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PROFESSIONAL LEARNING TRANSFORMATION BY DESIGN:

Implementing a District-Wide, Multi-Tiered Instructional Improvement System to Address Persistent Student Learning Performance Gaps through Developing Teachers' Authentic Data Teaming Capacities

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ABSTRACT

Instructional improvement leaders in many school districts across the United States have become stymied in how to properly address the substantial learning performance deficiencies demonstrated by the growing numbers of diverse, at-risk learners entering their districts and populating their campuses and classrooms. This article examines how one assistant superintendent and her instructional improvement task force colleagues working in a high diversity urban school district employed design research investigative thinking and innovative professional development strategies derived from the education improvement science literature to implement a comprehensive intervention program for educators in elementary and secondary schools throughout the district to revitalize classroom teachers' and their campus-based instructional supervisors' instructional data teaming practices to better serve the academic learning support needs of the district's large numbers of diverse, at-risk students. Key features of the design-based approach to turnaround instructional improvement presented and discussed in this case study report include: 1) leveraging the power of immersive professional learning to provide educators with multiple opportunities to critically examine their own, often ingrained, deficit thinking pedagogical mindsets regarding the motivation levels and learning potentials of at-risk students; and 2) assisting educators in learning how to engage together in authentic data teaming and data analysis-informed differentiated instructional planning to craft high-engagement classroom teaching and learning environments for all diverse learners. A set of design principles derived from the case study is also presented that may be of practical use to instructional improvement leaders working in a variety of school district settings interested in exploring the potential of design-based

intervention methods for addressing the learning development and support needs of diverse, at-risk learners.

KEYWORDS: high diversity school districts; closing the achievement gap; education design research; instructional data teaming

INTRODUCTION

Educators working in K-12 school districts across the United States today are being forced to confront many difficult challenges in providing for the academic learning development and support needs of the increasingly large percentages of diverse learners (i.e., economically disadvantaged, minoritized, and emergent bilingual/immigrant students) populating their elementary and secondary campuses and classrooms. As diverse student sub-population percentages continue to increase in school districts across the country, teachers and their instructional supervisors are finding themselves in the difficult situation of being tasked by district leaders with maintaining high performance accountability ratings for their campuses while also simultaneously working to address the continually widening “academic learning achievement gaps” between the highest performing student groups and the large numbers of diverse, “at-risk” students sitting in their classrooms. The term “achievement gap” is a term that has gained traction in the school improvement literature to describe demonstrable learning performance *differences* between non-minority students and minority students along multiple performance indicators, such as: core content area test performance, grade retention, school holding power, Scholastic Aptitude Test (SAT) scores, matriculation to college, college graduation levels, graduate record exam (GRE) scores, gifted and talented placement, etc. (Valencia, 2015). Unfortunately, many school districts have been historically unsuccessful in effectively addressing these learning performance differences, at least in part due to the perpetuation of inequitable structures (e.g., state-mandated curriculum requirements, instructional programming, funding allocations, discipline protocols) that continue to exist in these districts and negatively impact minority students (Ladson-Billings & Tate, 1995; Theoharis, 2009; Theoharis & Brooks, 2012). Moreover, this “closing the achievement gaps” challenge is often exacerbated by the fact that the demographic profiles of the teaching personnel in many school districts do not always accurately reflect the district’s student population diversity with the result being that there is often a glaring *cultural teaching/learning divide* between many non-minority teachers’ pedagogical mindsets and instructional propensities and the students they are attempting to educate. This state of affairs has contributed to growing frustration among district-level change agent leaders who are at a loss for how to address the persistent diverse student learning performance deficiencies plaguing their districts and provide teachers with meaningful professional development programs that can advance district-wide instructional turnaround and teaching/learning improvement.

One “practitioner-as-researcher” approach to addressing these kinds of intractable learning performance gaps in school districts with growing diverse student populations has emerged in the past two decades in the *education improvement science* literature (McKenney & Reeves, 2012; Plomp &

Nieveen, 2010; van den Akker et al., 2006). The very practical school improvement research methods advocated within this literature focus on encouraging education improvement leaders to adopt *design-based investigative data-analytic thinking practices* and *intervention program development operational strategies* to transform the way they tackle and solve difficult, entrenched teaching and learning problems in their school districts. The design-based school improvement methods and strategies emerging from this education improvement science literature are noteworthy in that they provide instructional improvement leaders working in a variety of school district settings with new ways of analyzing their school district's teaching and learning performance data at both surface- and root-causal levels and developing data analysis-informed intervention programs that can address the professional learning needs of educators who have reached an impasse in being able to meet the learning needs of their students. Anthony Kelly (2010) describes when design research is appropriate in educational settings as follows: "Design research is recommended when the problem facing learning or teaching is substantial and daunting how-to-do guidelines available for addressing the problem are unavailable. Further, a solution to the problem would lead to significant advances in learning or at least a significant reduction in malfunction in the educational system. There should be little agreement on how to proceed to solve the problem, and literature reviews together with an examination of other solutions applied elsewhere (i.e., benchmarking) (should have proven unsatisfactory. Design research is further suggested if prior training or interventions have consistently proven unsuccessful. Design research is often indicated for critical educational goals, even when there is not a clear definition of success, or designing adequate indicators of success is part of the problem. In other words, design research is most appropriate for *open*, or more appropriately, *wicked* problems." (Kelly, 2010, p. 75) This emphasis on the suitability of design research for tackling "wicked" problems in educational practice makes design-based research methods an especially promising approach that school district leaders can choose to employ to redirect their investigative thinking and invigorate their intervention program design efforts to address (and solve) vexing, persistent learning improvement problems in their school districts.

