young students and "[deconstruct] concepts into smaller components."³³

Policies to Implement the Essential Practices

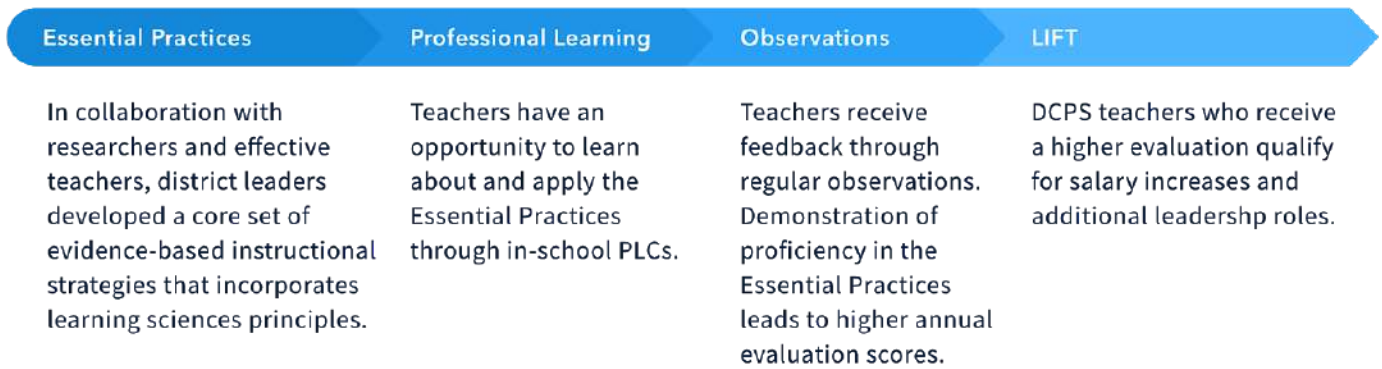
DCPS leverages several of its district policies to ensure that the Essential Practices are implemented within classrooms. For example, the district's current teacher observation system requires school administrators to conduct at least three formal observations throughout the school year where they have an opportunity to look for alignment between the teacher's instruction and the Essential Practices. Feedback based on these observations provided to the teacher within a two-week time frame to highlight areas of excellence and growth.³⁴ DCPS teachers are additionally incentivized to improve their classroom instruction in alignment with the Essential Practices, as the observations account for a certain

³² D. Pinder, personal communication, December 1, 2018

³³ District of Columbia Public Schools (DCPS). (n.d.b). *The DCPS essential practices: Grades 1-12*. Washington, D.C.: DCPS. Retrieved from https://dcps.dc.gov/sites/default/files/dc/sites/dcps/page_content/attachments/The%20DCPS%20Essential%20Practices.pdf

³⁴ District of Columbia Public Schools (DCPS). (2018a). *IMPACT annual reference guide: Cycle, dates, and supports*. Washington, D.C.: DCPS. Retrieved from <https://dcps.dc.gov/sites/default/files/dc/sites/dcps/publication/attachments/IMPACT%20Annual%20Reference%20Guide%202018-19.pdf>

percentage of their annual evaluation scores.³⁵ Greater evaluation scores help lead to advancement on the DCPS career ladder, qualifying teachers for higher salaries or school leadership positions.³⁶



Supporting Studies

Several studies have suggested that this observation and feedback system grounded in the Essential Practices have been effective in improving student outcomes and teacher performance. Researchers from the University of Virginia have found that the DCPS system generates “meaningful gains in student outcomes, particularly in the most disadvantaged students.”³⁷ DCPS’ growth on the National Assessment of Educational Progress (NAEP) corroborates this finding. On the 2017 NAEP, DCPS students showed most growth in fourth grade mathematics since 2009 compared to students from similar urban school districts. Growth in eighth grade mathematics since 2009 ranked second only to Chicago Public Schools.³⁸

Remaining Challenges and the Critical Role of Leadership

David Pinder, a DCPS instructional superintendent, emphasized that simply establishing the Essential Practices and adopting policies surrounding their implementation is not enough to help the district’s educators use evidence-based practices and close the achievement gap. “We’ve given them the ingredients. The next step is to teach them how to cook,” he said with regard to the initiatives the district is undertaking to ensure that teachers adequately build their familiarity with the Essential Practices. LEAP — Learning Together to Advance Our Practice — is a professional learning community active in each school and led by in-house LEAP leaders who can be administrators, instructional coaches or other

³⁵ District of Columbia Public Schools (DCPS). (2018b). *2018-2019 IMPACT guidebooks*. Retrieved from <https://dcps.dc.gov/publication/2018-2019-impact-guidebooks>

³⁶ District of Columbia Public Schools (DCPS). (2016b). *LIFT: Leadership initiative for teachers*. Washington, D.C.: DCPS. Retrieved from <https://dcps.dc.gov/sites/default/files/dc/sites/dcps/publication/attachments/2018-19%20LIFT%20Guidebook.pdf>

