Public School Choice Application

West Dallas STEM School

January 2020

DALLAS INDEPENDENT SCHOOL DISTRICT

SMU

TOYOTA USA FOUNDATION
Investing in a smarter tomorrow.

West Dallas

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Introduction

The West Dallas STEM School

The West Dallas STEM School Partnership proposes the opening of a STEM-focused, community-embedded PreK-8 school located at the existing Pinkston High School. The **West Dallas STEM School** has been collaboratively co-designed by DallasISD, Southern Methodist University (SMU), Toyota USA Foundation (Toyota), and the West Dallas community. The target opening date for the school is August 2021, starting with grades Seven and Eight. PreK3 through sixth grade will roll in starting in 2022.

The school will be a hybrid of DallasISD's transformation and innovation models. The PreK3 through 6th grades will be a transformation school. Priority will be given to students living in the West Dallas community; available seats will be filled through a lottery process. The 7th and 8th grades will be an innovation school; these grades will serve as the neighborhood middle school. There will be no academic admissions criteria for any grade levels.

Dominant characteristics of the school include a STEM focus, an equity lens, a site for learning and developing best practices, a full-service community school with emphasis on partnership with the non-profit sector to provide wraparound services, a strong research-practice partnership with SMU Simmons and close collaboration with industry to support students' long-term college and career trajectories.

The SMU Simmons School of Education and Human Development received a three-year planning grant from Toyota to support the collaborative co-design of a choice school in West Dallas. The aims of the grant are to support student academic achievement such that students are college and career ready, and to develop a replicable model for a STEM-focused school and for the partnership that is supporting it. A four-way partnership has been engaged in collaborative co-design to conceptualize what an innovative place-based, community-oriented, and STEM-focused education could be. The four partners represented in the West Dallas STEM School partnership are SMU, DallasISD, Toyota and the West Dallas community. Awarded in July 2018, the submission of this PSC 6.0 application marks the mid-way point for the planning grant, with the opening of the new school slated for the 2021-22 school year.

With support from the planning grant, the West Dallas STEM School partnership has developed design teams focusing on different aspects of the new school. These teams have representation from all four partners and include: Instructional Innovation and Equity Design Team, Professional Learning and Distributed Leadership Design Team, Community Development Design Team, Building Design Team, and Research and Evaluation Design Team. Additionally, a number of support teams include: Communications and Finance and Sustainability. These teams have embarked on a collaborative co-design process funneling to this PSC 6.0 application. Following the submission of the application, the WDSS partnership will continue co-design and will work to develop capacities and build readiness so that the school can be as successful as possible upon opening and long term. Long term, DallasISD will have full operational responsibility for the school, non-profits will enter vendor or other appropriate agreements with DallasISD, SMU will serve as university partner focusing on professional learning, teacher preparation, research and evaluation, and Toyota will serve as an industry partner.

Collaboration and co-design is a hallmark of this work. The *process* of co-design seeks to be inclusive, bringing a diversity of perspectives and voices "to the table." The *product* we seek is an equitable school environment that prioritizes the needs of underserved students and that meaningfully addresses root causes of persistent opportunity and achievement gaps. Importantly, we see the process and the product as inextricable: through innovative and inclusive co-design and planning we seek to disrupt the status quo ways in which decisions about education are typically made, to bring traditionally disempowered perspectives to the forefront and to develop a plan for a truly equitable and effective learning environment.

Key Elements of the West Dallas STEM School

The WDSS is being designed with, and for, West Dallas.

The WDSS is committed to equity in planning the school: collaborative co-design is the defining characteristic of this model; DallasISD, SMU Simmons School of Education and Human Development, Toyota, and the West Dallas community have all been meaningfully involved in the planning work to date and will continue to collaborate to support the school and community long term.

The WDSS is also committed to equity in long term outcomes for students, seeking to open and expand multiple pathways to college and career readiness for students to whom these pathways are often blocked.

The WDSS will open in August 2021 on the grounds of the existing Pinkston High School; using existing bond money, it will be a state of the art space for learning and community engagement.

The WDSS will feature a STEM-focused curriculum that will prepare students to be successful in a wide range of chosen career and college paths.

The WDSS curriculum will be both place-based and project based; this means that students will learn through carefully designed and delivered projects that are directly tied to the local context.

The WDSS will be a hub for community services. Physical space in the building will allow non-profits to collaborate closely with DISD and to provide services to students and families in the PreK-8 school and the surrounding community.

The WDSS will be an anchor for other educational initiatives in the area. Taking a cradle to career lens, the partnership is developing plans for services for the 0-3 age group and is carefully strategizing vertical alignment so that students leaving 8th grade can transition successfully into a number of secondary and post-secondary environments. Taking a 360 lens of the broader community, the partnership is working with surrounding elementary schools, a network of non-profit providers, and is attending to issues of housing and transportation.

The WDSS will be a learning and demonstration site where future generations of teachers, school leaders and non-profit providers will learn alongside PreK-8 students and where new knowledge about exemplar educational practices will be generated.

The WDSS will be a center for research as well as continuous improvement, demonstrating *what works,* and how, in innovative educational settings, and disseminating information within Dallas and beyond.

The WDSS will be a model that can be replicated, expanding excellent educational opportunities well beyond West Dallas.

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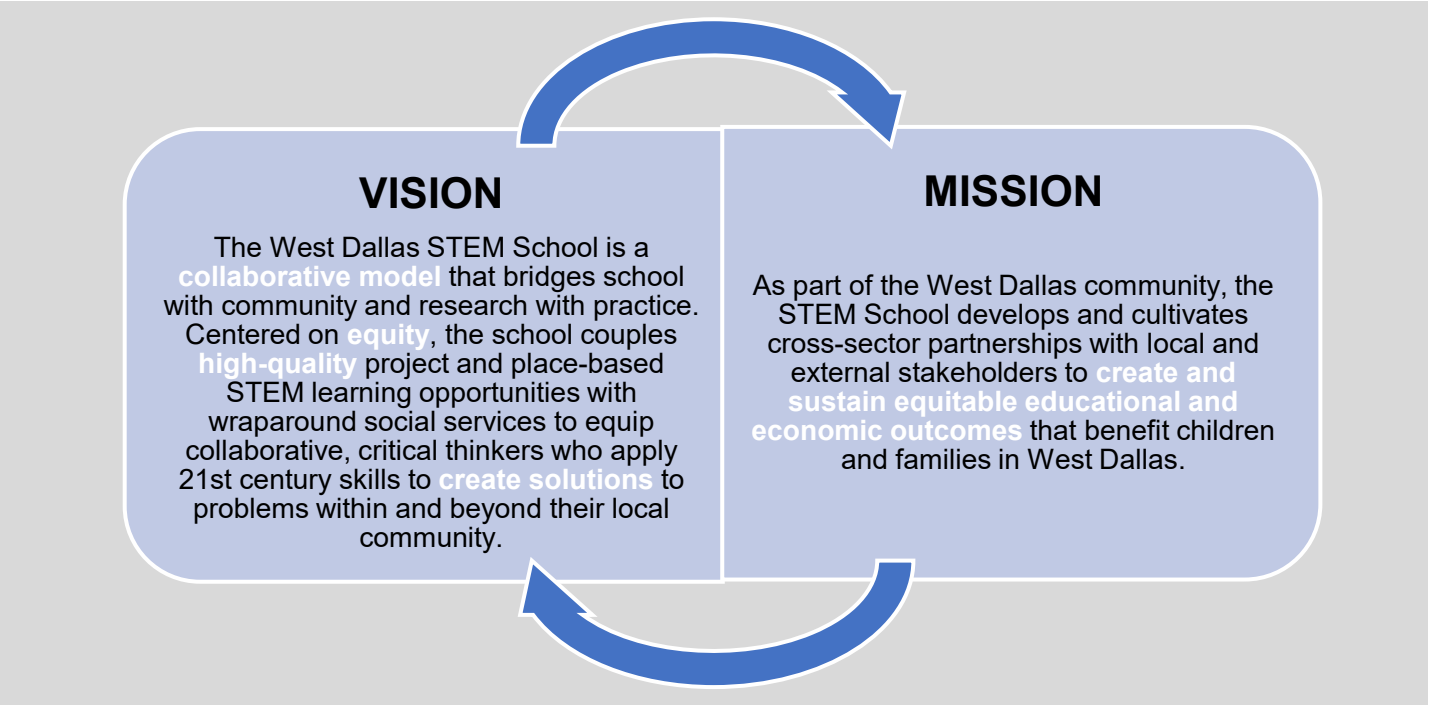
Vision for the West Dallas STEM School

Vision and Mission

Based on the demonstrated need for this school in West Dallas, the school vision and mission reflect a commitment to equitable outcomes for students and families. Over the past year and a half, the partnership has worked to understand the vision for the school from a wide variety of stakeholders, with emphasis placed on understanding the perspectives of West Dallas residents, community leaders, and social service providers. A wide range of visioning activities, representing all project partners, has resulted in the following Vision and Mission.



As a **model for collaboration**, the WDSS brings community into school and school into community through a place-based, STEM-focused curriculum, a learning ecosystem that leverages research, nonprofit organizations' involvement in the school, and the voices of school and community stakeholders in its direction.

The WDSS's focus on **equity** means removing barriers that prevent students and families from accessing resources and services that support their vision for success. As a result, this school is envisioned as a **full-service community school** that includes co-located and nearby wraparound services that align with and are a responsive to community-identified priorities.

Educational opportunities are **high-quality**, reflecting best practices in both in and out-of-school time. Opportunities are diverse and provide students and families with multiple redundant pathways to success.

The vision for this school acknowledges that schools and communities are inextricable from one another. Thus, the partnership focuses on **creating solutions** to problems identified within and by members of the school community. This informs the place-based, or community-embedded, and problem-based school curriculum as the extension of school components into the larger community. The school's mission reflects an aim to leverage cross-sector partnerships that benefit West Dallas residents and strengthen the community overall.

A Model School

In addition to the documented need for excellent educational opportunities specific for West Dallas students, there is additional need for the type of "model school" we are proposing. We think about the model in at least three complementary ways, each of which position the WDSS as a **catalyst for transformative learning.**

The model is innovative and anchored in equity. The WDSS partnership acknowledges, and takes seriously the persistent disparities in academic achievement and other educational outcomes along the lines of income, race, and zip code. We have adopted an equity lens to this work, seeking to remove barriers and to provide just supports where they are needed most. An orienting framework for co-design has been *if we keep doing things the way they have always been done, we will keep get the results we have always gotten.* The partnership acknowledges the persistent disparities in long-term outcomes based on historical and institutionalized racism and believes that a status quo approach to education will only continue these patterns. In this way, we see innovation and transformation in education as inextricable from equity. Indeed, it is through innovation in co-design and engagement of all partners, and through innovation of the learning environment itself that we seek to achieve equitable outcomes.

The school will be replicable. A central aim of the WDSS partnership is to develop a replicable model. This has two key components. One part of the model involves the partnership itself; carefully studying and documenting the process we are undertaking to collaborate and co-design the school. The second part of the model is the school itself, including the STEM-focused curricula, the approach to professional learning, the focus on community engagement and equity, the inclusion of wraparound services and even the role of research, evaluation and assessment for supporting learning and outcomes. By codifying this work, we will be able to share learning and spread practices about how to bring together partners to develop a uniquely impactful learning environment. The role of research and evaluation that is threaded throughout this work is a key support for this kind of model documentation.