PURPOSE

The purpose of this article is to examine the vexing and persistent "closing the learning gaps for multiple student sub-populations" challenges confronting change agent leaders in highly diverse urban school district settings in providing for the instructional improvement support needs of diverse, "at-risk" student groups. The urban school district case study profiled in this article describes how one urban school district assistant superintendent and her district colleagues working in consultation with the author (a university-based researcher and school district instructional improvement consultant) employed *design-based data analysis methods* and *intervention development strategies* to address the district's "learning gaps" problem. The design-based approach involved assisting district change agent leaders in learning how to collaborate together in two main "design-based school district improvement" investigative activities: 1) engaging together in systematic analyses of their district's disaggregated student learning performance data in conjunction with educator observational and perspectivist data to probe possible underlying root causes of students' learning deficiencies; and then 2) leveraging the results of their

collective data analyses to develop and implement an innovative, district-wide “*multi-tiered instructional improvement system*” *professional development (PD) intervention program* for teams of grade-level teachers and their instructional supervisors at all elementary, middle, and high school campuses in the district. The goal of the PD intervention program was to involve teams of grade-level teachers and their campus-based instructional supervisors in schools throughout the district in: 1) navigating through a series of carefully designed *immersive project-learning experiences* to critically analyze educators’ own deficit thinking pedagogical mindsets and instructional planning practices in regards to addressing the learning support needs of diverse, at-risk students; and 2) exploring how to creatively apply “best practice” knowledge, skills, and strategies found in the current instructional improvement literature to transform teachers’ professional learning and invigorate their team-centered instructional planning and classroom teaching.

RESEARCH METHODS

The school district instructional improvement efforts showcased in this article report employed a specific refined version of education improvement science research methods—the *Design-Based School Improvement Logic Model and Operational Steps Process*—developed by Rick Mintrop (2016). Mintrop’s analytic logic model and operational steps process was utilized by the author, acting in the role of university-based researcher and district improvement consultant, to guide the multi-leveled data analysis work and intervention program development and implementation activities of a team of instructional improvement leaders involved in the urban school district case study profiled and discussed in this article. The seven-step operational process driving the design-based improvement approach involves school district leaders in: 1) generating an initial (*high inference*) Student-Learning Problem rationale statement along with an accompanying intuitive Theory of Action (If/Then) statement that reflects the apparent surface-level student-learning problem(s) currently existing in the school district; 2) conducting an in-depth Exploratory Needs Assessment (ENA) through carefully examining multiple kinds of relevant data to investigate surface-level student-learning problems and underlying root causes of those problems; 3) generating a data-informed and school improvement literature-supported statement of the refined (*low inference*) Problem of Professional Practice existing in the district; 4) identifying multiple contextual factors that could help explain *why* the student-learning performance problems and underlying root causes of those student-learning problems are persisting in the district; 5) conducting reviews of relevant knowledge bases related to the district’s specific instructional improvement problems; 6) generating a refined Theory of Action (If/Then) statement that articulates specific intervention strategies district leaders can implement to realize substantive improvements in teaching and learning performance in the district; and 7) constructing a Change Drivers Diagram and accompanying detailed Intervention Program Implementation Plan that provides a clear operational roadmap for how district leaders will apply key literature-supported intervention strategies to address the identified low-inference Problem of Professional Practice and transform and invigorate educators’ growth-oriented professional learning.

The Design-Based School Improvement Logic Model and Operational Steps Process (Mintrop, 2016) is particularly useful in assisting district-level leaders in learning how to leverage investigative data analysis methods to probe potential underlying root causes of students' persistent learning deficiencies. District leaders can employ the Design-Based School Improvement Operational Steps Process (Mintrop, 2016) to navigate through a series of structured "root causal data analysis" and "problem identification" activities that can inform the subsequent development of "design-based intervention programs" that can address educators' identified content knowledge, instructional planning, and classroom teaching deficits and enhance their team-centered instructional practices. The Mintrop (2016) design-based school district improvement *analytic thinking and multi-step operational process* was used to guide the district-wide instructional intervention efforts of the assistant superintendent and her instructional improvement task force colleagues profiled in the case study presented below.

URBAN SCHOOL DISTRICT CASE STUDY

The case study presented below provides a summary overview of the collective design-based improvement activities completed by a group of change agent leaders in one urban school district in Texas confronting persistent learning performance gaps among its populations of diverse, at-risk students. The case study highlights how these educators worked collaboratively as a district-wide "instructional improvement task force" to carefully analyze their district's available student learning performance data along with multiple observational and perspectivist data associated with educators' instructional planning and classroom teaching practices to probe and identify possible underlying root causes of students' learning deficiencies. The case study then describes how the task force utilized "data analysis-informed design thinking" in conjunction with creative "intervention program development strategies" adapted from the improvement science literature to develop and implement an innovative, district-wide "*multi-tiered instructional improvement system*" *PD intervention program* for teams of grade-level teachers and their instructional supervisors at all elementary, middle, and high school campuses in the district. Process and impact data collected and analyzed during and following the intervention program's implementation phase provided positive evidence regarding how the intervention program was able to revitalize the ways in which the district's campus-based instructional personnel approach and take active ownership in their own ongoing professional learning. Pseudonyms for the school district and key players involved in the design-based instructional improvement efforts are used throughout the case narrative.

Turnaround Instructional Improvement in a High Diversity Urban School District: Developing Teachers' Authentic Data Teaming Capacities through Professional Learning Cultural Transformation

Initial Framing of Beddington-Farnsworth Independent School District's Student-Learning Problem
Marianna Echevarria has been an educator for sixteen years, beginning her professional career as a math teacher in both elementary and middle school settings. For the past nine years she has been serving in leadership roles in Beddington-Farnsworth Independent School District (ISD), first as an assistant principal and then as a principal in multiple elementary campuses in the district. Situated in

a sprawling metroplex region in southeast Texas in the United States, Beddington-Farnsworth ISD serves a diverse student population of approximately 93,000 students, including a large sub-population of immigrant students who speak Spanish as their native language and who are learning English as their “second acquisition” language. As a Hispanic female with an immigrant family history herself, Marianna Echevarria fully understands the value of differentiating instruction in creative ways to meet the academic learning support needs of diverse learners. Moreover, as a campus principal, Marianna Echevarria has long recognized the importance as an instructional leader of providing appropriate professional development and modeling support to teachers on how to instructionally plan in culturally sensitive and linguistically appropriate ways to address the academic learning development needs of second language learners. During her time as a campus leader in Beddington-Farnsworth ISD, Marianna Echevarria—or “Mari” as her educator colleagues affectionately call her—quickly earned a solid reputation in the district as a dedicated campus improvement leader who is passionate about working to ensure the learning success of all students and in proactively supporting teachers in their team planning efforts to design instructional units that can meet the varied learning needs of the diverse learners in their classrooms. Thus, it was no surprise to district stakeholders that the district’s superintendent, Dr. Raymond Hidalgo, tapped Mari Echevarria in July 2022, just prior to the start of the 2022-2023 school year, to serve as Beddington-Farnsworth ISD’s new Assistant Superintendent and Chief Education Officer (CEO) for Innovation and Instructional Improvement.