³⁷ Adnot, M., Dee, T., Katz, V., & Wyckoff, J. (2017). Teacher turnover, teacher quality, and student achievement in DCPS. *Educational Evaluation and Policy Analysis*, 39(1): 54-76. <https://doi.org/10.3102/0162373716663646>

³⁸ District of Columbia Public Schools (DCPS). (2018c). *2017 NAEP results*. Washington, D.C.: DCPS. Retrieved from https://dcps.dc.gov/sites/default/files/dc/sites/dcps/release_content/attachments/2017%20DCPS%20NAEP%20Deck.pdf

teacher leaders in the school.³⁹ LEAP modules are explicitly tied to an element of the Essential Practices.³⁵ DCPS also provides teachers with a library of video resources they can access to view what classroom practices aligned to the Essential Practices look and sound like.³²

Instructional superintendent Pinder also recognizes the critical role that leadership plays in this process. He believes that specific training needs to be available for instructional coaches and school administrators to ensure that the post-observation feedback provided to teachers is consistent, action-oriented and pushes them toward a more thoughtful execution of the Essential Practices. For example, during one of his routine school walkthroughs, Pinder noticed that in alignment with Essential Practice 4, which states that teachers should “maximize student ownership of student learning,” teachers displayed high-quality student work around the classroom to help others evaluate their progress against these exemplars.³⁵ He would like to see teachers coached to push beyond this first step and explicitly help students understand the process and value of metacognition and self-reflection.³²

A Changing Landscape

At the end of 2018, Mayor Muriel Bowser appointed Lewis Ferebee as the new DCPS chancellor.⁴⁰ Instructional superintendent Pinder hopes that, to accelerate the positive trends in student achievement the district has observed in recent years, one of the new chancellor’s priorities would be to ensure that student learning experiences are shaped by evidence-based practices. He hopes that under the new leadership, DCPS will continue to provide opportunities to train teachers, instructional coaches and administrators on the Essential Practices, saying, “It’s one thing to have a gold standard in place like the Essential Practices. It’s another to help teachers and administrators unpack exactly what that looks like in the classroom. If the leadership doesn’t recognize the value of evidence-based practices, how do you expect teachers to?”³¹



Published June 2019

This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>

³⁹ District of Columbia Public Schools (DCPS). (2016c). *2016-2017 LEAP handbook*. Washington, D.C.: DCPS. Retrieved from https://dcps.dc.gov/sites/default/files/dc/sites/dcps/page_content/attachments/LEAP%20Handbook%202016-2017.pdf

⁴⁰ District of Columbia Public Schools (DCPS). (2018d). *Mayor Bowser announces Dr. Lewis D. Ferebee as DCPS chancellor*. Retrieved from <https://dcps.dc.gov/release/mayor-bowser-announces-dr-lewis-d-ferebee-dcps-chancellor>

Washoe County School District: Linking Social and Emotional Learning to Achievement

The learning sciences are not just limited to the cognitive aspects of learning. One strand of research that has recently gained traction is “social and emotional learning.” Researchers define social and emotional learning (SEL) as the “process of acquiring core competencies to recognize and manage emotions, set and achieve positive goals, appreciate the perspectives of others, establish and maintain positive relationships, make responsible decisions and handle interpersonal situations constructively.” In other ⁴¹ words, SEL involves students attaining certain skills, attitudes and behaviors that enable them to understand and express their thoughts and emotions in a healthy manner and constructively interact with peers and adults. For example, people demonstrate SEL in their day-to-day lives by thinking from another person’s perspective before making a decision, staying on task when faced with distractions and controlling emotional expressions to build and maintain healthy relationships.

Many studies have demonstrated a strong link between SEL and student achievement. For example, a 2011 meta-analysis of 213 school-based SEL programs found that “compared to controls, SEL participants demonstrated significantly improved ... academic performance that reflected an 11-percentile-point gain in achievement.”⁴¹ Furthermore, surveys of business executives have shown that effective communication and collaboration are desirable lifelong competencies.⁴² Due to this connection between SEL, academic performance and well-being, school districts around the country have begun recognizing the benefits of investing in SEL programs. A recent national survey conducted by the American Association of School Administrators, the National Association of Federal Program Administrators and Whiteboard Advisors found that more than half of school districts intend to leverage new federal funding opportunities under the Every Student Succeeds Act to support SEL programs.⁴³

Washoe County, a large local education agency in Northern Nevada, is an example of a district that has recently committed to SEL. From 2006 to 2010, the district had observed poor high school graduation

⁴¹ Durlak, J. A., Dymnicki, A. B., Taylor, R. D., Weissberg, R. P., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405-432.