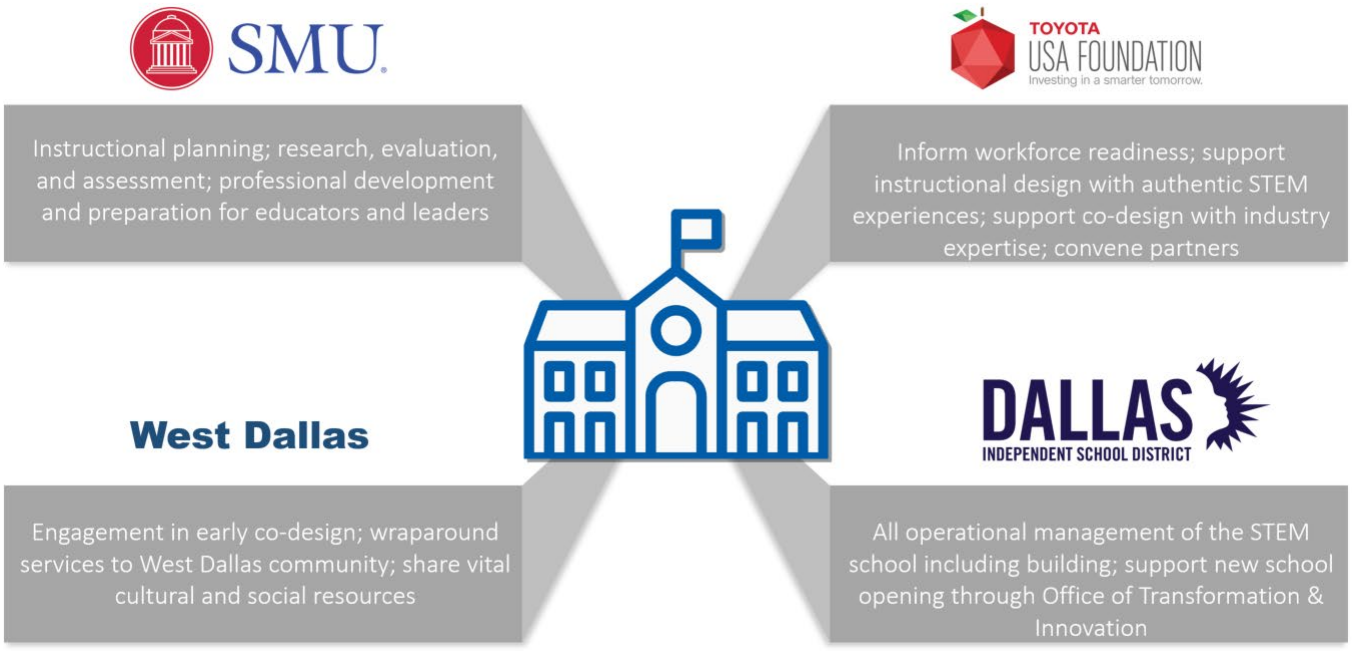
The school will be a model for exemplary teaching practices and STEM learning. The gap between research and practice is alive and well in education. Effective and evidence based strategies that have enormous potential for long term learning outcomes and for closing persistent achievement gaps are infrequently and/or poorly used in many school settings. Similarly, important learnings emerging from the real world of classrooms and schools does not reliably make its way into academia. We propose a model where evidence based practice and practice based evidence flow freely back and forth between the school district partners and the university, between the community and broader industry partners. The West Dallas STEM School will be a robust learning ecosystem that will sit at the intersection of SMU Simmons' educational expertise, DallasISD's professional development systems, pertinent input and best practices from industry, and embedded learning from the local community. The school will serve as a learning laboratory and demonstration site where model (exemplar) practices can be demonstrated, new and seasoned teachers can be developed, school and community leadership can be cultivated and emerging evidence can be widely disseminated.

A Four-Way Partnership

The West Dallas STEM school partnership is comprised of representatives from SMU, DallasISD, Toyota and the West Dallas community each contributing unique expertise through a collaborative co-design planning process (see Figure One). Our ongoing work is organized into co-design teams that include all four partners. They are: Instructional Innovation and Equity Design Team, Professional Learning & Distributed Leadership Design Team, Community Development Design Team, and Research and Evaluation Design Team. Leadership and advisory structures include an Executive Team, a Steering Committee, a Building Design Team, an Advisory Board and an ad hoc community team that has aided in planning input and visioning sessions (see bios, provided in Appendix A and B). Support teams include Finance and Sustainability and Communications. In order to enact the vision and

mission of this school, the **applicant team** for this Public School Choice application includes the entirety of the WDSS partnership, representing all four partners, spanning a wide range of expertise. The diversity of knowledge, skills, and lived experiences of the applicant team uniquely position the team to deliver on the promises in this proposal.

Figure One: All four partners in the West Dallas STEM School partnership contribute unique expertise that will result in an innovative school model.



Cradle to Career

The WDSS is envisioned as an "anchor" project within West Dallas, initiating cradle to career supports. While the current focus of this OTI application is the PreK-8 STEM school, partners are leveraging the planning grant opportunity to begin envisioning how PreK-8 fits into the overall landscape of West Dallas. For instance, we are collaborating with school district and non-profit early childhood and workforce development leaders to understand both needs and opportunities for childcare and education for the youngest residents – those ages 0 to 3. We are closely collaborating with Pinkston High School and local college access partners in order to design vertically-aligned learning opportunities, ensuring that when students exit 8th grade they can step seamlessly into school setting that expand and deepens student opportunity. Over time, this planning work will grow to include local universities, the community college system, and multiple industry partners.

Comprehensive Approach

The WDSS partnership acknowledges that the health and success of schools and communities are inextricable from one another. As such we are taking a comprehensive, 360 approach to the broader setting in which the PreK-8 STEM school is situated. First, this means that we are collaborating closely with DallasISD feeder pattern executive directors to coordinate emerging STEM school plans with the surrounding elementary schools. Second, it means that we are expanding notions of *where school ends and community begins* by forging strong partnerships with after and

summer school providers as well as social service and wraparound providers. Last, we are coordinating with city and other public officials to understand to respond to rapidly changing housing realities in West Dallas that will have direct implications for our intended students.

School Data Profile

West Dallas, in particular, as a predominately low-income minority community, is home to a disproportionate share of children placed at risk. In 2018-19, 94% of approximately 6,100 PreK-12 students in the Pinkston High School Feeder Pattern were economically disadvantaged, compared to 86% of all students in Dallas ISD. This group of West Dallas students is 79% Hispanic, 18% African American and 3% all other categories, compared with the overall district which is 70% Hispanic, 22% African American and 8% all other categories. Sources: My Data Portal – Dallas ISD Data Packets July 23, 2019; 2019-20 School Profiles, Dallas ISD.

The percentage of families living below the poverty line in the 75212 zip code (33%) is significantly higher than the city at large (22%). Additionally, 18.3% of residents in 75212 live in "deep" poverty, meaning, less than $10,000 annual income. Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

West Dallas also has an extremely young demographic makeup, with 38% of the population comprised of youth aged 19 or younger (19% aged 9 and under) in comparison to the city of Dallas, where 28% of the population is 19 or younger and 15% is under 9. Of the residents of 75212, only 51% have completed high school and only 25% enrolled in college or graduate school between the ages of 18 and 24 years, compared to 76% high school graduation and 28% enrolled collage or graduate school citywide. Source: ACS, 5YR (American Fact Finder).

Both the PreK-6 Transformaiton and 7-8 Innovation settings of the WDSS represents "recapture" strategies for DallasISD, seeking to regain a market share of local students. Focusing on PreK-6, approximately 26% of local students who might otherwise attend these grade levels in Pinkston Feeder pattern schools are going elsewhere; according to district numbers, 2,768 students currently in the Pinkston Feeder Pattern attend charter schools. In 7-8th grades, which will serve as the neighborhood middle school, we seek to significantly expand the number of students who choose the new WDSS as their middle school. As of December 2019, there are 343 middle school students attending Pinkston and there are 277 total 4th graders and 282 total 5th graders enrolled at Allen, Carr, DeZevala and Martinez Elementarty Schools. If all of these students become 7th and 8th graders at the WDSS in 2021-22, this would represent 559 future middle school students and a targeted net gain of 216 West Dallas students chosing to stay in a West Dallas DallasISD school.

Plan for the West Dallas STEM School

A School for West Dallas, Designed With West Dallas

The partnership acknowledges that disproportionate and inequitable access to excellent educational opportunities can determine lifelong trajectories. We propose that an anchoring identity for the school is that is a *West Dallas* school; indeed this has been a key feature of co-design and collaborative work to date.

This means that enrollment for PreK-6 will prioritize students, through a structured lottery, in the following order:

- First priority – students living in the existing Pinkston Feeder pattern
- Second priority – students living in the 75212 zip code
- Third priority – all DallasISD students

Our stated aim is to fill all available PreK-6 seats with Pinkston Feeder Pattern and/or 75212 students before opening the lottery more broadly to DallasISD students.

Secondary to the focus on West Dallas, the school will adopt a 50-50 model that has proven successful in other DISD OTI schools. This means that half of the seats in PreK-6 will be filled by students who are economically disadvantaged and half will be filled by students who are not.

The partnership is acutely aware of the rapidly changing demographics in West Dallas and is actively engaged in conversations about how housing issues will impact the school and how we can leverage strategic resources and partnerships to mitigate this.

As such, we propose an additional "grandfather" strategy that will protect seats in the school for families who *currently* live in West Dallas, in 2020. If rising housing prices or other economic factors force current families out of the area, we wish to ensure that they still have a priority seat in the West Dallas STEM School.

The partnership further proposes to work hand in hand with DallasISD's communications and OTI office to attract targeted West Dallas students and families to the school. Some of this work has begun, in the form of community events and information sessions. It will continue in earnest and will increase in 2020 and 2021 as SMU, DallasISD, Toyota and community partners ramp up communication efforts and collaboratively share information about the future school and as the school principal develops and executes a broad-scale communications plan.

A STEM-Focused, Community-Oriented Learning Ecosystem

The West Dallas STEM School will be a learning ecosystem where children and adults are engaged in **continuous improvement**. Continuous improvement is the integration of quality improvement into the daily work of individuals throughout a system and includes five critical features (1) problem and user-centered design, (2) standard practices and attention to variation, (3) seeing the system and attending to context, (4) the capacity to measure and track outcomes, and (5) specific and coherent methodology for improvement (Park, et al., 2013). Maintaining both the STEM focus and community embeddedness, continuous improvement will be central to all aspects of the school as a framework for enacting and sustaining equitable outcomes.

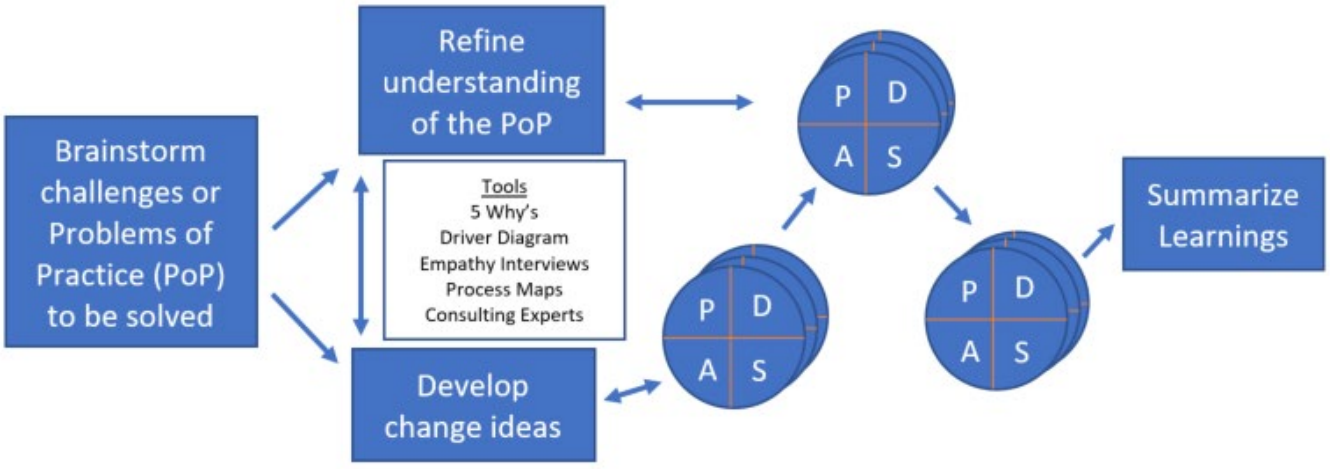
This approach involves using evidence to identify systemic processes, features, functionality or usage within the learning ecosystem or community that may result in *inequitable* outcomes. Education professionals—both in- and out-of-school time—will use evidence of student learning to identify differences in student learning or participation outcomes that deserve further study and adjustments in the system to increase equitable outcomes for children. Students may also use a continuous improvement approach to identify systems within their community that disparately impact parts of the population and work to identify, test, study, and adapt possible solutions to increase equitable outcomes for members of that system.

Figure Two:
The PDSA Cycle

Continuous improvement is conceptualized as understanding problems, testing change ideas, and summarizing learnings, with the bulk of visible work taking place in Plan-Do-Study-Act (PDSA) cycles that involves iterations designed to be repeated

until working hypotheses are ruled out and ongoing solutions to achieve equitable outcomes across the system are documented and disseminated (See Figures Two and Three).

Figure Three: PDSA Continuous Improvement Process



Teachers. With continuous improvement as a central feature of the WDSS, teachers will partner with SMU faculty to use a range of student level information to support inquiry into and improvement of their problems of practice. In particular, teachers use data to both understand the problems themselves and to study and test their ideas for change. First, the data necessary to understand the problem of practice might include student test scores, written and digital student work, videos of the classroom including both whole-group discussion and students working in small groups, or even individual interviews with students. In this "understanding the problem" phase of continuous improvement, the data is necessary to truly understand what is happening and why it is happening so that teachers can formulate change ideas that actually address the problem at its root cause.