During initial conversations about the district’s expectations for how she would approach her new administrative role, Dr. Hidalgo clearly laid out to Mari the significant turnaround instructional improvement challenges the district was currently facing (many of which Mari was already quite familiar with, having served as a campus-level instructional leader on multiple campuses in the district) and how coming up with innovative intervention programs to address the district’s continually widening student learning achievement gaps between/among its diverse student populations would be Mari’s primary change agent leadership charge in her new role. Beddington-Farnsworth ISD in recent years has seen an alarming trend of declining student learning performance scores on state-mandated accountability tests across its elementary and secondary campuses, particularly in learning performance indicators for the district’s high-risk student populations (i.e., economically disadvantaged, minoritized, and emergent bilingual/immigrant students). These trends have resulted in overall low performance ratings for Beddington-Farnsworth ISD as a whole on the district-level 2021-2022 Texas Academic Performance Report (TAPR), as well as 2021-2022 TAPR report ratings for individual campuses in the district that fall within the range of “needs assistance” to “needs intervention”. Notably, multi-year State of Texas Assessment of Academic Readiness (STAAR) End-of-Course (EoC) Exams and Texas English Language Proficiency Assessment System (TELPAS) data available for Beddington-Farnsworth ISD provided strong evidence of learning disparities in all of the tested content areas (English/language arts, math, science, and social studies) at the middle and high school campuses and ever-widening learning performance gaps between White and Hispanic students, economically disadvantaged and non-economically disadvantaged students, special education and non-special education students, and native English-speaking and non-native English-speaking

students (i.e., emergent bilingual, English language learners). Indeed, average STAAR learning performance scores in each tested subject area for the district's high-risk student populations of economically disadvantaged, minoritized, and emergent bilingual/immigrant students for the past several years have continued to remain consistently below both state and district percentages in every assessment category (approaches, meets, and masters). For the district's continually growing population of emergent bilingual students, TELPAS data over the past three years indicated that many of the district's emergent bilingual (EB) students' English language acquisition skills have essentially become "frozen" at the middle and high school campuses and EB students are continuing to perform significantly below their native English-speaking student peers on end-of-course (EoC) exams across the major content areas (English/language arts, math, science, and social studies). In terms of student learning performance at the elementary level, Renaissance Learning Skill Assessments (RenStar) data for the past three years for all elementary campuses in the district indicated that students in a majority of the district's elementary campuses were not developing adequately in their grade-level math and reading skills after third grade. Additionally, a comprehensive analysis of data from common-based assessments (CBAs) conducted in the district during the 2021-2022 academic year to measure elementary students' understanding and mastery of key concepts included in the state's Texas Essential Knowledge and Skills (TEKS) curriculum standards revealed that large percentages of students in the high-risk student population groups were not demonstrating understanding (much less mastery) of key TEKS concepts and were stalling and/or behind grade-level in their learning growth.

With these district-wide student learning performance deficiency data as a backdrop, Dr. Hidalgo emphasized to Mari that the district-wide *Professional Learning Community (PLC) Instructional Teaming Initiative* that the district central office, under his leadership, had implemented three years ago in all elementary and secondary campuses to assist grade-level teachers in learning how to engage together in structured instructional team planning to improve the overall quality of teaching and learning in the district's classrooms was not producing the kind of student learning improvement results that he had hoped for. Superintendent Hidalgo readily admitted to Mari that he was well aware that these kinds of change initiatives can easily get bogged down in implementation at the individual campus level. Dr. Hidalgo and Mari both agreed that it proved to be very difficult over the past three years to get instructional leaders of individual campuses to provide the kind of proactive supervisory oversight and hands-on modeling needed to motivate teachers to utilize the PLC meeting structures as opportunities to become actively involved in data-informed instructional planning. In many campuses within the district, in fact, PLC meetings had devolved into "individual task management/planning time" meetings in which teachers simply used their PLC team planning time to grade papers and/or take care of individual classroom lesson planning tasks. As a result, the overall quality of teaching and learning across campuses in the district was not improving. Emphasizing that this "lack of demonstrable district-wide student learning improvement progress" state of affairs could no longer be tolerated and was becoming increasingly indefensible to the district's school board, superintendent Hidalgo expressed to Mari in no uncertain terms that he had high expectations that, in her role as the district's new Assistant Superintendent and Chief Education Officer (CEO) for Innovation and

Instructional Improvement, Mari would be able to work with educators across the district in new ways to brainstorm and develop innovative, best practice solutions to the district's endemic instructional improvement challenges—solutions that would actually yield positive learning improvement results for all of the district's diverse student populations.