<https://doi.org/10.1111/j.1467-8624.2010.01564.x>

⁴² Committee for Children. (2016). *The importance of employability skills: How and why educators should teach these skills*. Chicago, IL: CASEL.

Retrieved from <https://www.cfchildren.org/wp-content/uploads/policy-advocacy/sel-employability-summary.pdf>

⁴³ Ng, N. E. & DeSchryver, D. (2018). *Bringing ESSA Title IVA to life: How school districts are investing Student Support & Academic Enrichment funding*. Alexandria, VA: AASA. Retrieved from

http://aasa.org/uploadedFiles/Policy_and_Advocacy/files/AASA%20NAFEPA%20WBA%20ESSA%20Title%20IV%20Survey%20FINAL%20061818.pdf

rates. Trish Shaffer, Washoe County's SEL coordinator, explained that "basically one out of two students [would] walk across the [graduation] stage. That was a real wake up call for us as educators."⁴⁴ To improve the number of students completing their K-12 education, district leaders looked to ensure that students are provided a safe and supportive school environment and taught skills to develop healthy attitudes toward learning. On a webpage dedicated to their districtwide SEL program, Washoe County's leaders outline their beliefs regarding the benefits of SEL, stating that it "promotes students' self-awareness, self-management, social awareness, relationship and responsible decision-making skills ... [which] improves student attitudes and beliefs about self, others and school."⁴⁵

District leaders also recognized that for any SEL program to be successful, the district must view it as a long-term initiative that cannot be achieved through a one-off teacher training event. They could not expect teachers to automatically translate the research literature into classroom practices without continuous support from the district. Therefore, since 2012, the district has engaged in efforts to introduce SEL comprehensively and sustainably into classrooms.

First Steps to Ensure Safe and Supportive School Environments

During the 2012-2013 school year, district leaders began by establishing a vision for what exactly a safe and supportive school environment looks like. With grant funding from the NoVo Foundation, Washoe County partnered with consultants from the Collaborative for Academic, Social and Emotional Learning (CASEL), a national organization that provides research, tools and resources that facilitate district implementation of SEL programs. With CASEL's support, Washoe County officially adopted its [SEL standards](#) that delineate five core competencies described as "fundamental skills for life effectiveness," including self-awareness, self-management, social awareness, relationship skills and responsible decision-making. In addition to defining what each of these five competencies entail, the standards explain the typical behaviors of students that demonstrate mastery in each competency.⁴⁶

Also during the 2012-2013 school year, the district brought on board an SEL specialist who coached a pilot group of Washoe County educators on strategies to incorporate SEL into classroom instruction and culture. The specialist led a workshop where the pilot group could learn how SEL complements the newly-adopted Common Core State Standards in English language arts and mathematics. The specialist

⁴⁴ Education Week. [Education Week]. (2018). Social and emotional learning: Goal-setting and relationships are part of district's academic core. [Video file]. Retrieved from <https://www.youtube.com/watch?v=Cq5mex-l7JY>

⁴⁵ Washoe County School District MTSS-SEL Department. (n.d.). SEL fast facts. Retrieved from <https://www.washoeschools.net/Page/1840>

⁴⁶ Washoe County School District MTSS-SEL Department. (2017). Social and emotional learning standards. Reno, NV: WCSD. Retrieved from <https://www.washoeschools.net/cms/lib/NV01912265/Centricity/Domain/202/Social%20Emotional%20Learning/SEL%20Standards%20English%20and%20Spanish/SELStandards%202017.pdf>

also led SEL-focused professional learning community (PLC) discussions in several schools, and provided individual guidance for teachers who had selected SEL as their professional growth focus area.⁴⁷

In the following year, working closely with CASEL, Washoe County's leaders sought to scale their districtwide SEL program through a three-step process. First, they hired one additional SEL specialist to expand the program's reach. The SEL specialist worked to build the capacities of 23 teachers who would in turn facilitate PLC conversations at various sites across the district. Second, through a standardized RFP process, the district's board of education assigned a committee of teachers and administrators to recommend specific SEL curricula. Upon reviewing several requests for proposals, the committee approved the adoption of [MindUp](#) for students in grades K-8. MindUp provides teachers with a digestible explanation of the science behind common student behaviors as well as concrete steps to address them. For example, in the lesson plan for grades 3-5, the curriculum provides an overview of how feelings of anxiety and anticipation of failure can trigger a threat response in the brain, leading students to avoid challenging mathematical tasks. MindUp subsequently suggests specific activities to help students identify their emotions and appropriately address them.⁴⁸ Finally, several principals volunteered to join the first SEL cohort that committed to an SEL implementation process. This commitment included designating an official school-level SEL leadership team — comprised of the principal, teachers and other support staff — participating in a districtwide leadership summit and providing three to four SEL professional learning sessions at their respective schools.⁴⁹