Once teachers have deepened their understanding of the problem, their next step is to formulate one or more change ideas and test those change ideas in classrooms. Depending on the change idea, different data will be appropriate to understand the success of the change idea. Given that teachers often try things in their classroom, the most useful and complementary data will be in the form of student work samples, logs of students' online work progress, and classroom video. Teaching and analyzing the success of a teaching-related change idea are hard to do simultaneously. If teachers and their colleagues can use video-recordings, log data, and student work to analyze the success of their change idea post-hoc, they can be sure of its impact.. This approach has been successfully used in teacher study groups and professional learning communities to enhance both student and teacher learning.

School Leaders. Like teachers, school leaders will be working on problems of practice along with SMU faculty. While their problems of practice may be related to classroom problems of practice, they will more likely be about systems for supporting learning or examining data in aggregate form to examine school-level systems. Again, like teachers, they will use data to understand their problems of practice, and then also will use data to test change ideas they come up with. They might draw on data similar to what teachers are using like classroom video or live observations, logs of students activities or student surveys. One type of data that might be different from the data collected for teachers' problems of practice would be surveys, interviews, or other practical measures from school staff and other stakeholders in the school system (e.g., wrap-around support providers, parents), that help them to understand how the school is functioning.

Nonprofit Providers. Like teachers and school leaders, nonprofit providers will be working on problems of practice. Working collaboratively with teachers, school leaders and SMU faculty and staff, they may use classroom data and other artifacts from the classroom to understand how they might better support the students they serve. This data could take the form of any of the above-mentioned data streams – formative assessments, video, surveys,

interviews, and student scores. Again, they will use student, school and community-level data to understand their problems of practice, and to test their change ideas and make progress toward their goals. The idea is to facilitate the coordination between the school and the nonprofit so they can maximize student learning and well-being.

Students. Students will have opportunities to engage with continuous improvement as well. Similar to adults who are engaged in ongoing learning at the West Dallas STEM School, students will be encouraged to identify problems that they want to work on, investigate to understand those problems, enact and improve upon change ideas using PDSA cycles, and summarize their learning. For example, students might decide that large quantities of trash on campus is a problem that they want to work on. In order to solve the problem, they will collect and analyze data about types of trash and analyze root causes. Next, students might conduct empathy interviews with fellow students and staff in addition to research on recycling and composting. They decide on several different change ideas such as building and tending to a compost bin, placing recycling bins around campus in strategic locations, and designing an information campaign to inform their campus community. Embedded in STEM-focused, place and project-based units of study, and aligned with underlying Learning by Design elementsPDSA cycles would support students in measure outcomes, analyze results, and refine their change idea to maximize effectiveness in addressing the problem.

Data usage to support continuous learning. A key resource for supporting excellent applications of the PDSA cycle will be access to data about student learning including practical measures, state of the art formative assessments and traditional summative indicators of achievement. The WDSS partnership is in the process of developing the digital data infrastructure that will support continuous improvement. Design teams are collaborating to determine what data will be most useful and how it can most effectively be shared with teachers especially. Independent of the Toyota grant dollars, SMU Simmons has hired an Office of Information Technology (OIT) expert to build a dashboard that will allow data to be easily accessed to support planned PDSA cycles. A key part of this dashboard will be a virtual learning board that teachers and school leaders can use to document their own learning, real time. This documentation simultaneously serves as an archive and rich dataset for other to learn from as well.

Example: Professional Learning With Teachers, School Leaders, and Non-Profit Providers

At the beginning of the school year, teachers, wraparound service providers, and other school staff and leaders come together and brainstorm challenges or problems that they're trying to solve. The 3rd grade team (consisting of teachers, academic wrap-around supporters, apprentice teachers and supporters, and school leaders) decides they want to work on student engagement. After working through a 5 Why's protocol to ensure that they're getting to the root cause they decide on their focal problem of practice: *it is hard to keep students motivated to engage in class*, which they will work on across this coming semester. They conduct empathy interviews and observations of students to fill out their driver diagram. In addition, they interview experts on campus and across the district and do some reading to begin to brainstorm change ideas. Some change ideas that the team brainstorms and decides to test out include: using positive reinforcement, providing hands-on experiences, and *assigning student roles*. They then work together during collaborative time to refine their change ideas, decide how to measure the effect of the change, and plan for their enactment of the change idea in their classrooms or other settings. For example, when testing the change idea of assigning student roles, teachers decide to video-record their classroom instruction and create an exit ticket to assess student's perceptions of their own engagement. Team members then enact (DO) their planned use of roles for students over the next week. In the next collaborative meeting, teachers share the results from their exit tickets and watch selected video excerpts of both successes and areas for improving this change idea. They STUDY these data and ACT based on learnings. Over time, they add a common protocol that standardizes student roles across settings and the process for explaining and reinforcing roles, helping to solidify this practice as a part of the overall WDSS model itself. At the end of the year, they share this protocol and their learnings with other members of the campus community. Every step of this process is documented and recorded on the virtual learning board for any member of the campus community to refer to at any time.

School Culture and Climate

Academic Culture and Climate. The academic culture of the WDSS will reflect intentional opportunities for student engagement, purposeful implementation of technology, and an embedded and committed presence of racial equity. Engaging learning experiences grounded in authentic, project-based learning and integrated STEM curriculum reflect the school's focus on the cultivation of a strong, student-centered learning environment. Likewise, the utilization of continuous improvement practices will support the growth, learning, and capacity building of the staff. The staff will approach their work, learning, and development through the examination of teacher-identified of Problems of Practice. Together, the staff will work through Plan, Do, Study, and Act cycles to understand and rapidly improve their work together.

Purposeful technology implementation and integration are essential to enhance curriculum delivery and improve student engagement. Additionally, robust technology skills will enhance student engagement and academic rigor in the rich STEM content. Preparing the WDSS graduates with college and career readiness skills will benefit them in both their current and post-secondary lives. A humanities thread will also be necessary to round out each student's educational experience, and it will be equally important to build the leadership capacity of each student. Because learning is a social act, tending to the social and emotional health of students and staff will be essential for the development of a strong academic culture at the school. Teaching students tools that encourage social and emotional health, will support the academic culture of the school. Clear guidelines on these practices will be an explicit part of the day-to-day lives of the students and staff.

Professional Culture and Climate. The policies and practices of the WDSS will be rooted in equity and continuous improvement. As mentioned earlier in the application, students in West Dallas are disproportionally economically disadvantaged (94%) as compared to the district (86%). The culture of the campus will reflect the needs and views of all stakeholders and will focus on a collaborative culture, interdisciplinary practices, and a distributed leadership (DL) model. A DL model is congruent with a continuous improvement approach. Additionally, given the reality that school leaders turnover frequently, a strategic DL focus means that multiple, layered and networked leaders throughout the school building (and indeed the broader school community) will be poised to lead; any one staff person leaving the organization will not cause major setbacks and the system will be designed to keep functioning optimally.

Attributes of a collaborative culture rooted in equity and continuous improvement will include respectful, trusting relationships among administration, faculty, students, parents, and the community. Staff-driven professional learning should be evident in the voice and choice teachers have in directing their own learning and professional development. It also includes honoring the important attributes of collaborative inquiry, decisions rooted in data, and continuous improvement models. To promote interdisciplinary cohesion, unique autonomies afforded by OTI's transformation and innovation models will be utilized. For example, innovative scheduling, and use of non-profit professionals to support school-day learning will be in place to support more teacher time for cross-team collaboration.

Example: Distributed Leadership

The role of the principal and other leaders is to support the continuous improvement of their team. This means that the principal is primarily tasked with managing and supporting the continuous improvement activities within the school. This is perhaps best exemplified by a day in the life of the principal. The principal might start the day by quickly huddling with the leadership team, to jointly review the virtual learning board and have a broad conversation about opportunities for improvement and ongoing projects, as well as checking in on the continuous improvement process itself. There are representatives from each grade level team as well as other teams on campus as a part of this leadership team. Once school staff report to their classrooms and other roles, the principal circulates through the building to observe the daily happenings, paying special attention to the problems of practice that those individuals are working on (supported by the virtual learning board). The first 2 hours of the morning are protected so that the principal is able to make their rounds. Also, the principal cycles through collaborative meetings weekly to learn about teams' work on problems of practice and other collaborative activities, better understand supports for the team, and provide feedback and support. Leadership is distributed in that the principal is supporting all members of the campus community to learn and grow. In turn, each individual team leader is charged with supporting the learning of their team. And, decisions are made collectively, prioritizing the voice of the individuals who are carrying out the daily work, paired with data to support decision-making.

Instructional Framework

In addition to the instructional framework described below, please see a **sample unit** and a **sample bell schedule** in Appendices C and D.

The West Dallas STEM School proposes a unique instructional model. A TEKS aligned STEM curriculum based on the idea of educating students in the integration of four specific disciplines — science, technology, engineering and mathematics through an interdisciplinary and applied approach will be integrated into a problem- and/or place-based problem solving environment that emphasizes the development of STEM investigative and explanatory skills and knowledge. Teaching a STEM curriculum goes beyond merely having independent experiences or separate classes in each of the individual content areas comprising STEM. Learning in STEM, as well as other content areas, will be foregrounded and backgrounded as needed within particular projects. Connections will be continually forged between hands-on or real-world experiences and the STEM content areas and between the content areas. For example, the National Academy of Sciences publication on integrated STEM envisions a scenario in which students are tasked with designing a solar oven for use in areas without dependable electricity or to reduce electricity dependence. During the project, students would use an engineering process to design the oven and learn scientific concepts related to the thermal properties of materials, density's role in thermal insulation, and mathematics for measuring, graphing, and interpreting data. Writing and oral speaking skills would be involved in justifying and explaining the model. Aesthetic qualities may be involved in design considerations. Cultural compatibility aspects could be investigated through sociology, history, and geography.

During project- and/or place-based activities, students will be challenged to "Inspire" and "Aim". This approach originates from the Dallas ISD Engage to Learn Framework by which students participate in analyzing community needs to identify a problem, set ambitious goals for solving the problem and create an action plan for reaching/monitoring progress toward the goals. Although situated within the Dallas ISD Learning by Design Framework, investigations will be focused on developing students' scientific and engineering practices. The practice

that is most closely aligned with the "Inspire" and "Aim" components is engaging students in Asking Questions and Defining Problems.

Students will be engaged as they "Explore" and "Create". They will participate in TEKs aligned content intensive instruction provided as the need arises that will support the action plan and goals of the problem. Productive struggle (persevering and thinking flexibly in situations in which the correct solution is not available ot known) and deep critical thinking will play a major pedagogical role in the instructional delivery of content. With strong content knowledge, students will design flexible and novel solutions and test their theories using design thinking investigative processes. The scientific and engineering practices most closely aligned with "Explore" and "Create" include: Developing and Using Models and Planning; Carrying out Investigations; Using Mathematics and Computational Thinking; and Constructing Explanations and Design Solutions; . Our place-based problem solving focus will encourage students to focus on the people they're creating for, which leads to better products, services, and internal processes.