Following their review of relevant district-wide student learning performance data and as a way to summarize their discussions and formally articulate the specific change agent leadership task ahead, Dr. Hidalgo and Mari formulated the following **initial (high inference) “student-learning problem” statement** for Beddington-Farnsworth ISD: *Beddington-Farnsworth Independent School District's district-wide and individual campus-level student learning performance ratings are continuing to decline annually due to significant learning achievement gaps between multiple student population groups across all primary content areas. The district's large populations of economically disadvantaged, minoritized, and emergent bilingual/immigrant student groups, in particular, continue to demonstrate significant learning deficiencies in comparison with other student population groups on state standardized assessments. Thus, the immediate student-learning improvement “urgent challenge” for the district is for instructional leaders (campus principals, assistant principals, grade-level team leaders, instructional coaches, etc.) on campuses throughout the district to provide more proactive supervisory oversight and guidance to grade-level teachers on how to engage in effective PLC-centered instructional planning to improve students' learning in all core content areas (English/language arts, math, science, and social studies).* Following from this initial (high inference) “student-learning problem”, superintendent Hidalgo and Mari were able to generate the following **intuitive If/Then operational statement**: *If the district's new Assistant Superintendent and Chief Education Officer (CEO) for Innovation and Instructional Improvement (Mari) provides campus-based instructional leaders with targeted training on the Professional Learning Community (PLC) instructional teaming process and coaches campus leaders on how to employ proactive supervisory strategies to guide and monitor teachers' data analysis and differentiated instructional planning efforts, then grade-level teachers will learn how to work together effectively as PLC instructional teams and students' overall classroom learning across the tested content areas will improve.*

Mari Echevarria accepted the initial student-learning problem and intuitive If/Then operational statements that she and superintendent Hidalgo developed as logical, data-informed articulations of the immediate “student learning performance deficiency” situation and “change agent turnaround leadership” challenges facing the district. However, there was a gnawing question that continued to perplex Mari as she concluded her initial meetings with superintendent Hidalgo and began to brainstorm how she would approach the daunting district-wide instructional improvement dilemma challenge she—as the district's new Assistant Superintendent and CEO for Innovation and Instructional Improvement—was being charged with addressing. The question that kept reverberating in Mari's mind was: *Given the ‘best practices’ evidence in the recent school improvement literature touting the benefits to school districts of adopting professional learning community (PLC) structures and processes to enhance teachers' overall instructional teaming efforts, why was it that—after three*

years of implementing the PLC instructional teaming initiative in all campuses in the district—PLC teaming practices were not producing any demonstrable student learning improvement results in Beddington-Farnsworth ISD?

Refined Reframing of Beddington-Farnsworth Independent School District's Student-Learning Problem as a Context-Specific Problem of Professional Practice

Relishing the opportunity afforded by her new assistant superintendent position to probe more deeply into what could be some underlying factors affecting the district's intractable student learning performance deficiency situation, Mari Echevarria decided to develop an online Qualtrics survey that she would distribute to all campus-level instructional leaders (campus principals, assistant principals, instructional coaches, grade-level faculty team leaders) and all classroom teachers in the district. The purposes of this Qualtrics survey were: 1) to solicit educators' current perspectives on the extent of their involvement to-date in the district-mandated PLC processes on their campuses; and 2) to seek educators' views on how their participation over the past three years in the district's *Professional Learning Community (PLC) Instructional Teaming Initiative* was impacting their own and their colleagues' overall instructional teaming effectiveness.

Mari administered the Qualtrics survey to all campus-level instructional leaders and classroom teachers during the first week of the 2022-2023 school year. Educators responding to the survey were not shy in sharing their views and perspectives on the district's persistent student learning performance problems as well as their attitudes regarding some of the reasons why these educators felt that they were already doing everything they could to address the learning support needs of the diverse students on their campuses and in their classrooms. As one high school teacher responding to the survey explained: *I've been teaching science in this district for fifteen years. I pride myself on the overall quality of my lesson planning and how I work diligently to teach the core content area concepts and principles that students must learn and master to perform well on the state's End of Course learning accountability exams. The 'PLC instructional teaming initiative' for teachers the district has mandated does not provide me with any new instructional planning ideas or support me in doing anything that I don't already do. For me and many other teachers, this PLC instructional teaming initiative is just another level of 'busy work' that we teachers must grudgingly put up with and pretend like it's helping us do our jobs. We already know how to teach our subject matter and emphasize the core concepts and principles that students need to master if they are going to do well on the learning performance assessments. You know, many of the students in my classes have parents that are working multiple jobs just so their families can survive, and these parents and students don't even consider 'getting an education' to be particularly important. The life goal for many of these students is to become a foreman of other workers doing day laborer jobs. These students simply do not have the motivation to learn, much less master, the academic content that is part of the district's high school curriculum.*

Another teacher responding to the survey noted that teachers should not be held accountable for the high percentage of student learning deficiencies on their campuses because the district's learning support programs themselves were failing students across the entire "elementary-to-secondary school

instructional system”. As this teacher explained: *I teach math at one of the middle schools in the district and each year I routinely have a sizeable number of EB [emergent bilingual] students in my classroom, many of whom are from poor immigrant families who only speak Spanish at home. Most of these EB students have been in our school district for several years and have gone through the BE [Bilingual Education] and ESL [English as a Second Language] programs at the elementary level, where they were supposed to have developed proficiency in English as their ‘second acquisition’ language. But these EB students’ English language reading comprehension and writing skills are way below grade level when they get to middle school. For all practical purposes, it appears that these EB students’ English language development has stalled significantly by the time they reach sixth and seventh grades, and because of this it is virtually impossible for them to keep up with the native English-speaking students in learning the required middle school academic content. These EB students’ learning performance scores on formative assessments and other content learning measures continue to be substantially below that of the English-speaking students.*

The written survey responses of many other teachers working at campuses across the district, indeed, were similar to and resonated with the views of the two teachers in the above responses. As strident as these teachers’ perspectives were, other teachers’ written survey comments even went a step further and were directly critical of campus instructional leaders’ efforts over the past three years to provide professional development support to teachers on how to instructionally plan in “culturally sensitive and linguistically appropriate ways” to address the academic learning development needs of second language learners. As one high school teacher opined: *I’ve been teaching in Beddington-Farnsworth school district for nineteen years and during my years here I’ve developed some highly effective instructional strategies for identifying and addressing my students’ learning support needs. When I see students not understanding essential lesson concepts, I know exactly how to go about reteaching these concepts so students will be able to internalize and master the concepts and then perform well on the end-of-course exams. And my instructional strategies for the most part continue to work very well. But in the past few years, with the increase in the percentages of ‘diverse’ students in our classrooms—driven in large part by the growing numbers of EB [emergent bilingual] and culturally diverse students in the district—we teachers are continually being required to sit through countless professional development sessions on how we need to be ‘culturally and linguistically sensitive’ to the special academic learning needs of these EB students and how we must change the way we go about designing our instructional units and overhaul our classroom teaching practices to serve these students. Well, these EB students have proven repeatedly to me and my teacher colleagues that they simply are not capable of learning. With such consistently low scores on grade-level core content assessments, how are these students even getting promoted each year to the next grade level? I need to focus my efforts on teaching the native English-speaking students who are actually capable of learning the content. My job as a teacher is to teach the students who can demonstrate that they have the academic capacity to learn the required content and be successful on the state’s learning performance assessments. That’s what I’m doing and will continue to do. What’s more, I resent*

campus administrators trying to tell me that I 'need to change my way of teaching' to accommodate students who clearly are not capable of learning!