Leveraging School Climate Data

With funds awarded from the U.S. Department of Education's Institute for Education Sciences, Washoe County, in partnership with CASEL and the University of Chicago, developed a [climate survey tool](#) grounded in the district's SEL standards that measures students' "social and emotional skills, habits and mindsets such as self awareness and responsible decision-making."⁴⁹ The survey is taken by all students in fifth through ninth and 11th grades, and the data is disaggregated according to demographic factors such as gender, individualized education plan (IEP), free and reduced-price lunch (FRPL), English learner (EL) and gifted and talented education (GATE) statuses.⁵⁰

⁴⁷ Collaborative for Academic, Social and Emotional Learning (CASEL). (2015). *Washoe County School District*. Chicago, IL: CASEL. Retrieved from http://dev-financial-sustainability.pantheonsite.io/wp-content/uploads/2015/06/Washoe_CaseStudy.pdf

⁴⁸ Hawn Foundation. (n.d.). MindUP training workbook 2: Grade levels 3-5. Santa Monica, CA: Hawn Foundation. Retrieved from https://www.washoeschools.net/cms/lib/NV01912265/Centricity/Domain/202/Social%20Emotional%20Learning/MindUP/Subject%20Alignment/Subject%20Alignment%20Guide_3-5.pdf

⁴⁹ Darling-Hammond, L. & Cook-Harvey, C. M. (2018). *Educating the whole child: Improving school climate to support student success*. Washington, D.C. Learning Policy Institute. Retrieved from https://learningpolicyinstitute.org/sites/default/files/product-files/Educating_Whole_Child_REPORT.pdf

⁵⁰ Washoe County School District Office of Accountability. (2018). *Social and emotional competencies by grade*. Retrieved from <http://www.wcsddata.net/data-topics/sel/secdetail/>

Data Collection

All students in grades 5-9 and 11 take an annual school climate survey, where, for a given SEL competency, they rank the difficulty of mastering it.



Interpreting the Data

The district holds an annual Student Data Summit, a daylong symposium where students have an opportunity to reflect on the gaps in the data and share their social and emotional needs with educators. Students assist district leaders in developing action steps around those gaps and needs.

Implementing Action Steps

School-level SEL leadership teams provide professional development for teachers on research-based methods to address the gaps and needs identified at the summit.

In the first few years of participating in the survey, many Washoe County teachers and students were left unsure of the survey's direct impact. Laura Davidson, director of research and evaluation, added, “[the district] started doing focus groups with students about the school climate survey and these SEL measures we were developing and a lot of them were saying, ‘It’s the fourth year I’ve taken the survey, I’ve never seen the results, why should I put any more time or effort into it if I don’t see anything change at my school?’”⁴⁹ In response to this feedback, the district trained the school-based SEL leadership teams on how to properly debrief the climate survey results with staff, such as how to present and interpret school-specific data and suggest action steps that teachers can take to address gaps. Furthermore, Washoe County is hosting [annual data summits](#) where students have an opportunity to verbally express their social and emotional needs.⁴⁹

Supporting Systemic Integration of SEL

Three additional district practices serve to facilitate Washoe County's coordinated approach to SEL. First, district leaders ensured that all stakeholders have a shared vision around SEL by explicitly incorporating the topic into the district strategic plan. Objective 5.1 of Envision WCSD 2020 states that the district will “provide and continuously improve a climate of belonging and self-worth amongst students, families, staff and the community that is centered around an inclusive, collaborative and engaging learning

environment by providing equitable practices, strategies and materials.”⁵¹ Second, the [teacher evaluation rubric](#) used by Washoe County administrators, based on Framework for Teaching by Charlotte Danielson, outlines expectations for teachers to use SEL strategies in the classroom, writing that teachers should “[facilitate] a climate in which all students demonstrate genuine caring for one another, support each other’s learning, and monitor one another’s treatment of peers, correcting classmates respectfully when needed.”⁵² Therefore, teachers who integrate SEL into daily activities are better-positioned for a higher annual evaluation score. Lastly, Washoe County incentivizes educator participation in the districtwide SEL program by allocating a bulk of its grant funds toward stipends and substitutes for teachers who serve on school-level SEL leadership teams.⁴⁷



Impact of SEL on the District, Educators and Students

Recent data and educator feedback point to successes in Washoe County’s districtwide SEL program. Since 2012 — the first year of the districtwide SEL program — the number of schools that have adopted a SEL curriculum such as MindUp has doubled from 43 percent to 80 percent, suggesting increased buy-in among administrators and staff. In Washoe County, students who report higher SEL ratings on

⁵¹ Washoe County School District (WCSD). (2015). *Envision WCSD 2020: Investing in our future*. Reno, NV: WCSD. Retrieved from https://www.washoeschools.net/cms/lib/NV01912265/Centricity/Domain/633/2015%20Strategic%20Plan%20Update_2_27_18_FINAL%20Eng%20Web.pdf