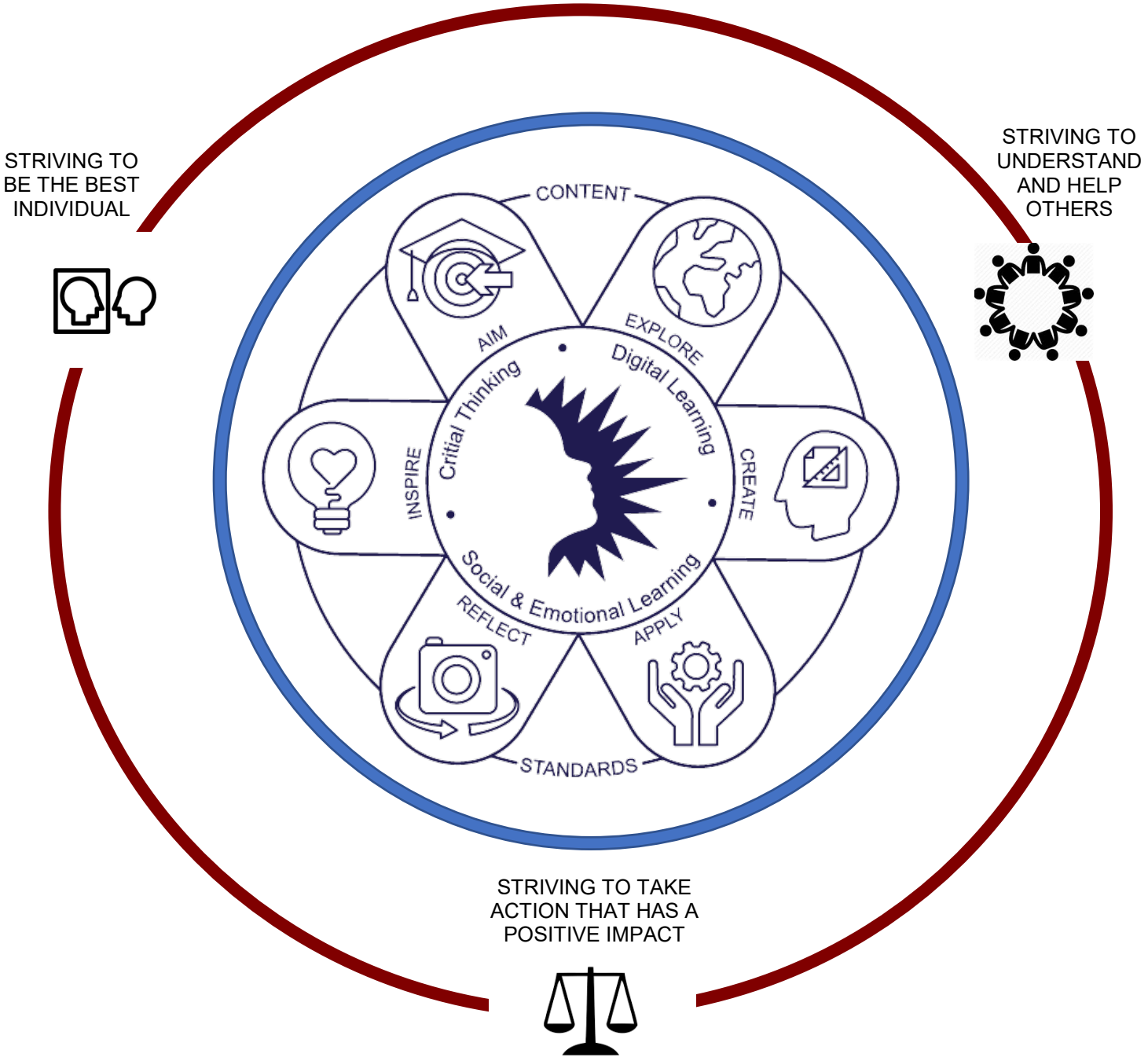
By engaging in STEM-intense, place-based units, students can potentially provide viable solutions to key problems that their community is facing simply by being a part of the learning environment at school (See Appendix C). Although solutions to community problems may be a useful benefit to the explorations, the primary purpose of the instructional program is to ensure students acquire STEM investigative and explanatory skills and knowledge, oral and written literacy skills and knowledge about democratic processes which lead to the development of responsible citizenry. Our approach will situate learning in realistic problem-solving situations through a project- and/or place-based (community) approach. Applying the students' STEM investigative skills to community issues grounds instruction and learning in a context that is likely to be important and interesting to students, particularly if they are involved in determination of the problems.

Critical Importance of English Language Learners in the West Dallas STEM School

Given the demographics of the WDSS school population, what we know about learning and teaching of English language learners (ELs) will necessarily require attention to not only culturally appropriate pedagogy but also to developmental expectations for second language development. Students will need to develop both general and content-specific academic language and teachers will need to apply knowledge of language development to the teaching of academic content areas for ELs. This type of pedagogy is particularly critical for reform-oriented practices such as inquiry-based teaching and learning which have been somewhat problematic to develop with ELs in science (see Lee et al. for research in this area). Teachers will need to use strategies involving visualization and group work while taking advantage of the oral and written proficiencies students bring to the classroom from their home language to provide a scaffold for inquiry learning. Using the example from the previous paragraph, students would have oral and/or written language objectives as well as content objectives to fulfill during the project involving the solar oven. The teacher might provide writing and oral prompts involving visualization (e.g., Draw a pricture of the main components and properties of the solar oven and provide a written summary of how it works. Describe the process to your partner). Sentence starters such as "I chose ___ as the material for the oven because …) might provide a scaffold for both conceptual understanding and language development.

Finally, students will integrate the "Apply" and "Reflect" components of the framework during integrated STEM project work. Students will work with teachers and other school leaders to present culminating projects to the school or community for discussion and further study. Since the scientific and engineering process is iterative in nature, the majority of scientific and engineering processes will be evident during the "Apply" and "Reflect" components of the framework. Practices that will be developed include all of the practices articulated above as well as: Analyzing and Interpreting Data and Engaging in Argument from Evidence. Engaging in argument about evidence, particularly when scaffolded appropriately, provides the opportunity to also enhance oral communication skills. Information gained through this phase will inspire students to re-engage and iterate their designs in order to generate solutions to the place-based problems. In this way, students potentially will see themselves as an advocate for the greater good and solidify their role as leaders for tomorrow.

Figure Four: Conceptual Model for Curriculum and Instruction



Instructional Cycle Phase 1

Curricula will center on real-world problems and problems grounded in the local community. This will look inherently different at the PreK-1, 2-3, 4-5, and 6-8 levels in the level of complexity at which the "real world" problems will be addressed; however the context of place-based units will be similar across grade bands. Students will likely be motivated to learn about topics they see in the real world around them, particularly if they are engaged in identification of the problems, and they will have the opportunity to connect their school learning to their lived experiences. Curricular materials, resources and instructional strategies will be intentionally designed and delivered to be culturally relevant to students and to maximum promote student engagement.

In Phase 1 of instructional cycle, students will be actively involved in the process of setting goals and developing plans for success with their teacher to ensure they are provided with opportunities for personal choice in their learning. When a problem or challenge is identified, students also will have a voice in determining with their teacher and peers what they need to learn. Teachers will utilize student performance data to assess student prior knowledge about the content and skills needed for project success and involve students in monitoring their own progress. Through this process, they will simultaneously learn academic content as well as develop dispositions and strategies that lead to self-awareness and self-regulation described in the following section.

Instructional and Cultural Pedagogy. The learning environment at the West Dallas STEM School will emphasize teamwork, cooperation, and collaboration. This emphasis will be visible in day-to-day classroom instruction. For example, teachers will support student groups analyzing complex tasks, setting ambitious goals, and taking steps to achieve those goals. In addition, teachers will also assist students monitoring progress towards the goals they set by teaching them metacognitive strategies such as determining what's important, inferencing and asking questions. When appropriate, older students will model teamwork, cooperation, and collaboration for younger students by visiting their classrooms and working alongside them. Instructional resources will include literature and content materials that emphasize a diverse community of learners and experiences to promote cultural awareness and engagement.

The West Dallas STEM School will also emphasize **academic self-awareness and self-regulation**. Self-regulation will emerge through engagement in self-assessment and reflection as part of theDallas ISD learning by design framework previously described. These self-assessments will require students to be aware and honest about their own progress as well as their personal effort toward achieving their goals. Self-regulated learners know how and when to deploy strategies for achieving their goals. We will promote students learning academic self-regulation by engaging them in a variety of contexts for learning STEM content (e.g., project-based learning, makerspace, place-based learning). Students who learn in these contexts will better understand the role of failure, reflection, and iteration in perseverance that can improve future learning and results. They will also recognize the integrated nature of science, technology, engineering, and math as they have opportunities to draw upon knowledge from the STEM disciplines in developing and implementing strategies to meet their goals. Projects will include culturally diverse STEM role models and emphasize the historical and geographical contexts related to the topics of study. As students consider implications for their community as well as the global society, integrity and responsibility will be emphasized.

In addition to emphasizing academic self-regulation, the West Dallas STEM School will promote students developing **emotional self-regulation**. Emotionally self-regulated individuals cope with difficult situations in which they experience strong emotions—leading to greater self-awareness and better long-term decision making. We will emphasize emotional self-regulation by teaching strategies to identify and appropriately express their feelings and by making the school a safe, welcoming, equitable, and overwhelmingly positive place for all students to learn.

Instructional Strategies. The first phase of the instructional cycle will focus on the following:

- Analyze the student identified problem and unpack content-intensive TEKS related to the project outcome and learning targets (i.e. story of the unit, learning target charts, Know/Show charts, KWL, Schema Diagrams)

- Set goals with benchmarks for self-regulated progress monitoring (i.e. journaling, portfolios, entry tickets, or data charts)
    - Academic Mastery by content areas (RLA, SS, Math, Science)
    - Explicit instruction in personal awareness and interpersonal Behaviors (i.e. Emotion charts, Social contracts, Interpersonal profile goals, Profile of graduate)
        - Regulate one's emotions, thoughts, and behaviors in different situations — effectively managing stress, controlling impulses, and motivating oneself.
        - Accurately assess one's strengths and limitations, with a well-grounded
        - sense of confidence, optimism, and a growth mindset.Envision the outcome of the challenge as a means for backward design (i.e. project planning tools, agendas, AVID strategies, Choice Board/menus)

Instructional Cycle Phase 2

In Phase 2, students will utilize new content-specific knowledge as they engage in a problem- or place-based project centered around their objectives and goals from phase 1 planning. This component of the cycle will allow students to explore learning through productive struggle and create novel solutions for their problem. High cognitive demand tasks using realistic investigations will set high expectations for students to support their synthesis of information. Students will also begin to test their theories and applications of knowledge to reach deeper levels of learning. The cycles will support differentiation of the learning process to ensure that all students have learning materials and learning pathways that are matched to their individual needs, including the use of research-based EL and special education strategies. As students encounter challenges in their learning, they will be supported in developing perseverance and viewing struggles as opportunities for learning.

Social Awareness and Relationship Skills will play an essential role in this portion of the instructional cycle. Students will develop dispositions which foster respect and dignity. These dispositions will be supported in the instructional cycle through explicit discussion and modeling. In addition, as students learn about their own personal traits, they will be supported in growing their awareness of commonalities and differences between the individuals in their groups as well as within the global society. With a lens of empathy and compassion for differences, students will be supported in applying their self-awareness and relationship skills to deal positively with cognitive dissonance and constructive feedback in group settings.

Instructional and Cultural Pedagogy. A combination of problem based projects and need-based content intensive focused instruction (see Appendix C) will lead the learning at the West Dallas STEM School. Student centered content intensive instruction will focus on the key TEKS in all core contents that are the foundation of the project. In addition, grade level preparedness and design thinking investigations will support STEM concepts by allowing students to use iterative processes to create solutions to complex problems. As students create products or solutions to the problems that ground the learning experience, they will draw upon their learning across content areas to promote possible solutions to the community-based problem. At the heart of design thinking is the idea of building empathy for individuals in a system to understand their wants and needs. This results in a ground-up approach to design rather than a top-down approach. Every decision the designer makes can be traced back to the user, and as a result, the designer can be confident that the user will benefit from the end product. Importantly, designers must enter the process without preconceptions about what problems exist in the system or what solutions might fix the system.

Instructional Strategies. This phase of the learning will focus on the following strategies:

- **Content Intensive Instruction:** Deep content learning based on grade level TEKS aligned to the problem- or place-based project in whole, small and individual group settings across content areas (i.e. Science Labs, High Cognitive Demand Math Tasks, Literacy learning through comprehension, interpretation and analysis, Thinking like a Historian learning lines). Student routines to promote critical thinking as well as build interpersonal skills will be embedded in content area instructional settings such as:

    - Accountable Talk
    - Argumentation based on evidence
    - High Cognitive Demands routines including Tasks (Math) and Texts (Reading Language Arts)
    - Student-centered practices for engagement (i.e. quick writes, structured choice boards that include demonstrations of mastery through drawing, portfolios or video recordings)
- **Design-Thinking Investigations:** Synthesis of content learning to create/design solutions for complex problems based on the projects outlined in the phase 1 goals. For example, students (or teachers) at the WDSS might partner with the Dallas Housing Authority to investigate issues related to Fish Trap Lake. Students could conduct empathy interviews with residents in the area to get their perspective on "what's going on with Fish Trap Lake." Students might then analyze their empathy data utilizing various data depiction approches to see if a problem exists that could be solved using design—and then brainstorm ideas for solutions to that problem. After that, they could prototype or pilot their solutions, iterate on those solutions after several rounds of testing, and finally present their solution to representatives of the Dallas Housing Authority or the community. All investigations will be grounded in emphasizing and engaging in the scientific and engineering practices articulated above.
- **Integration of character and culture checkpoints:** During the content intensive labs and design-thinking labs to regulate progress on social awareness and relationship skills.
    - Take the perspective of and **empathize with others**, including those from diverse backgrounds and cultures (i.e. empathy interviews, team check rubrics, journaling)
    - Understand social and ethical norms for behavior and recognize family, school, and community resources and supports.
    - Establish and maintain healthy and rewarding relationships with diverse individuals and groups (i.e. team reflection on closing project outcomes)

Instructional Cycle Phase 3

In Phase 3, students will demonstrate their learning by considering how it can be applied to new situations both in and out of the classroom. With the West Dallas community as a key partner, students may have opportunities to see their problem-solving at school culminate in real-world applications that contribute positively to the community.