This survey response, like several others Mari reviewed, was particularly hard for Mari to digest, especially in view of her own immigrant background along with her multi-year efforts as an educator and campus principal in providing instructional leadership guidance to teachers on how teachers can and should change their pedagogical mindsets and ways of instructionally planning and teaching to both respect and address the unique academic development needs of the district's growing numbers of diverse learners. The collective survey responses Mari received from the district's educators provided clear evidence that the teaching, leading, and learning improvement problems the district was confronting were even more deep-seated and entrenched than even superintendent Hidalgo and Mari had understood. Realizing that she would not be able to address these systemic challenges by herself, Mari decided to form a *district-wide instructional improvement task force* to investigate the district's instructional challenges and to devise a plan to address the multiple teaching, leading, and learning challenges she and her district colleagues were facing. To ensure this task force reflected a broad array of leadership insights, Mari invited experienced instructional leaders at both the campus and district levels to join this new instructional improvement task force. After discussing her task force ideas with multiple colleagues across the district, Mari pulled together a district-wide task force that consisted of the following groups of instructional leaders: nine campus principals (three principals each from the elementary, middle, and high school campuses across the district); six instructional coaches working in various campuses in the district; twelve lead teachers (four each at the elementary, middle, and high school campus levels) recommended by their principals; and six school counselors (two each from the district's elementary, middle, and high school campuses). In addition to these campus-based leaders, Mari also tapped multiple district-level central office instructional leaders—including the district's Elementary Curriculum and Secondary Curriculum assistant superintendents and Bilingual Education (BE) and English as a Second Language (ESL) Program Directors—to serve on this new district-wide instructional improvement task force.

Data Analysis and Literature Review Activities. Mari and her newly configured instructional improvement task force immediately moved forward with their investigative work through structuring their overall data collection, organization, and analysis efforts within two main areas. Their first area of investigation involved analyzing the multiple kinds of student learning performance data (disaggregated by individual student sub-populations) that were already readily available at the district and campus levels [e.g., multi-year State of Texas Assessment of Academic Readiness (STAAR) End-of-Course (EoC) Exams and Texas English Language Proficiency Assessment System (TELPAS) data; common-based assessment (CBA) data for all campuses in the district; and Texas Academic Performance Report (TAPR) data for each campus in the district in the areas of STAAR performance, student learning progress by grade level and content area, bilingual education / English as a second language student STAAR performance by subject and performance level for each campus in the district] as well as district-wide attendance, graduation, and dropout rates and college, career, and

military readiness (CCMR) and other post-secondary readiness indicator data. Task force members decided that their second investigative focus would be on collecting and analyzing multiple kinds of observational and perspectivist data from both instructional leaders (principals, assistant principals, instructional coaches, grade-level teacher team leaders, department chairs, etc.) and classroom teachers at multiple campuses throughout the district. Task force members collected observational data through visiting individual campuses and observing principals and other instructional leaders as they engaged in their normal weekly activities involving attending teacher Professional Learning Community (PLC) and grade-level team meetings, conducting classroom walk-throughs, and providing general instructional supervisory oversight to teachers on their overall instructional teaming and classroom teaching practices. Because task force members surmised that obtaining educators' own perspectives regarding their routine campus-based instructional teaming efforts would be particularly important data that would be relevant to informing the task force's investigative work, task force members also collected multiple perspectivist data from teachers through conducting a series of informal focus group interviews with groups of teachers at various elementary, middle, and high school campuses in the district.

Upon completing their data collection and analysis activities, Mari and her team worked to summarize their analysis results in a coherent, reportable fashion. Their results pointed to the existence of five key "inhibiting factors" (underlying *root causes*) that appeared to be influencing/fueling the persistent instructional improvement dilemma situation in their district. These inhibiting factors were: 1) many of the teachers as well as some of the campus-level instructional leaders interviewed expressed doubts regarding the usefulness of the district's *Professional Learning Community (PLC) Instructional Teaming Initiative* in being able to meaningfully improve/enhance teachers' instructional teaming practices (i.e., teachers already believed they were competent in this area and campus leaders did not want to alienate teachers by forcing their active participation in the initiative); 2) teachers' comments during focus group interviews suggested that many teachers in elementary, middle, and high school campuses in the district are engaging in superficial data teaming and the campuses are stuck in a "PLC lite" data teaming deficit culture situation (Dufour & Reeves, 2016) that is not enabling teachers to address students' persistent learning deficiencies; 3) instructional leaders at the campus level (principals, assistant principals, instructional coaches, grade-level faculty team leaders) seem to have somewhat superficial understandings themselves of how to engage in *authentic data teaming* (i.e., conducting deep data dives into students' disaggregated learning performance assessment data and then leveraging the results of these data analyses to drive teachers' data-informed lesson planning activities) and, perhaps because of this, are reluctant to offer proactive supervisory guidance and modeling support to teachers on their current instructional teaming practices; 4) many of the teachers interviewed expressed views that suggest that teachers in general on elementary and secondary campuses across the district have developed some engrained "negative deficit thinking attitudes" regarding their perceptions of the motivation levels and learning capabilities of diverse student population groups in their classrooms (i.e., African American, Hispanic, emergent bilingual/immigrant students); and 5) teachers and instructional leaders lack familiarity with current knowledge and best

practices in *dual language programming* to support teachers' multilingual instructional teaming efforts to effectively address the biliteracy academic development needs of emergent bilingual learners.