⁵² Washoe County School District (WCSD). (2016a). *Washoe County School District: Professional growth system*. Washington, D.C.: National Council on Teacher Quality. Retrieved from https://www.nctq.org/dmsView/Teacher_Evaluation_Rubric

the annual climate survey generally have higher achievement scores and lower rates of disciplinary issues. As such, they are less likely to be at risk for dropping out. At the same time that the district has focused on this link between academics and SEL, the graduation rate at Washoe County has risen by 20 percentage points.⁵³ Ruby Burnley, a third grade teacher at Washoe County, elaborated on what SEL means for her students, saying, “Happy students are better thinkers ...They’re not stressed. They’re not worried. Their confidence level is higher. They just seem to persevere more and have that confidence to extend themselves.”⁵⁴

Future Steps

Work remains to be accomplished at Washoe County. According to the Nevada Department of Education, over 2,000 cases of student violence against other students and over 1,000 cases of bullying were reported in the district during the 2017-2018 school year.⁵⁵ Furthermore, across many SEL competencies, students identified as gifted and talented often rate themselves higher than FRPL, IEP or EL students.⁴³ However, Washoe County remains confident that doubling-down on the districtwide SEL program will narrow this gap in the future. District leaders state that one of the most critical parts of this effort would not only be to collect data regarding school discipline and SEL competencies, but to also continuously provide educators with support to interpret this data and implement specific practices and strategies. In a recent interview, Laura Davidson explained, “Data are useless unless people can use them to promote student success for college and career. Behind every data point is a person ... If we are using data and there is a story to tell, then SEL competence has to be part of that story.”⁵⁶



Published June 2019

This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>

⁵³ Shaffer, T. (2018). *What is SEL?* Reno, NV: WCSD. Retrieved from https://www.washoeschools.net/cms/lib/NV01912265/Centricity/Domain/202/Social%20Emotional%20Learning/SEL%20Snapshot/REFINEMENT_WASHOE_SEL_ONEPAGER_F.pdf

⁵⁴ Washoe County School District (WCSD). [WCSD MTSSSEL]. (2016b). *Social and emotional learning Washoe Cty* [Video file]. Retrieved from <https://www.youtube.com/watch?v=tfHodYIRF1s>

⁵⁵ Nevada Department of Education (NDE). *Nevada accountability portal: 2017-2017 WCSD at a glance*. Retrieved from <http://nevadareportcard.com/DI/nv/wcsd>

⁵⁶ Collaborative for Academic, Social, and Emotional Learning (CASEL). (2018). *Washoe County Schools embeds SEL assessment in their climate surveys*. Retrieved from <http://measuringcel.casel.org/sel-assessment-in-action-washoe-county-schools/>

District Policy Recommendations and Examples

From multiple conversations with leaders from the four school districts, ISTE has identified four shared policy principles that facilitate implementation of educational resources and classroom practices grounded in the learning sciences. Below, we provide policy recommendations associated with each principle, as well as examples of these recommendations in action.

Learning Science District Policy Road Map



1. Districts can collaborate with a diverse group of stakeholders to establish a shared long-term vision around the learning sciences.

District leaders at Frederick County Public Schools realized that building educators' proficiency in new evidence-based classroom strategies would require a long-term commitment. Meg Lee, supervisor for the district's Office of Advanced Academics, elaborated in a [recent interview](#), "I liken it to how do you move a ship. You don't take the big wheel and spin it to turn in a different direction. You make a series of very small moves all in the same direction." District leaders can define their own "direction"⁵⁷ in an official capacity by revising current strategic plans to incorporate commitments to promote classroom strategies grounded in the learning sciences. Throughout this revision process, district leaders can collaborate with teachers, parents, students and other members of the school community to discuss

⁵⁷ Krueger, N. (2019). Learning science has a lot to say about how the brain works: *Are schools getting the message? Empowered Learner*, 2(3), 29-33.

their daily challenges and brainstorm how instruction guided by the learning sciences can help tackle those issues. The revised strategic plan can then guide new initiatives, including a districtwide professional learning program on the learning sciences.