Student reflection will be ongoing throughout the learning process. Students will reflect on their learning and the products they create with opportunities to make iterative improvements. They will also reflect on the learning process. Various forms of peer review/communication will be incorporated including back channeling, simultaneous editing, blogging, and wiki sites to promote an exchange of ideas to promote increased quality iterations of the overall learning. This will allow students to reflect on their collaboration with peers and productive interaction, their attitudes and efforts, and their self-management.

Responsible Decision-Making Skills will play an essential role in this portion of the instructional cycle. Students will develop a sense of civic duty and social justice and understand the necessary character traits, such as leadership, confidence and investment, needed to play a role in the positive uplifting of the greater community/collective voice.

Instructional and Cultural Pedagogy. Students will return to their original goals and outcomes selected during the initial phase of the project and coordinate the distribution of their solutions for further consideration within the school and outside with the greater community as appropriate. This communication and presentation of findings as well as recommendations for improvement will require students to apply the knowledge they have gained across the project to culminate in a relevant and impactful solution. They will also develop important oral and written language skills as they engage in the process.

Constructive feedback will be provided from peers as well as school and community experts throughout the iterative design-thinking process thus resulting in deeper levels of reflection on the part of the student. A project conclusion synthesis will drive students to understand the value of constructive feedback from the perspective of

the project specific focus but also from the process tools utilized independently as well as collaboratively for student teams.

Instructional Strategie. This phase of the learning will focus on the following:

- Presentation of findings and recommended solutions. For example, to expand upon the previous section, students could present their solution to representatives of the Dallas Housing Authority regarding "Fish Trap Lake". Ideally, the Dallas Housing Authority would provide feedback on their solution providing the opportunity for students to continue working on the problem with the community. Participation would afford opportunities for:
    - High quality content presented for constructive feedback and consideration based on the student's learning style and best method of communication (i.e. outcome menus with various options for presentations including videos, prototypes builds, storyboarding, formal pitches, multi model technology sources)
    - Professional behaviors when presenting to school and community groups (i.e. dress, voice, business etiquette)

  Relatedly, if students access a makerspace with high-tech tools, they could conceivably create high-resolution prototypes in support of this process.

- Integration of thought-provoking perspectives on the social justice, volunteerism and/or altruism aspects of the final presentation which highlight the following:
    - Constructive choices about personal behavior and social interactions based on ethical standards, safety concerns, and social norms.
    - Evaluation of consequences of various actions, and a consideration of the well-being of oneself and others.

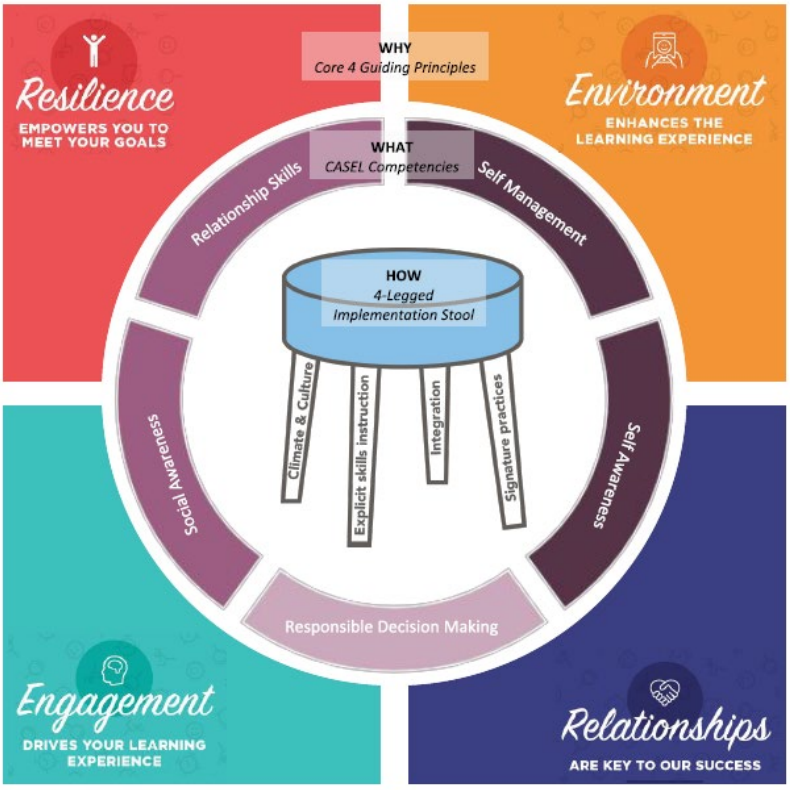
Social and Emotional Learning

The WDSS partnership sees social and emotional learning as inextricable from academic learning; cognitive and "non-cognitive" and social or "soft" skills are key components not only of college and career readiness but of long term psychological well-being and robust contributory citizenship. The proposed instructional approach, described above, attends to field-standard SEL domains (see, Collaborative for Academic, Social and Emotional Learning, CASEL) by considering a wide range of critical thinking and other skills alongside acquisition of content knowledge and skills. The approach will further consider SEL skills of adults and students by carefully attending to how the overall climate and culture of the school setting facilitates SEL growth. The WDSS approach to SEL will align to DallasISD's strategic SEL framework (see Figure Four), and project partners will coordinate closely with key members of DallasISD's SEL leadership teams.

We are taking the view of SEL further: the WDSS will not narrow SEL to a supplemental set of lessons distinct from academic learning. Nor will the school relegate SEL to supplemental out of school time activities. SEL learning objectives are integrated into STEM-focused PBL units. Additionally, the WDSS partnership is learning from local SEL leaders including DallasISD's SEL team, the PSELI initiative (Wallace Foundation, Big Thought, Dallas Afterschool, Dallas Parks and Recreation), Momentous Institute, and SMU Simmons's Department of Dispute Resolution and Counseling. Through these strategic collaborations we envision an approach to SEL where:

- SEL theory and practice will be embedded into the overall instructional experience.
- SEL learning will be linked to the project and/or place-based approach to learning, equipping students to apply these skills in their local context and beyond.
- Student SEL growth will be woven into PDSA cycles for improvement.
- SEL skills for adults in the ecosystem will also be considered and cultivated.
- In-school teachers and out-of-school providers will collaborate to support school-wide SEL goals.

Figure Five: DallasISD SEL Framework



School Counseling

In addition, the WDSS partnership conceptualizes this comprehensive approach to SEL as complementary to a strong school counseling model where counseling and mental health are approached from a prevention and health-promotion lens and where the needs of students, families and teachers are collectively considered. The school counseling program will be an integral part of the school curriculum, and school counselors use different counseling modalities to fully develop the academic, career, and social/emotional abilities of all students on the campus. In leadership and advocacy roles described in the Texas Model for Comprehensive School Counseling Programs (2018) and the American School Counselor Association National Model (2019), the school counselors define, manage, deliver, and assess the school counseling program making sure that students are obtaining important knowledge and skills useful to them now and in their future lives.

The partnership is also exploring unique opportunities afforded by partnerships with local non-profits, leveraging the social sector's expertise in SEL, mental health and counseling to meet WDSS needs.

Family and Community Engagement

Family and community engagement are cornerstones of the vision for the WDSS school. A community-embedded, place-based lens has served (and will continue to serve) as an anchor for the partnership's co-design work. Acknowledging inconsistencies and ruptures of trust between local government agencies, including DallasISD, and the West Dallas community over time, the partnership has worked to more fully engage community members as critical fourth partners in the design and planning work.

Engaging and Inviting School Culture

The school culture will be one that welcomes families and community members as active and valued members of the school's overall ecosystem. The enacted culture empowers families and community members to have a strong and shared sense of ownership for positive student outcomes through authentic engagement opportunities from the current planning phase and into the life of the school. Traditional avenues for parent engagement (PTA and SBDM for example) will be augmented by a wide range of flexible and innovative pathways that include dual-generation learning opportunities, participatory research and parent representation on WDSS advisory boards.

Community Partnerships

A key feature of the proposed school is strategic collaboration with the nonprofit sector to provide co-located or nearby wraparound social services that will directly support PreK-8 students, families, school staff, and the broader community. A portion of the grant made to SMU by Toyota has been sub-granted to a pilot cohort of six nonprofit organizations with additional cohorts planned in 2020 and 2021. Cohorts are engaged in planning and capacity building work in areas that include: learning West Dallas history and context, community cultural wealth, building collaborative culture, and continuous improvement.

The types of services local non-profits may provide include: summer and afterschool programming and enrichment for students, dual generation programs, mentoring, social and emotional learning opportunities, mental health, a grocery store, nutrition and other health and wellness supports, legal aid and immigration services, leadership development, financial empowerment, and workforce development. In collaboration with DallasISD, decisions will be made about which non-profits will be vendors of the PreK-8 school, directly serving the student population.

This model for in and out of school collaboration is innovative. In keeping with the WDSS value-orientation to co-design and equity, non-profits will individually and collectively include community and family voice in decision-

making about programs and services to ensure they are aligned with community priorities and vision. WDSS will disrupt the status quo approach; it is already establishing a new model by designing systems and infrastructure to support authentic collaboration and shared continuous improvement that spans the typical boundaries that separate in and out of school learning environments. Following a framework for a full-service community school, our proposed features include:

- Physical space in the building to house non-profit operations
- Requested autonomies to allow for
    - site-based coordination of in and out of school services along with family and community engagement
    - flexible usage of non-profit providers' time to cover typical school day hours, freeing up time for teacher collaborating and planning
- Digital data sharing systems so that non-profit partners are fully equipped to meet student needs
- Robust collaboration with existing out of school (OST) leaders including Dallas City of Learning, Dallas Afterschool and The School Zone

Example: A Family Experiences Wraparound Services in the WDSS

A grade level staff meeting for the WDSS includes the principal, teachers, non-profit service providers, the director of the specialized SMU counseling center, the WDSS wraparound site coordinator, representatives from each co-located nonprofit, and other school staff. The principal shares that a new student will be joining the school. The principal met the new student's mom, Mrs. Garcia, when the Wraparound Coordinator invited Mrs. Garcia to the school for a visit.

The principal and wraparound coordinator shared key information that would mobilize the school's ability to suppor this student's transition; Mrs. Garcia is currently unemployed and taking care of a toddler. Mr. Garcia works long hours Monday through Saturday to provide for the family which migrated to the US shortly after their oldest son was born. Their children qualify for free and reduced lunch, and the family currently receives government assistance. Mr. Garcia's employer does not provide medical, dental, nor vision insurance. Mr. Garcia is bilingual in English and Spanish, and Ms. Garcia is monolingual in Spanish. They communicate as a family in Spanish. Mr. and Mrs. Garcia's greatest hope is that their children will experience the many benefits of an education in the U.S. while continuing to value and identify with their rich cultural heritage.

During the staff meeting, the wraparound coordinator reviews the welcoming plan for new students and families. The plan includes inviting Mrs. Garcia and her toddler to join her oldest son on his first day of school so they can get acclimated with the programs and services in the WDSS, especially those provided by the co-located non-profits. The plan includes the following: the wraparound site coordinator works with Ms. Garcia and the medical team at a Youth and Family Center (YFC) and Parkland Clinic at Pinkston High School (a nearby service provider with the WDSS) to make appointments for family and complete a physical for their oldest son. Since the family only has one vehicle, which Mr. Garcia uses for work, the Youth and Family Center shuttle which runs once a week between the WDSS and Pinkston High School transports the family and others to their appointment. When they arrive, the Parkland Financial Counselor helps Mrs. Garcia sign up for a health plan for herself, which allows her to have an affordable co-pay if she needs to go to the hospital and pay a reduces rate of $15 for the Parkland Clinic at (YFC). The financial counselor also enrolled Mrs. Garcia's children with Medicaid.