Intent on further exploring these identified inhibiting factors that their data analysis efforts suggested were serving as possible underlying root causes of the district's persistent student learning gaps / instructional improvement challenges, Mari and her task force colleagues reviewed multiple relevant literatures that they believed could provide them with further insights as well as current strategies and best practices on how to enhance teachers' instructional teaming efforts to support the learning needs of diverse learners. The task force's review efforts focused on the following school improvement literatures: 1) closing the achievement gaps for at-risk student populations (Byrd, 2020; Dufour et al., 2010; Griner & Stewart, 2013; Haynes, 2011; Hirsh, 2005; Kamm, 2018; Leithwood et al., 2010; McGee, 2004; Sun et al., 2020; Valencia, 2015); 2) authentic data teaming, data coaching, and instructional team capacity–building (Love et al., 2008; Love, 2009; Murphy & Meyers, 2009; Neufeld & Roper, 2003; Neuman & Cunningham, 2009; Pianta et al., 2021; Sparks & Many, 2015; Taylor, 2008); culturally responsive instructional supervisory leadership (Khalifa, 2020, 2021; Khalifa et al., 2016; Theoharis, 2009; Theoharis & Brooks, 2012); 3) creating productive professional learning cultures in schools (Murphy, 2016; Murphy & Torre, 2014; Ritchhart, 2015); 4) teacher deficit thinking (Bertrand & Marsh, 2021; Dudley-Marling, 2015; Dweck, 2016; Ford et al., 2002; Garcia & Guerra, 2004; Goddard et al., 2015; Valencia, 2010, 2015, 2020; Weiner, 2006); 5) bilingualism and second language acquisition (Cummins, 1979, 1981, 2000; de Jong & Harper, 2005); and 6) dual language instructional planning (Chin et al., 2009; Goldenberg, 2008; Ramirez & Faltis, 2020).

Problem Reframing. Mari and her instructional task force colleagues' collective data analysis efforts in conjunction with their review of current turnaround leadership strategies and instructional teaming best practices contained in the school improvement and educational psychology literatures convinced Mari and her team that they needed to “reframe” their change agent leadership thinking to focus more directly on: 1) the identified “data analysis–supported” inhibiting factors (underlying *root causes*) fueling their district's persistent student learning gaps and instructional improvement dilemma challenges; and 2) how they, as a district-wide improvement task force, should go about addressing these root causal factors. As a result of this reframing, Mari and her task force colleagues now realized that they were going to have to adopt an intentional *systemic approach* to addressing the “combination of factors” that were contributing to making the district's interrelated persistent student learning gaps and instructional improvement dilemma challenges so stubbornly intractable. Importantly, task force members now more clearly understood how these combined factors were primarily *professional practice issues* that were associated with educators' own pedagogical thinking, classroom teaching attitudes, and instructional teaming behaviors. Thus, to anchor their change agent leadership thinking in these new insights, Mari and her task force colleagues generated the following new root-causal data analysis–informed **reframed (low inference) Problem of Professional Practice rationale statement** for Beddington-Farnsworth Independent School District: *Many Beddington-Farnsworth teachers and instructional leaders have developed deficit thinking attitudes regarding the perceived motivation*

*levels and learning potentials of some of our district's diverse student populations, which have caused many educators to adopt pedagogical mindsets and instructional ways of thinking colored by feelings of resignation and negative views of the usefulness of engaging in data-driven instructional teaming beyond minimum levels. These negative attitudes and mindsets have led to a 'culture of professional learning complacency' in the district that is acting as a self-reinforcing feedback loop preventing district leaders from implementing instructional improvement initiatives that can ever achieve any real traction. Following from this reframed Problem of Professional Practice rationale statement, Mari and her team then formulated the following **refined Theory of Action (If/Then) operational statement:** IF Beddington-Farnsworth ISD's district-wide instructional improvement task force members, led by the district's new Assistant Superintendent and Chief Education Officer (CEO) for Innovation and Instructional Improvement, adopt a 'systemic approach' to professional learning improvement transformation in the district through designing and pilot-implementing a new district-wide 'multi-tiered instructional improvement system' for educators (i.e., campus-based teachers and instructional supervisory leaders) that focuses on directly immersing educators in learning about processes of authentic data teaming, differentiated planning, job-embedded peer coaching and collegial mentoring, and iterative assessment cycles, THEN the district's educators will be properly motivated and incentivized to expand and deepen their instructional data-teaming capacities in ways that can meet the academic support needs of the district's diverse learners.*

Based on the above analytic logic along with professional learning insights and strategies gleaned from their review of relevant literatures, Mari and her task force colleagues were able to construct the following **Beddington-Farnsworth Independent School District (ISD) Change Drivers Diagram** (see Figure 1) as a conceptual roadmap to guide their "intervention program design" next steps.