EXAMPLE 1

Frederick County Public Schools' [strategic plan](#) outlines the district's vision to develop effective educators. Goal 2, Priority 4 of the plan states that because "research repeatedly demonstrates that great [teachers] drive better outcomes for students," district leaders "will support all staff by providing ongoing opportunities to grow as professionals throughout their career."¹¹

EXAMPLE 2

Superintendent Caryn Gibson of Delta County School District specifically set a districtwide vision for teaching and learning informed by the learning sciences. Core Belief 2 of the [district's goals](#) explains that Delta County will "[utilize] ... resources in [an] ... effective manner" by providing "professional development around educating the whole child through mind brain education."²⁵

2. Districts can engage in a systematic rollout of ongoing professional learning opportunities on the learning sciences.

To ensure educators are comfortable with implementing new classroom strategies, district leaders can form strategic partnerships with organizations with learning sciences expertise and experience that provide professional learning opportunities beyond a one-off workshop. District leaders can also expand the reach and depth of the professional learning by using a cohort-based, "train-the-trainer" model, where a select group of influential educators and school administrators are initially trained to be proficient with concepts in the learning sciences. This group can in turn facilitate coaching sessions and PLC conversations at their respective schools. District leaders can include these trained educators in the procurement process to advise whether certain instructional materials are supported by the learning sciences.



EXAMPLE 1

Frederick County Public Schools' advanced academics specialists, stationed among FCPS elementary and middle schools, have traditionally provided job-embedded ongoing professional learning opportunities for teachers of high-achieving students. In partnership with the [Center for Transformative Teaching and Learning](#) (CTTL), district leaders expanded the role of the specialists by training them on the learning sciences. The specialists, in turn, translated these concepts into actionable lesson plans and classroom strategies, and communicated those practices to the broader audience of principals and teachers.

EXAMPLE 2

Washoe County School District leveraged grant funding to hire SEL specialists. The SEL specialists built the knowledge base of 23 teacher leaders who in turn facilitated PLC conversations at various sites across the district. Furthermore, the district's board of education assigned a committee of teachers and administrators to recommend specific SEL curricula.

3. Districts can incentivize educators to understand the concepts and findings from the learning sciences and apply them in the classroom.

Leading districts have created frameworks that outline evidence-based classroom strategies expected from their educators. District leaders can also develop a series of tools to ensure classroom-level implementation of those strategies. For example, districts can introduce an incentivized professional learning pathway that recognizes educators for aligning their practices to the framework. Districts with a locally dictated pay scale can permit their educators to use professional learning about the learning sciences toward credits necessary for a salary lane change. Districts can work with the state education agency to qualify professional learning activities focused on the learning²⁰ sciences for continuing education units or state-recognized microcredentials. Districts can alternatively incentivize educators by using their demonstration of evidence-based strategies to inform evaluations.

EXAMPLE 1

Colorado's [Teacher Quality Standards](#) outline the state's vision for what effective teaching looks like and calls for educators to "demonstrate knowledge of ... appropriate evidence-based instructional practices." In alignment to the state framework, Delta County School District leverages its school board's policies regarding teacher salaries to incentivize participation in professional learning activities focused on the learning sciences. Specifically, they have partnered with CTTL to provide their educators with access to Neuroteach Global, a series of microcourses about the learning sciences supported by ongoing online coaching sessions. In Delta County, 10 university-level credits are required for each teacher to move up the locally dictated pay scale. District leaders chose to qualify [Neuroteach Global](#) participation as a university-level experience, putting participants in a better position for a salary increase.

EXAMPLE 2

District of Columbia Public Schools' [Essential Practices](#) is a framework of evidence-based strategies that all DCPS teachers are expected to demonstrate. School administrators conduct at least three observations throughout the school year to look for alignment between a teacher's instruction and the Essential Practices. Timely feedback is provided to the teacher to highlight areas of excellence and growth. DCPS teachers are additionally incentivized to improve their classroom instruction in alignment to the Essential Practices because the observations account for a certain percentage of their annual evaluation scores. Greater scores help lead to a higher position on the DCPS career ladder, qualifying teachers for higher salaries or school leadership positions.

4. Districts can sustain professional learning opportunities on the learning sciences.

Districts can ensure a long-term commitment to the learning sciences in two major ways. District leaders can acquire federal and state grants — such as funds authorized under [Title II-A](#) of the ESSA that can be used to develop high-quality educators — to acquire the budget necessary to continue providing professional learning on the learning sciences. Districts can also form partnerships with private foundations sharing their vision of promoting classroom strategies grounded in the learning sciences and acquire additional funding support. Lastly, districts can engage in regular collection and evaluation of data to ensure that the integration of learning sciences is achieving its intended impact on student learning and educator quality.

EXAMPLE 1

With funds awarded from the U.S. Department of Education's Institute for Education Sciences, Washoe County School District, in partnership with CASEL and the University of Chicago, developed a climate survey tool grounded in the district's SEL standards that measures students' "social and emotional skills, habits and mindsets such as self-awareness and responsible decision-making." The district trained school-based SEL leadership teams — composed of school administrators and teacher leaders — on how to properly debrief the climate survey results with staff, such as how to present and interpret school-specific data and suggest actions steps that teachers can take to address gaps. Washoe County is also hosting annual data summits where students have an opportunity to verbally express their social and emotional needs.