On their son's first day of school, Mr. Garcia drops his wife, oldest son, and toddler off in the Community Center corridor of the WDSS which is open early. The family is checked in and greeted in Spanish by the wraparound coordinator. A program coordinator from one of the co-located non-profits, a dual-generation early childhood program operating in the school, and a 7th-grade student ambassador also meet the family. The student ambassador invites his new classmate to tour the school, meet some of his friends, and talk about what their day will look like.

Together, the wraparound coordinator and program coordinator discuss with Mrs. Garcia her oldest son's schedule for the semester, and they walk with her to a learning space being utilized that morning by the dual-generation non-profit. There she meets other moms in the program – all monolingual in Spanish or bilingual in Spanish and English –

as they prepare for their mom and child class. At the end of the class, Mrs. Garcia and the other moms sit in the lounge, have coffee, provide updates on upcoming events and discuss ways they participate in the school. Before Mrs. Garcia leaves for the day, she meets with the wraparound coordinator once more to learn about the range of services provided in and around the school. The coordinator encourages her and her family to reach out to her as needed and review the School + Community Resource Guide, which includes a map of all the services and programs in the community. Last, Mrs. Garcia sets up an appointment with the WDSS Research Coordinator who will meet with her in the coming days to talk with her about what research is like in the school, and what it would mean for her to consent to have her son participate in some studies.

While Mrs. Garcia is building new relationships with other moms, her oldest son is off to a great start. One of his teachers greets him with a backpack that includes his supplies and key resources for 7th grade. As they walk to their first class, they stop by the school's general store. The student ambassador shares that this is where he comes to get supplies he needs. All items are free, and 7th and 8th grade students volunteer 5 hours a semester in the store to learn about food (in)security, food web, customer service, food distribution, and human dignity to support learning in their classes and support the operations of the store.

The student ambassador checks in with his new classmate throughout the day. During science class, their teacher talks with students about Family STEM Night coming up at the end of the month and reminds students they will be describing and discussing the Fish Trap Lake project with their parents which will be featured on Family STEM night. The teacher also reminds the class that students in the afterschool STEM programs will have extra time during their breaks throughout the day and afterschool to work on their projects with afterschool program staff.

While Mrs. Garcia's son transitions into the school well, he does experience some early challenges which the wraparound site coordinator, nonprofit program staff, and school staff discuss during their bi-weekly student support meeting. Together, they develop a wraparound family empowerment plan which addresses their oldest son's reading difficulty, need for immigration support, ongoing participation in the dual-generation early childhood program, and counseling. The team does not finalize all aspects of the plan as they want it to reflect, over time, a vision statement co-created by Mr. and Mrs. Garcia for their family-an experience in which all WDSS families participate.

Building Design

The West Dallas STEM School will be located at the current 7-12th grade Pinkston High School. Simultaneous to construction on the new Pinkston High School – and supported by $35 million in bond money—renovations will be made to transform the existing Pinkston building into a state of the art STEM school and community center. The site is uniquely large, allowing for a wide range of ideas and offerings to come to fruition.

Vision. The physical environment will support the learning objectives of the school. For example, physical spaces will be structured to provide flexible settings for state of the art learning experieces and interaction. Each space will be significant for the learning process as common spaces will allow the gathering of people to learn from an "expert" in the field; individual private space for individuals to think, reflect and transform learning from external knowledge to internal belief; and community space in which informal space encourages peers to share information and discoveries, acting both as learner and teacher simultaneously. The intentional use of space will foster a STEM mindset to use the areas as incubators for ideas as well as promote a sense of shared culture. Technology will ensure that all students have resources to create and share their solutions as both a part of the learning process as well as a way to demonstrate the outcome of the learning unit. https://files.eric.ed.gov/fulltext/EJ1015175.pdf

The Building Design Process. DallasISD contracted VAI Architects to design the WDSS. Over the past several months, multiple meetings and input sessions have been hosted and have included multiple DISD staff, West Dallas community members, feeder pattern executive directors and principals, SMU and Toyota. Project partners have visited multiple exemplar sites to spark ideas about how physical spaces can support instructional goals. Going in to 2020 and led by the school principal, additional design charrettes and community input sessions will be hosted.

STEM Learning Environment. Central to building design efforts has been emphasis on STEM learning which requires integration of furniture, technology, and equipment in flexible teaching and learning spaces. Close attention will be paid to dedicated versus multi-use spaces. Some spaces will allow for flexible configuration so that a single space can be switched from demonstration mode to training mode to project mode to spaces for co-creation and collaboration (e.g., group desks or lab stations) depending on the activity. Other spaces may may require special use features such as robotics labs, media and content creation labs, and maker spaces. Sustainability features such as solar panels and creative use of outdoor courtyards as outdoor learning labs will all contribute to the instructional goals of the school.

West Dallas Context. A key feature of the WDSS is that it is embedded in the West Dallas community. Efforts to incorporate and acknowledge the importance of *place* have emerged in the building design process by the explicit inclusion of community members' perspectives early in design conversations. One example of a tangible expression of West Dallas is a planned interactive map of West Dallas that will function as a mural on a prominent wall of the school as well as a learning opportunity where students can engage with key facts and figures and where teachers can embed and expand on lessons. Given the rapid gentrification taking place in the West Dallas area, these aspects of the school are seen as a critical act of preservation.

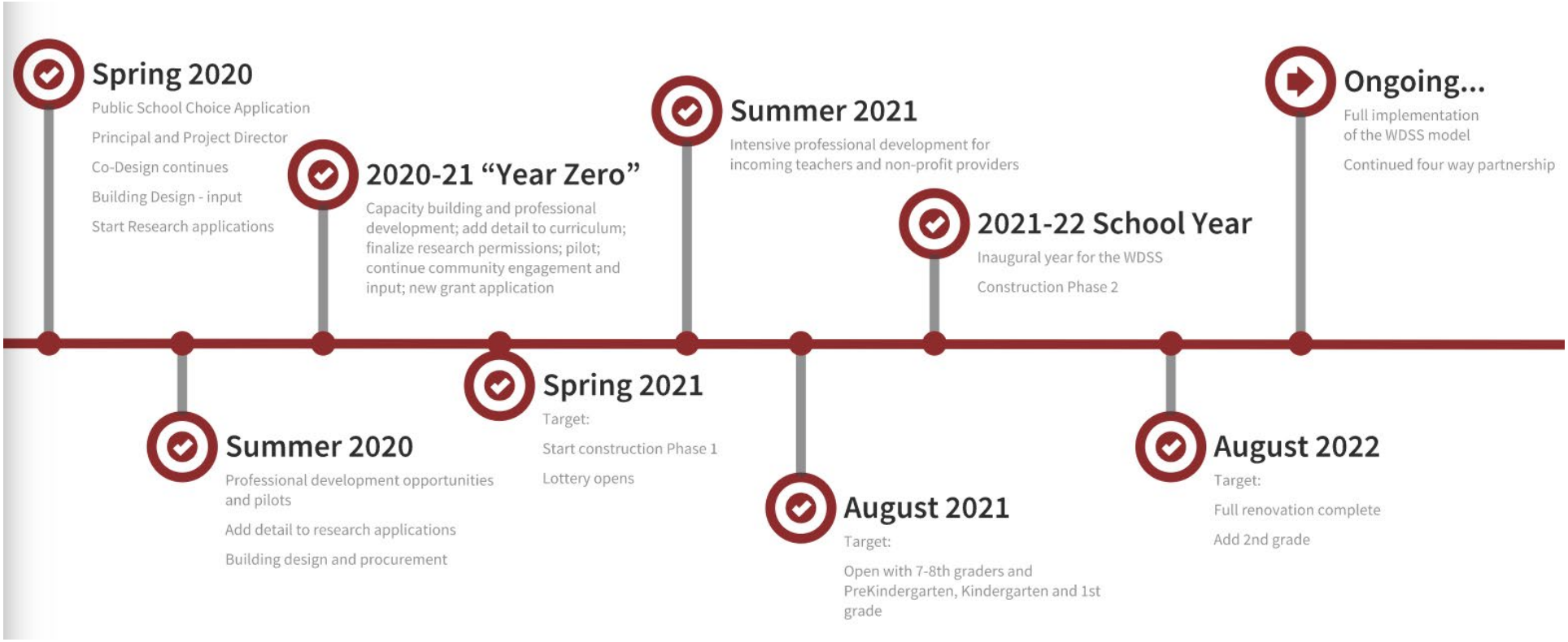
Early Childhood. Acknowledging the unique needs of the youngest learners, the building design process has also taken into account design needs for 3 and 4 year olds who will attend the WDSS. This has included considerations such as: how far young students will have to walk through a large building, identifying separate pick-up and drop-off spaces for younger and older students, and thoughtful accommodations that increase the likelihood that families with very small children will spend time in the school engaged in activities with their older children (for example, play spaces and diaper changing stations).

Physical Space to Support Family and Community Engagement. Demonstrating the full commitment to family and community engagement, the school building itself will house physical space specifically designed for families and community partners. Dedicated areas will be designed to accommodate younger children and be spacious enough for parents to spend time in the school building, whether it is to wait to visit with school personnel, volunteer at the school or visit and network with other families. Family areas may include spaces for volunteers to work on a school-related project or event and basic necessities like a sink, refrigerator, restroom, and changing tables. These building features encourage families to stay physically present at the school and may help accommodate participation during a wide range of before, during, and after school hours.

Counseling Services. Again reflecting the commitment to a full-service model, the partnership is exploring the possibility of on-site counseling services. Through a strategic partnership with SMU's Counseling department, and working in close collaboration with DISD's school counseling and mental health services the center would provide youth and family counseling to augment school counseling offerings. The center would serve students in the PreK-8 STEM school as well as be open to the surrounding community and indeed more broadly available to DISD students and families. The site would also development of new counseling professionals by being an applied learning and internship site.

Timeline

The West Dallas STEM School is slated to open in August of 2021. See Appendix E for the proposed "roll out" plan which will have 7-8th graders and PreK, Kindergarten and First graders being the inaugural cohorts for the school. Additionally, a timeline depicting WDSS activities leading up to the school opening is provided below; this outlines the major tasks and activities in which the partnership will continue to be engaged.



Staff Capacity and Teacher Preparation

Staff Capacity

School principal. A key factor in staff capacity and our ability to deliver on the promises of this vision is DallasISD's commitment to hire the WDSS principal early. The position for the WDSS principal was posted in December 2019 with a target to hire in January 2020. The job description, which was collaboratively developed with input from all project partners, is provided in Appendix F. Having this leader at the helm of the planning work, overseeing and executing the vision, and collaborating with all project partners is an essential ingredient, and one that will be a defining characteristic of the replicable model we are developing and documenting.

Teacher capacity. Based largely on the vision developed in this application, and in close collaboration with the new principal, the Distributed Leadership team will develop a **profile of teachers** that will guide recruiting and hiring decisions for the school, in line with DallasISD's standard practices.

In anticipation of that, there are several foundational aspects of teacher characteristics and capacity that we envision for the WDSS: 1) all staff must possess a learning orientation, 2) there must be some more expert or experienced staff to support the learning of less experienced staff, 3) staff will need expertise in collaboration and continuous improvement. To this end, we will need at least one member of the leadership team with considerable expertise in continuous improvement, willing and able to grow others' expertise in continuous improvement.

Drawing on Toyota's expertise in continuous improvement and the Carnegie Foundation's work in bringing continuous improvement into education, as described above, continuous improvement will be central to the school's culture and climate. Central to continuous improvement is an orientation toward learning and improving, and driven by the people on the ground. Assuming that individuals are prepared to learn and improve, continuous improvement will, by definition, continue to build their capacity, and will allow them voice and choice in their learning. Access to expertise greatly enhances and expediates learning. By hiring individuals with a range of expertise or hiring individuals with potential and providing them with strategic learning opportunities, we will ensure sufficient expertise to facilitate ongoing learning. Areas of particular need for expertise include integrated STEM, project-based learning, educating emerging bilinguals, literacy, special education and continuous improvement in education.

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As mentioned above, we intend for WDSS to be a national model, attracting scholars and practitioners seeking to understand innovative, effective, and equitable STEM learning environments. A national model for innovative and equitable STEM learning environments requires a pool of teachers and school leaders who are prepared to work in such schools. For inservice teachers and school leaders at the WDSS, this learning will occur on the job. We imagine that teachers and school leaders will stay at the WDSS for a number of years but will also then move on to share their expertise at other local schools. This diffusion of expertise would support the growth of other schools in the district. Inservice teachers and school leaders at other schools will have opportunities to visit the WDSS STEM school and authentically engage with teaching and leading in innovative, effective and equitable ways.