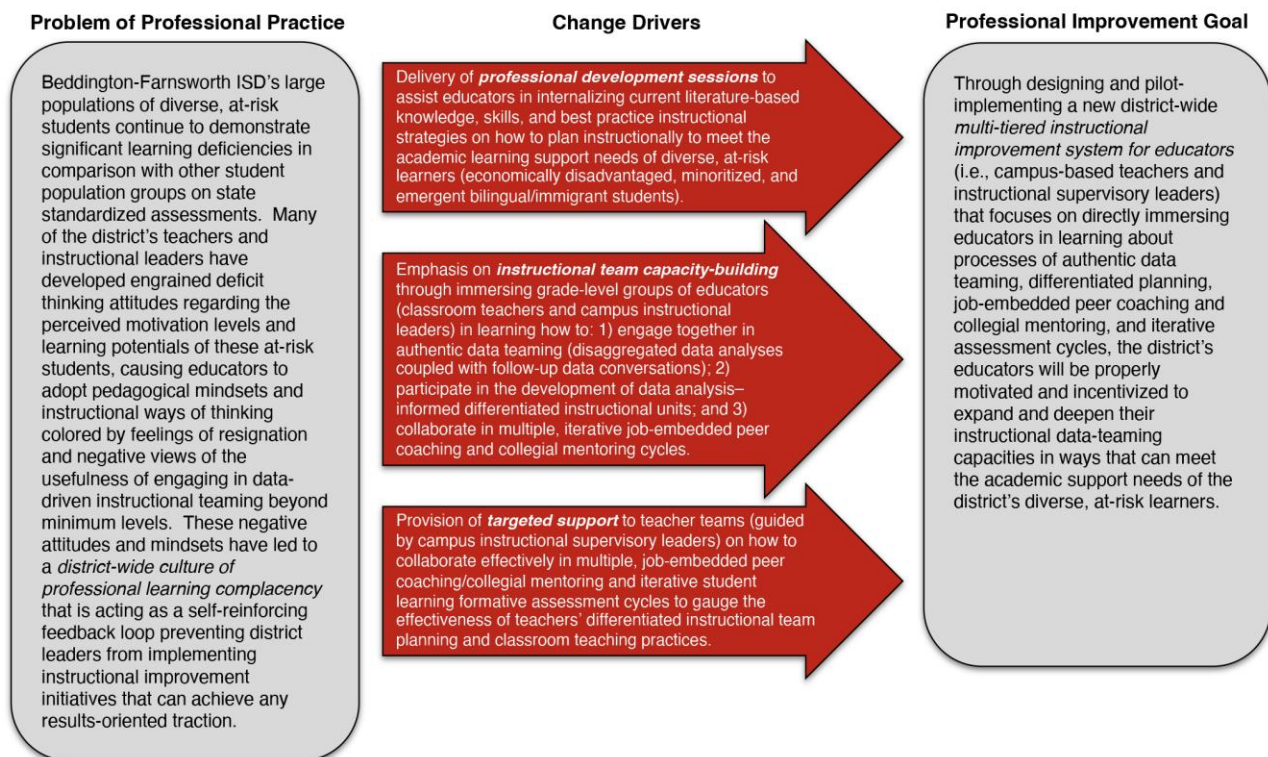


Figure 1 Beddington-Farnsworth ISD Change Drivers Diagram

Intervention Design Development

Using the above analytic logic to guide their design-based intervention thinking, Mari and her instructional improvement task force colleagues were able to identify three specific **change drivers** that they believed could operate effectively as practical “drivers” of professional learning transformation and instructional improvement for educators (campus-based teachers and instructional leaders) in Beddington-Farnsworth ISD. The **first change driver** focuses on providing campus-based educators in elementary, middle, and high schools throughout the district with opportunities to become familiar with knowledge and insights contained in the current literatures on teacher deficit thinking, closing the achievement gaps for diverse learners, and culturally responsive pedagogy and biliteracy development, as well as innovative strategies for addressing the academic learning development and support needs of at-risk students through engaging in data analysis-informed differentiated instructional planning. The **second change driver** leverages the transformative power of immersive professional learning through involving educators in campuses throughout the district directly in learning about the two dimensions of *authentic data teaming*. These two dimensions involve teams of grade-level teachers directly in: 1) conducting “deep data dives” into students’ disaggregated learning performance assessment data to probe and identify the underlying root causes of students’ learning deficiencies; and then 2) engaging together in follow-up “data conversations” to discuss how the results of teachers’ collective disaggregated data analyses can inform and guide their differentiated

instructional unit planning and classroom teaching practices. Finally, the *third change driver* highlights how campus-based instructional supervisory leaders throughout the district can provide *targeted support* to grade-level teams of teachers on their respective campuses on how to collaborate effectively in multiple, job-embedded peer coaching/collegial mentoring and iterative student learning formative assessment cycles to gauge the effectiveness of teachers’ instructional team planning and classroom teaching practices and, through doing so, nurture positive *collegial mentoring and growth-oriented professional learning cultures* within their campuses and throughout the district.

Utilizing their Change Drivers Diagram as a conceptual framework to guide their design-based improvement operational thinking, Mari and her task force colleagues then proceeded to construct their **Instructional Improvement Intervention Program “Implementation Plan”** for the Beddington-Farnsworth Independent School District (see Table 1). The Beddington-Farnsworth ISD Intervention Program Implementation Plan, implemented in October/November 2022, consisted of multiple sets of professional development (PD) modules designed to involve grade-level teams of core content teachers in elementary, middle, and high school campuses throughout the district, under the guidance of each campus’s instructional supervisory leaders, in multiple content knowledge acquisition and interactive applied learning activities to develop teachers’ instructional teaming capacities in the areas of *authentic data teaming, differentiated instructional planning, and diverse student-centered, high-engagement classroom instruction*.

Table 1 Beddington-Farnsworth ISD Instructional Improvement Intervention Program “Implementation Plan”

| WEEK | FORMAT | CONTENT / ACTIVITY |
|------|---------------------------------------|---|
| 1 | Meetings of all selected participants | Introducing key concepts: <ul style="list-style-type: none"> • Culturally and linguistically responsive pedagogy • Academic biliteracy • Recognizing educator deficit thinking • How and to what extent do cultural and linguistic backgrounds impact the <i>academic development</i> learning support needs of economically disadvantaged, minoritized, and emergent bilingual (EB) / immigrant students? • How can teachers employ <i>authentic data teaming, data analysis-informed differentiated instructional planning, and dual language instructional programming</i> to provide culturally and linguistically diverse at-risk students with |