EXAMPLE 2

To work around the challenge of funding professional learning on the learning sciences, Frederick County Public Schools acquired grants that would support their participation in CTTL's [Science of Teaching and School Leadership Academy](#). District leaders are also constantly looking for new opportunities incentivize teachers to participate in Neuroteach Global. Currently, Lee is working with the district's professional learning department to develop a series of three microcredentials that teachers can earn upon completion of a 14-month program comprised of various learning sciences-informed professional learning activities.

Conclusion: Action Steps for Activating Learning Sciences in Your District

ESSA [requires or incentivizes](#) the use of federal funds to support “evidence-based” programs and activities. Thus, federal law provides district leaders with a unique opportunity to catalyze critical conversations about the role of learning sciences in improving educator quality and student learning experiences. In this final section, ISTE recommends specific action steps for district leaders to help place the learning sciences at the forefront of decisions regarding professional learning, procurement and other relevant operations of the local education agency (LEA).

1. Build Knowledge:

Review a variety of resources to build your own knowledge about the learning sciences. Below, ISTE provides a starter kit of helpful fact sheets, websites, books and research literature, curated with the help of leaders featured in the four case studies.

I would like to learn more about the basics of learning science.		
TITLE OF RESOURCE	PUBLISHING ORGANIZATION	RESOURCE TYPE
The Science of Learning	Deans for Impact	Fact sheet
Science of Learning and Development	Turnaround for Children	Report
Science of Adolescent Learning	Alliance for Excellent Education	Website
Neuroteach	CTTL	Book
How People Learn II	NASEM	Book
Learn Better	The Learning Agency	Book

I would like to learn about classroom practices supported by learning science.		
TITLE OF RESOURCE	PUBLISHING ORGANIZATION	RESOURCE TYPE
Course of Mind	ISTE	Website
Effective Learning Techniques	Assoc. For Psychological Science	Literature Review
How to Use Retrieval Practice	Washington U. in St. Louis	Report
How Learning Happens	Edutopia	Video playlist
Introduction to the Learning Sciences	Digital Promise	Website
Six Strategies for Effective Learning	The Learning Scientists	Website
Applications for Psychological Science	American Psychological Assoc.	Website

I would like to learn about assessment and feedback strategies supported by learning sciences.

TITLE OF RESOURCE	PUBLISHING ORGANIZATION	RESOURCE TYPE
Assessment and the Learning Brain	CTTL	Blog post
Classroom Assessment and Student Learning	Educational Testing Service	Report
How to Use Grading to Improve Learning	ASCD	Book

I would like to learn about how climate & culture contribute to student learning.

TITLE OF RESOURCE	PUBLISHING ORGANIZATION	RESOURCE TYPE
Social and Emotional Learning Impact	CASEL	Website
What We Know about Learning Mindsets	Mindset Scholars Network	Report

I would like suggestions on using evidence to guide my procurement decisions.

TITLE OF RESOURCE	PUBLISHING ORGANIZATION	RESOURCE TYPE
Better Edtech Buying for Educators	ISTE	Report
Using ESSA to Fund Edtech	ISTE	Report
The Evidence Provisions of ESSA	Results for America	Infographic

2. Look for Quick Wins:

As you review these resources, brainstorm the path of least resistance for your district. To avoid initiative fatigue, leading districts have deliberately folded the learning sciences into other ongoing work. For example, how can the district invest in the available human capital? Could the district train existing professional learning coaches, school administrators or other teacher leaders (see below for an example of how Frederick County trains its existing teacher specialists)? What would be the best way to ease educators into the learning sciences? In the future, could the district also involve these trained individuals in the procurement process?

Frederick County Public Schools: Teacher Specialists

In 2019, in partnership with the Center for Transformative Teaching and Learning, Frederick County Public Schools will train 60 teacher specialists to be proficient in the learning sciences. Below is a description of the duties that the specialists will carry out upon completion of their training.

- Provide professional learning for teachers and administrators about best practices supported by the learning sciences.
- Consult with principals and teachers on implementing new instructional programs/strategies.
- Collaborate with other professional learning leaders and curriculum specialists to develop, review and revise curricula and instructional strategies.
- Consult administrators, teachers and parents to meet the needs of individual students through planning, consultation and program design.
- Suggest strategies, materials and approaches to individual teachers and teacher teams.
- Model lessons to address the needs of students.
- Coordinate the planning and implementation of programming for new teachers.

3. Seek Influencer Buy-In:

Leading districts have also highlighted the importance of seeking buy-in from key decision-makers whose support would seamlessly integrate learning sciences throughout the system. Identify innovative and influential decision-makers within the LEA — such as the superintendent, deputy superintendent, departmental directors, professional learning specialists and district technology coordinators — who would be excited to integrate learning sciences into ongoing work.