Teacher, School Leader and Non-Profit Provider Pipeline

A key feature of the WDSS is the partnership around teacher preparation. This work is closely tied to 1) the intention for the WDSS to be a learning and demonstration site, where exemplary teaching practices are practiced, developed, studied and shared and 2) innovative proposals for research permissions that empower teachers to be true scientist-practitioners, conducting action research projects as part of ongoing PDSA and continuous improvement work in the school. Over time, we intend for WDSS to be a national model, attracting scholars and practitioners seeking to understand innovative, effective, and equitable STEM learning environments.

Key to the intention for replication, SMU Simmons is committed to preparing teachers, school leaders and non-profit providers who can serve in the WDSS itself as well as in similar schools. Simmons' own approach to pre-service teacher and leader preparation is being a refined partnership with the school itself to help ensure that a pipeline of innovative, effective and equitable educators is being developed. A critical component of this work will be mediated field experiences. A mediated field experience is a university course, embedded in a PK-12 setting, with a university faculty member as well as K-12 teachers or leaders providing guidance for the apprentice teachers or leaders. Within mediated field experiences, apprentice teachers or leaders have opportunities to learn about educational theories or practices with university faculty and then immediately observe or enact such theories or practices with K-12 students or teachers and inservice teachers or leaders.

Example: Teacher Preparation – Mediated Field Experience

An apprentice teacher is enrolled in a course that meets at the WDSS two days a week. On Tuesday, she and her classmates divided up and visited 8th grade social studies classrooms where WDSS teachers were introducing a lesson on the American political system that begins with an examination of data from an news story and leads to a productive small and larger group class discussion of the story and related data, wondering and brainstorming session about helpers within the local community. Apprentice teachers have been learning about ways teachers support productive discussion so they were tasked with noticing strategies that the experienced teachers employed to lead their students to the productive discussion. Immediately following those observations, the apprentice teachers, the experienced teachers, and the university faculty member met during to discuss the strategies they observed and allow the apprentice teachers to ask questions and seek clarity about the decisions that the experienced teachers made just moments ago during the lesson. This process of observing, assisting, and debriefing provides an opportunity for the apprentice teachers to unpack the thought processes of the experienced teachers, and it also provides the experienced teachers the opportunity to reflect on their teaching practice.

In addition to financial support, SMU will work closely with DallasISD to provide:

- Flexible and highly accessible coursework, including providing courses on campus for students, including mediated field experiences for apprentice teachers and school leaders during school hours and in after-school settings.
- Differentiated work assignments for mentor teachers and leveraging mentor teachers in innovative residency programs.
- SMU clinical and research faculty "job-sharing" with classroom teachers.
- Learning opportunities designed to develop teachers' capacity to consistently provide high quality learning experiences for students across the curriculum.
- Learning communities consisting of in and out of school time education professionals that mutually support their development and the development of students and families.

- Opportunities for educators and university teacher educators to jointly develop school staff and apprentice teachers, school leaders.
- Creative leveraging of non-profit partners to create collaborative and planning time for teachers.
- Support for completion of action research projects and dissemination and publication of findings.
- Robust use of a shared data system to support teacher monitoring of student needs and growth.
- Flexible fundraising to support intensive summer learning opportunities and ongoing professional development.

Research, Evaluation and Assessment

A Research Practice Partnership

While a traditional research-practice partnership (RPP) is typically a strategic collaboration between a school district and a university-based research partner, the West Dallas STEM School partnership adds community and industry partners into this key collaborative while maintaining the characteristics of RPPs. In close alignment to the WDSS value-orientation for equity, RPPs position researchers and practitioners as co-equal partners in the work, both contributing different yet equally valid expertise. RPPs purposefully disrupt hierarchical valuing of knowledge, where experts' or "ivory tower" knowledge has traditionally been considered more valuable than classroom teachers, school leaders, district professionals, students and parents. Importantly, in RPPs, research questions are derived from real-world settings, often generated from teachers and school leaders themselves; over time, as the research capacity and trust in the process grows, researchers will also recommend research questions to be asked and answered. Additional frameworks that align to this anchoring value that will be used in a variety of ways include "MEL" models where evaluative data are utilized for *m*onitoring, *e*valuation and *l*earning; Empowerment Evaluation, Design-Based Implementation Research, community-based participatory action research, and teacher-led action research.

A replicable model. The proposed research-practice partnership has some characteristics of traditional evaluation (determining if an intervention has its intended impact) and traditional research (theory-driven investigations of key research questions). However, just like the approach to STEM learning and wraparound services, work in the research space for the WDSS is also purposefully innovative and transformative. A cornerstone of the work is developing a replicable model; this encompasses the process by which partners are co-designing the school itself. It also includes a systematic documentation of the key compoents of the WDSS and its resultant outcomes for multiple stakeholders, the most important group being students themselves. We will be utilizing a number of approaches to determine *that* the model is effective by conducting longitudinal and collaborative outcome evaluation on whether college and career asiprations for WDSS have been achieved, and to what degree. Adjacent to these threads of work, robust and mixed-methods process evaluation and key research studies will explore and document how these intended outcomes emerge. The combination of these methods into a coherent approach to monitoring evaluating and learning will tell us about effectiveness *for whom, under what conditions.* Going well beyond a demonstration of outcomes alone, generating of this kind of actionable knowledge is critical not only for improvement but for replication and ultimately for being able to scale equitable outcomes.

Innovations in research, evaluation and assessment methodologies. The vision for the WDSS and specifically for the partnership between DallasISD and SMU is that research, evaluation and assessment will be a key compoenent of the learning ecosystem and will all "braid" together to support the continuous improvement. This will both draw upon traditional methods and skills in research, in evaluation and in assessment; it will invite us to purposefully blur those lines in service of rapid, continuous learning and improvement. It will also invite us to utilize available data in a myriad of ways.

For example, a team of WDSS teachers, non-profit providers and SMU faculty may work together on cyclical, action-oriented investigations that will utilize rapid assessments of proximal student learning to determine what scaffolds for achievement a given student may need. Evaluators may pull that same assessment data a teacher is looking at for an individual student, link it to out-of-school time data and determine whether participation in social services or summer programming is contributing to change in these metrics, and if so, how. The principal may request an aggregate look at that same assessment data for a targeted a grade level or cohort to include in an upcoming collaborative planning session with teacher. That report may go to DallasISD, to funders and other stakehodlers; a SMU professor may use it in a course to provide teachers in a Master's program with a real-world, applied example of how to utilize assessment data to drive instructional decisions. A researcher may take the same data again and use it to triangulate or validate another new measure of learning.

Approach to research approvals. WDSS partners will be working closely with DallasISD's Research Review Board and other Assessment and Evaluation leaders to refine current research processes and protocols to support this undertaking by making requests and data sharing more streamlined and efficient for all involved partners. SMU will develop applications to SMU's Institutional Review Board (IRB) and to DallasISD's Research Review Board (RRB) in order to obtain proper permissions to conduct research in the PreK-8 STEM school and with participating non-profits. Appropriate data sharing agreements and MOUs will be developed to support the aims of the work; for example, SMU evaluators and researchers will coordinate to synthesize research and data requests in order to avoid duplicate requests and funnel them through specific approval channels within DISD. An important consideration for this unique research proposal will be the ability for SMU and DISD personnel to collaborate as investigators on research projects, co-apply for grants, and incorporate research and evaluation activities into ongoing professional development and SMU-related coursework. A robust yet feasible consent process is being developed so that all participants are appropriately informed and can opt out of aspects of proposed research that may fall outside of business-as-usual in educational settings. An omnibus proposal for comprehensive evaluation will be supplemented over time by proposals for specific research studies.

A WDSS research review team. Critical to the vision of this Research Practice Partnership is the development of a research review team specific to the WDSS that will work in conjunction with existing review boards at SMU (IRB) and DallasISD (RRB). The team will continue to reflect the partnership's commitment to co-design, equitable collaboration in key decision-making and even participatory action research by consisting of the school principal, teacher, parents, non-profit representatives, SMU faculty and staff, and other stakeholders. We envision that a Research Coordinator, deeply embedded in the work of the school, will lead this team and coordinate all logistics. The team will regularly review incoming proposed research projects and will use a rubric to ask and answer questions such as;

- How will the proposed research benefit the West Dallas STEM School and surrounding community?
- How does the proposed research align to DallasISD's strategic goals?
- Does the proposed research align to the school's vision for equity by incorporating strategies and processes that are respectful to the dignity, legacy and history of West Dallas?
- What pressing question(s) in the field will this reseach help answer?
- How does the research fit with or complement existing work—research, action research, evaluation, etc.—being conducted at the school?
- What time commitment is required of teachers, students, parents, or non-profit staff who participate?
- Will the study require any undue burden or inappropriate disruption of learning?

The WDSS research review team will help ensure that research and evaluation findings are regularly shared back with the school and will have a strong role in shaping ongoing evaluation work related to the school. However, their primary purpose will be to make recommendations about specific research studies. Whether these studies are then conducted will be determined by approvals from SMU's IRB and ultimately by DallasISD's RRB and the school principal themselves who will retain the authority to decide which studies take place on the campus.

Connections to PDSA and continuous improvement. We envision an approach that is entirely compatible with a learning ecosystem that continuously improves. For instance, rapid provision of actionable data about student

learning will be a key component of the PDSA cycles that characterize this proposed learning ecosystem (see also, examples of applied PDSA cycles elsewhere in this document). All research, evaluation and assessment, all data collection activities, and all reporting and publishing goals will align to the central learning orientation of this model which is *continuous improvement* and ongoing learning for all members of the ecosystem.

Research

Key to the proposed model for the WDSS is that it serve as an exemplar site for district-university collaborations on research. SMU faculty and staff involved in the WDSS have reviewed and/or have been directly involved in establishing exemplar university-school district collaborations across the country. We have strived to bring these national best practices into the vision for the WDSS, while adapting those models to fit the local context. Alongside proposed and ongoing evaluation work for the school, Simmons' and other SMU faculty will propose specific research studies related to student learning, teacher preparation, community engagement and partnerships, to name a few. An example, below, highlights the vision for how research could be embedded in the daily experience at WDSS and further, how the findings would be brought back to multiple WDSS stakeholders to support ongoing learning.

Example: Research in the West Dallas STEM School

A WDSS Research Coordinator who has been working closely with the principal and other partners has connected a newly approved SMU faculty researcher with a group of 2nd Grade teachers whose classes will participate in a 6-month study. The study will investigate the effect of teachers using verbal protocols in class before asking students to solve increasingly complex mathematics problems. The researcher has had the study approved by a review team consisting of West Dallas STEM School stakeholders as well as SMU's IRB and DallasISD's RRB. The researcher has likely already met many of the 2nd Grade teachers, some of whom may be completing Masters' work at SMU; both the teachers and the principal are enthusiastic about the study, curious about the outcomes, and committed to testing the hypothesis. The researcher attends a Grade 2 weekly meeting to introduce herself to the team and answer any questions they have before the study begins next week. The Research Coordinator collected consent forms for this specific study from parents and has indicated which students' parents may have opted out, if any; because parents have already been informed about the aims and scope of proposed research, and because trust in the process has been established, nearly all parents enthusiastically consent for their students to participate in non-burdensome research studies that further our knowledge about how to best support student learning. The Research Coordinator has also identified the best time to conduct the interviews each week, has secured a location within the school that will not disrupt other students and teachers, and has organized data collection supports like audio and video.

Today is now the first day of the study. The researcher has signed into the building and gone straight to the interview room to set up. At the appointed time, they report to the first teacher's classroom to sign out Student A for an interview. The teacher introduces the researcher to the class and explains that they will speak with some of the students today. After signing out the first student, the researcher explains that the child's parents have given them permission to ask some questions about how the student would solve some new mathematics problems, explaining that they do not have to answer any questions that they do not want to answer. She says, "Would you like to work with me today?" To which the child can answer "yes", providing assent or "no." If the child agrees to work with the researcher they commence the interview and then the student returns to class, If the student does not assent, then they are told that is ok and they return to class; the researcher will let them know that whether they want to be in the study or not is just fine and it will not have any effect on their grades in the classroom.

In another classroom down the hall, 5th grade students are completing a science unit on the flow of energy through a food web. A team of researchers has been recording student talk throughout this unit to understand the extent to which group activity features lend themselves to rich discussion and broad participation. Researchers plan to use a

mixture of daily classroom recordings and firsthand observations to code 20-minute segments of student participation by student demographics (such as gender, race, and language), activity type, and response type.

Later that evening, the monthly Site Based Decision Making meeting is held. It is well attended by WDSS parents, local residents, teachers, non-profit staff, SMU and Toyota partners. The meeting is held in a flexible space, where WDSS elementary students are utilizing computers, reading and/or completing homework together in a learning nook while the meeting is going on. Parents have dropped off their young children to stay and play just down the hall with a non-profit that is providing child care for the evening.

At this meeting, a regular agenda item about research taking place in the school is addressed. Here, a representative from the school's own research review team provides updates; they share that the 2nd grade study about math started today, and that the 5th grade study on energy and the food web is continuing as planned. They confirm that several WDSS teachers and a non-profit leader will be co-presenting soon on their action-research projects with SMU faculty at a conference and they distribute an article that has just been published about project-based learning in STEM. Then, the lead from a research team presents their findings on a kinesiology study that just concluded. The team describes how they worked with students in mathematics tested grades to understand the effects of various techniques for lowering student heart rate before an assessment and resulting student assessment performance. Researchers found mixed results based on student age and gender. Teachers, parents, students and stakeholders in attendance ask questions and comment on the study findings. The principal asks a teacher and a SMU faculty member to add this as a discussion item for the next staff collaborative time they will be co-leading, inquiring into how teachers and wrap-around support providers how this new information might inform the development or refinement of change ideas for their current problem of practice.

The meeting moves on to additional agenda items which include: a discussion about the latest evaluation metrics for students; an update from the principal on an upcoming field trip for students to an industry partner's home office; a Pinkston High School student who attended WDSS returns to receive accolades for having received multiple offers for college scholarships; a teacher describes a new STEM unit they have developed, and a non-profit leader provides an update on a housing policy being debated by city council.

Evaluation

Evaluation metrics and procedures will be developed in close collaboration with DallasISD's Evaluation and Assessment Office, Research Review Board, DallasISD's Office of Transformation and Innovation, and key WDSS stakeholders. SMU's Center on Research and Evaluation (CORE) will use formative, process, and summative evaluation strategies to monitor implementation of key compoenents of the WDSS model, progress toward shared goals, document adaptations, and disseminate relevant findings. Highly compatible with continuous improvement, PDSA approaches and intended research, the aim of the evaluation is in equal parts to **prove** what works about the unique learning system and to **improve** along the way by providing frequent, iterative information needed to inform midcourse corrections. A comprehensive approach to evaluation at the WDSS will be used to understand and share—in various ways—how well the WDSS learning ecosystem is working, for whom, and under what conditions.

The school's mission focuses on achieving equitable outcomes for students and families in West Dallas. Acknowledging that it takes many years to move any one student or cohorts of students through a "cradle to career" pipeline, the WDSS Partnership is taking a necessarily longitudinal view of summative metrics. Indeed the first cohort of students who would attend WDSS as a PreK student in 2021-22 will not graduate from high school

until xx. We intend to monitor and learn from students' long term-trajectories and will additionally rely on multiple proximal indicators to inform us about progress and achievement of goals in the short term,

The approach to evaluation prioritizes and centers student outcomes but also explicitly proposes to collect data from, and measure outcomes for, a range of stakeholders including teachers, non-profits, parents, and indeed the broader community. This means that a robust data collection plan is being developed – multiple data sources from all involved stakeholders will be layered in order to develop an appropriately complex view of the systems of learning and support that make up the WDSS model. See Appendix G for a preliminary data collection plan related only to student-level data. This portion of the data collection plan includes initial orienting evaluation questions, indicators, and key data sources. This is provided as a preview of the types of student data we anticipate using in an omnibus approach to evaluation, one which will be finalized through collaboration and approval by DallasISD.

Assessment

The WDSS will use formative and summative assessments of student learning to support differentiated learning and demonstration of mastery with an emphasis on practical measures and a strong commitment to guard against overburdening students and teachers with unnecessary data collection. The WDSS will use existing assessments currently used across DallasISD and will additionally propose to add appropriate augmented assessments of student learning specific to the instructional strategies and STEM content areas that emerge as core components of the place and project-based curricula.

In addition to assessments that are already employed in Dallas ISD (for example STAAR, CIRCLE, MAP, BAS, TerraNova/Supera, ACP) our assessment approach will include other traditional and alternative measures specific to the unique components of the West Dallas STEM school model (e.g., community engagement, STEM-focused project- and place-based learning, SEL). As such, we will identify, adapt, or create measures that can help capture student, teacher, administrator, parent, and community indicators. Alternative measures will focus on performance-based assessment that measure students' ability to apply the knowledge and skills they have learned (e.g., creating projects and/or conducting their own age-appropriate research). These non-traditional assessments can evaluate complex learning outcomes and allow for real-life application of knowledge and skills. Indeed, one of the benefits of this partnership could be the development of new assessment tools to be used in future replications of this model. Further, a proposed data dashboard (see below) will house assessment data, making actionable and timely information rapidly available to teachers and others working to make rapid iterations to support student learning.

In the absence of existing validated measures, SMU members of the WDSS partnership will work to develop assessments that (1) capture student learning in a range of relevant and developmentally appropriate formats, (2) can be used by educators to understand instructional effectiveness for individual students, (3) are administered at appropriate time intervals, allowing for a timely response by education professionals. These three features of assessments will provide educators with evidence of learning that can be analyzed with iterative PDSA cycles within grade-level teams or for specific student groups who might participate in the same after school program, for example.

Data Collection and Data Infrastructure

Data is a critical resource for supporting research, evaluation and assessment and for specifically supporting the ongoing continuous improvement and PDSA cycles that are a keycomponent of the overall learning WDSS system. As such, strong data collection and infrastructure to be able to collect data from multiple incoming sources, and then rapidly share compliant data will be required.

WDSS is developing the data infrastructure and dashboard including a virtual learning board for teachers that will allow teachers to share real-time learning and will allow project partners appropriate access to actionable data. The Simmons School of Education and Human Development at SMU is supporting a full time IT staffperson to build out the digitial platform that will house this critical resource for the school. The dashboard will give teachers and school leaders access to out-of-school data that they typically do not have, and vice versa, out-of-school providers will have access to information about student's in-school experiences that is typically difficult to access. The combination of these data would allow district and civic leaders, non-profits, researchers and policy-makers to understand how the in and out of school settings combine to support learning and long-term outcomes. Community and industry partners will learn about community-wide implications for these kinds of strategic partnerships. Additionally, augemented assessments of student learning above and beyond what DallasISD regularly collects would be made available to support classroom instruction (for example, data collected as part of a research study would also be available to teachers).

Sustainability

The West Dallas STEM School partnership conceptualizes sustainability in two key ways. First, we are considering sustainability in terms of our ability to ensure high integrity of (not just fidelity of) implementation, long term. The research and evaluation focus of the school is inextricable from this commitment to sustained, high quality implementation. As described above, formative, process and summative evaluation strategies will all be employed, and will be anchored in the school's overall orientation to the principles of *continuous improvement*. In this view, sustainability to execute the aims of the partnership is inextricably tied to continuous monitoring of implementation integrity, adaptation and mid-course corrections, and continuous, incremental improvements.

Second, we are considering sustainability in terms of being able to financially support augmented services above and beyond DISD "business as usual." Some services and activities being proposed for the school fall outside of the scope of DallasISD's funding. For example, some wraparound or social services or some supplemental research endeavors may warrant additional funding from external sources. A Sustainability and Finance team representing SMU, Toyota and the DallasISD Foundation is developing a long-range plan that will prioritize funding needs for the entire project and will leverage private and corporate giving to support publicly available funds. This team is actively learning from varied fundraising strategies such as having an affiliated non-profit associated with the school. Over time, this team will work collaboratively with STEM school leadership and parent organizations to prioritize and solicit funds. Additionally, SMU research faculty and staff are actively applying for research grants to further support data infrastructure, analysis and dissemination aims.

Autonomies

Specific autonomies will continue to emerge in the coming 18 months of ongoing planning, prior to the school's slated opening in August 2021. Substantive ongoing co-design will be led by the incoming school principal and all design teams and partners will continue to be engaged.

While the below represents neither a comprehensive nor final listing of requested autonomies, we are providing an initial look at the types of autonomies we believe to be critical to supporting the vision of the West Dallas STEM School. We characterize these autonomies as critical supports for implementation – without them, the full vision for the partnership cannot be realized.

One overarching request is that the WDSS be initially organized into two separate and new campus ID numbers – one for PreK-6 Transformation and another for 7-8 Innovation. Additional autonomies fall in to three main categories, each of which overlap with the other. They are; staffing, schedule, and research (see Figure Three).

Autonomies related to staffing.

Figure Three: Autonomies to Support WDSS Vision

Given the unique partnerships that define this work, creative collaboration will be supported by autonomies related to staffing. Largely conceptualized as "job sharing" – creative thinking about how to leverage partners' skills and services flexibly throughout the school day will be a critical support for implementation, especially for the continuous learning and PDSA framework that is critical to this school's model.

We will work hand in hand with DISD to ensure that the proposed autonomies complement existing DISD frameworks like the Teacher Excellence Initiative (TEI) and all applicable state law.

Strategic staffing decisions that will leverage the resources of the partnership including creative use of non-profit, university and industry staff in the school building, allowing teachers freedom to engage in collaborative planning. A common need cited by teachers and researchers alike is a persistent lack of time for planning and collaborating with colleagues –and yet this is key to highly successful school environments and student learning. The WDSS partnership is uniquely suited to support additional collaborative time. For example, these autonomies could include:

- Inviting non-profit vendors to provide regularly scheduled, instructionally aligned programming to students during regular school hours.
- Inviting non-profit partners (especially after and summer school providers) into the school as staff members, collaborating alongside teachers and parents, attending faculty meetings, participating in PLCS and working hand in hand through PDSA cycles that support student learning.
- Inviting industry partners to similarly provide special programming, career days, and other aligned programs during regular school hours.
- Inviting SMU professors co-teach with WDSS teachers; this arrangement will allow for "on the job" learning and modeling opportunities for teachers and professors alike, and can further free up teacher time for collaboration and planning with colleagues.
- Including in WDSS teachers' regular duties expectations for, and support for, participation in action research projects and dissemination of findings (for example, conference presentations).
- Developing a pool of substitute teachers from non-profit, industry and university settings to be able to be called on when WDSS teachers have planned or unplanned absences.

- Flexible application of stipends and other incentives (like scholarships) for teachers and school leaders; allow teachers to draw on partnership resources to further their educational and development aims.
- Configuring staff expectations to support mentor teachers and teaching residencies.

In addition to time for planning and collaboration, we will seek autonomies that will support teachers' research-related and degree-seeking activities that are not typically part of a teacher's day. This invites a reconceptualization of job duties to include –and indeed to encourage—continuous improvement and research activities as part and parcel of the day's work. It presents an opportunity for teachers to earn advanced degrees alongside their daily teaching duties.

Particularly in support of the wraparound and social service aspects of the full service community school, we will encourage autonomies in staffing that directly support the full service community aspects of the school. These will represent a meaningful expansion of a principal's typical duties and expanded or re-configured staffing such that a point person, under the supervision of the principal, is dedicated to coordinating in and out of school services specifically.

Autonomies related to schedule.

The WDSS believe that learning does not stop at 3:00pm each day nor in May of each school year. We envision a learning environment where in and out of school boundaries are purposefully blurred; neither time of day nor season of the year will dictate when and where learning occurs. This invites autonomies related to when the school building opens and closes (and necessitates related *staffing* autonomies that draw on partners to support the expanded day and to have appropriate physical access to the building).

The WDSS partnership is interested in pursuing an opportunity afforded Texas schools through House Bill 3 to expand the school year by an additional 30 days. These additional days can support goals for equity, helping to bring students who have been under-served additional time and learning experiences. Once again, non-profit, university and industry partners can be leveraged to provide student and teacher learning opportunities during these additional days.

Autonomies related to research.

The research and evaluation aims of this school represent a meaningful departure from "business as usual." As such, specific autonomies will be needed to support the vision. SMU will collaborate with DallasISD's Research Review Board and other appropriate entities to determine what will be feasible. Autonomies in this area will largely fall into two categories. The first represents modifications to existing research protocols to make data sharing and research applications more streamlined and efficient. This may include provisions that allow for: flexible and unobtrusive data collection, lifted restrictions on teachers' ability to conduct research, and/or an expedited review process. The second category relates to prioritizing the WDSS as a site for piloting initiatives and developing a local evidence base that DISD can expand throughout the district. For example; the WDSS may wish to pilot "looping;" keeping one sub-set of students with the same teacher(s) for at least 2 full school years, or teachers may continue with their students through unique summer programming. These opportunities will require both staffing and scheduling autonomies, and will additionally support research opportunities.

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