4. Propose Integrated Strategies:

Present your ideas about how the learning sciences could support the district's ongoing work to the personnel identified in step 3. Pay close attention to how you frame your argument. LEAs are often juggling several initiatives and will not have sufficient time or resources to devote to an entirely new initiative. When speaking to district leaders, Meg Lee, supervisor for the Frederick County Public Schools Office of Advanced Academics, emphasized that “[Investing in the learning sciences] isn't anything new. This is just a way to do the things that we are already doing — improving educator quality and student learning experiences — in a more efficient way.”⁵⁸

⁵⁸ M. Lee, personal communication, February 20, 2019

Frederick County Public Schools: Folding Learning Sciences Into Ongoing Initiatives

Frederick County Public Schools' (FCPS) [2018 strategic plan](#) outlines three “core strategies” that the district will employ to guide its school improvement efforts. FCPS leaders saw investment in the learning sciences as a means to enhance each of the three strategies, rather than a competing fourth domain that requires redistribution of time and funds. Other district leaders can similarly approach this work by listing their current priorities and thinking about how the learning sciences supports each priority.

STRATEGY 1: A FRAMEWORK FOR TEACHING

A [Framework for Teaching](#) FCPS uses Charlotte Danielson’s Framework for Teaching to identify elements of high-quality classroom practices. This Framework emphasizes that learning is contextual, influenced heavily by both the affective environment and opportunities for deep, cognitive engagement. Therefore, FCPS leaders saw that providing professional learning opportunities focused on the learning sciences was a key method to align teachers’ practices to the framework.

STRATEGY 2: ACCELERATED LEARNING PROCESS

Accelerated Learning Process The Accelerated Learning Process (ALP) refers to regularly scheduled collaborative sessions for FCPS teachers to review formative student achievement data and unpack the state’s academic standards to make informed instructional decisions. These in-school professional learning communities further serve as a forum for the exchange of evidence-based classroom practices. Therefore, teacher specialists trained through the Center for Transformative Teaching and Learning partnership could leverage ALP to deliver professional learning opportunities focused on the learning sciences to a broader audience of FCPS teachers and administrators.

STRATEGY 3: CULTURAL PROFICIENCY

Cultural Proficiency FCPS defines this strategy as the districtwide commitment to provide a “welcoming, inclusive environment where [students] are highly engaged in learning and afforded equitable opportunities to participate in a full range of activities, curricula and services.”¹¹ As a critical component of this commitment, teachers are learning how to cultivate a school climate and culture that recognizes all students as capable of high-level learning and instills their sense of belonging.

5. Define Next Steps:

Collaborate with this group of district leaders to identify the best next steps. Refer to the policy recommendations from the previous section for ideas. Does the strategic plan need to be updated to include references to the learning sciences? Who would be the appropriate professional learning providers to collaborate with? How can you engage stakeholders across departments in the LEA or with state education agencies to incentivize teacher participation in professional learning activities on the learning sciences? Which funders would be willing to partner with your district and support this work? Could you leverage federal funds appropriated under ESSA, such as [Title II-A](#) grants?

Acknowledgments

This document was written under the guidance of **Joseph South**, chief learning officer at the International Society for Technology in Education (ISTE) and **Margaret (Meg) Lee**, supervisor for the Office of Advanced Academics at Frederick County Public Schools and ISTE's district policy advisor. **Ji Soo Song**, policy and advocacy associate at ISTE, was the primary author and led the research and writing with support from **Brandon Olszewski**, ISTE's director of research, and **NarayanKripa Sundararajan**, ISTE's learning sciences specialist.

ISTE would also like to thank the following individuals for reviewing the document during its development.

- **Roby Chatterji**, senior associate at Whiteboard Advisors
- **Kurt Clay**, assistant superintendent at Delta County School District
- **Keith Harris**, Ed.D., executive director for the department of accelerating achievement and equity at Frederick County Public Schools
- **David Pinder**, Ed.D., instructional superintendent at District of Columbia Public Schools
- **Evo Popoff**, senior vice president at Whiteboard Advisors
- **Trish Shaffer**, social and emotional learning coordinator at Washoe County School District

This project has been made possible in part by a grant from the **Chan Zuckerberg Initiative** DAF, an advised fund of Silicon Valley Community Foundation.

The International Society for Technology in Education (ISTE) is a nonprofit organization that works with the global education community to accelerate the use of technology to solve tough problems and inspire innovation. Our worldwide network believes in the potential technology holds to transform teaching and learning. ISTE inspires the creation of solutions and connections that improve opportunities for all learners by delivering: practical guidance, evidence-based professional learning and virtual networks, thought-provoking events and the ISTE Standards, a framework for rethinking education and creating innovative learning environments. The ISTE Annual Conference & Expo is one of the world's most influential edtech events, attracting over 24,000 attendees in 2018. For more information on ISTE resources or to schedule a call with an ISTE state policy expert, please reach out to advocacy@iste.org.