| | | |
|---------|---------------------------------------|---|
| | | <p>high-engagement learning opportunities conducive to supporting their academic development?</p> <ul style="list-style-type: none"> • How can grade-level teams of teachers adapt and apply knowledge, skills, and best practice strategies from the instructional teaming literature to revitalize and enhance their instructional data-teaming capacities? |
| 2 | Meetings of all selected participants | <p>Sessions on <i>authentic data teaming</i> practices:</p> <ul style="list-style-type: none"> • Grade-level teams of core content teachers in elementary, middle, and high school campuses throughout the district participate together in “practice sessions” on how to conduct systematic analyses of disaggregated student-learning performance data to investigate and identify the underlying root causes of students’ learning deficiencies (i.e., factors that may be impeding identified at-risk students’ academic development). • Grade-level teams of core content teachers in elementary, middle, and high school campuses throughout the district, with coaching from their campus’s instructional supervisory leaders (principals, assistant principals, instructional coaches), engage together in <i>collaborative data conversations</i> about the results of their collective practice session data analysis efforts and how teachers can utilize these data analysis results to inform their subsequent interdisciplinary unit planning efforts. • Grade-level teams of core content teachers in elementary, middle, and high school campuses throughout the district participate together in a complete, grade level-specific <i>immersive team-learning project</i> (one project for each grade-level teacher team) on how to apply the above authentic data teaming practices and leverage the disaggregated data analysis results of their teaming efforts to plan and implement a fully articulated “interdisciplinary instructional unit” in their classrooms. |
| 3 and 4 | Classroom observation/peer | Teachers in elementary, middle, and high school campuses throughout the district conduct multiple classroom |

| | | |
|----------|--|--|
| | <p>coaching and collegial mentoring cycles</p> | <p>observations of fellow teachers focused on innovative instructional strategies that promote at-risk students' interactive peer learning.</p> <ul style="list-style-type: none"> • Core content teachers in campuses throughout the district are paired into “co-partner teams” to engage in multiple classroom observation/peer coaching and collegial mentoring cycles to examine teachers’ effectiveness in applying their newly acquired content knowledge and differentiated instructional strategies to their classroom teaching practices. • Co-partner teacher teams also observe students to identify successful instructional strategies and activities that engage at-risk students in deeper learning. |
| <p>5</p> | <p>Debriefing sessions</p> | <p>Grade-level teams of core content teachers in elementary, middle, and high school campuses throughout the district participate together in a series of informal team meetings to reflect on their collective experiences and discuss new insights gleaned from their participation in the “knowledge and skills acquisition”, “immersive team-learning project”, and “multiple classroom observation/peer coaching and collegial mentoring cycle” components of the overall five-week intervention program.</p> |

Mari and her task force colleagues designed their district-wide instructional improvement intervention program “intervention plan” to provide multiple campus-level teams of teachers along with their campus-based instructional supervisors with opportunities to review current knowledge, skills, and best practices in a number of current school improvement and educational psychology literatures related to and informing the district’s instructional improvement challenges identified by the improvement task force. Thus, in week one of the intervention program teachers and instructional leaders participated in professional development sessions on culturally and linguistically responsive pedagogy and academic biliteracy, and familiarized themselves with literature-supported techniques for recognizing symptoms and patterns that may be indicative of educators’ own deficit thinking regarding the learning capabilities and academic learning support needs of economically disadvantaged, minoritized, and emergent bilingual/immigrant students. During this initial week of the intervention program educator participants were also presented with best practice techniques

contained in the instructional improvement literature on how teams of teachers can adapt and apply current knowledge and strategies from the instructional teaming literature to revitalize and enhance their own instructional data-teaming capacities. Collectively, this first week of the intervention program was structured to provide educator participants with literature-supported insights that could inform and guide educators' incremental "applied team learning" as they progressed through the five-week professional learning/development experience. The second week of the intervention program centered on immersing educator participants from elementary, middle, and high school campuses across the district in multiple "practice sessions" on *authentic data teaming*, in which teams of teachers guided by coaching from their campus's instructional supervisory leaders (principals, assistant principals, instructional coaches), participated together in learning how to: 1) conduct systematic analyses of disaggregated student-learning performance data to investigate and identify the underlying root causes of students' learning deficiencies; and 2) engage together in *collaborative data conversations* about the results of their collective practice session data analysis efforts and how teachers can utilize these data analysis results to inform their subsequent interdisciplinary unit planning efforts. After completing these practice sessions, educator participants then participated together in a complete, grade level-specific *immersive team-learning project* (one project for each grade-level teacher team) on how to apply their newly acquired authentic data teaming skills to plan and implement a fully articulated "interdisciplinary instructional unit" that they would then deliver in their classrooms. Weeks three and four of the intervention program then involved teachers in participating in multiple peer observation/coaching and collegial mentoring cycles. These cycles enabled paired "co-partner teams" of teachers to observe each other's classroom teaching and offer feedback to each other on strength and weakness areas observed in their teaching and provided opportunities for teachers to engage in collaborative conversations on how effective they perceived themselves to be in applying their newly acquired content knowledge and differentiated instructional strategies to their classroom teaching practices. The final week of the intervention program consisted of a series of informal grade-level team debriefing sessions in which teachers were invited to reflect on their collective experiences during the professional development intervention program and discuss among themselves any new insights that were gleaned from their participation in the various "knowledge and skills acquisition", "immersive team-learning project", and "observation/peer coaching and collegial mentoring cycle" components of the five-week intervention program.

Viewed collectively, the iterative sets of new knowledge acquisition meetings, authentic data teaming *immersive learning* project activities, observation/peer coaching and collegial mentoring cycles, and final team debriefing sessions that comprised the five-week-long intervention program constituted a *multi-tiered systemic approach* to district-wide instructional improvement (see Figure 2). Within this systemic approach to instructional improvement, the specific intent of the intervention program design was to directly involve grade-level teams of teachers along with their instructional supervisors in campuses throughout the district in a carefully planned series of structured "immersive team-learning" experiences. The purpose of these immersive learning activities was to assist educators in learning in an in-depth, hands-on manner about processes of authentic data teaming, differentiated planning, job-

embedded peer coaching and collegial mentoring, and student learning assessment that, when utilized synergistically, have the potential to transform educators' pedagogical thinking and expand their instructional data-teaming capacities in ways that can meet the academic support needs of the district's populations of diverse, at-risk learners. The overall goal of this multi-tiered, systemic approach to professional development intervention design was to dramatically expand and transform educators' professional learning in ways that could assist educators in learning how to *think different and work together in new ways as instructional data teams* to close student learning performance gaps and revitalize the teaching and learning culture of the district.

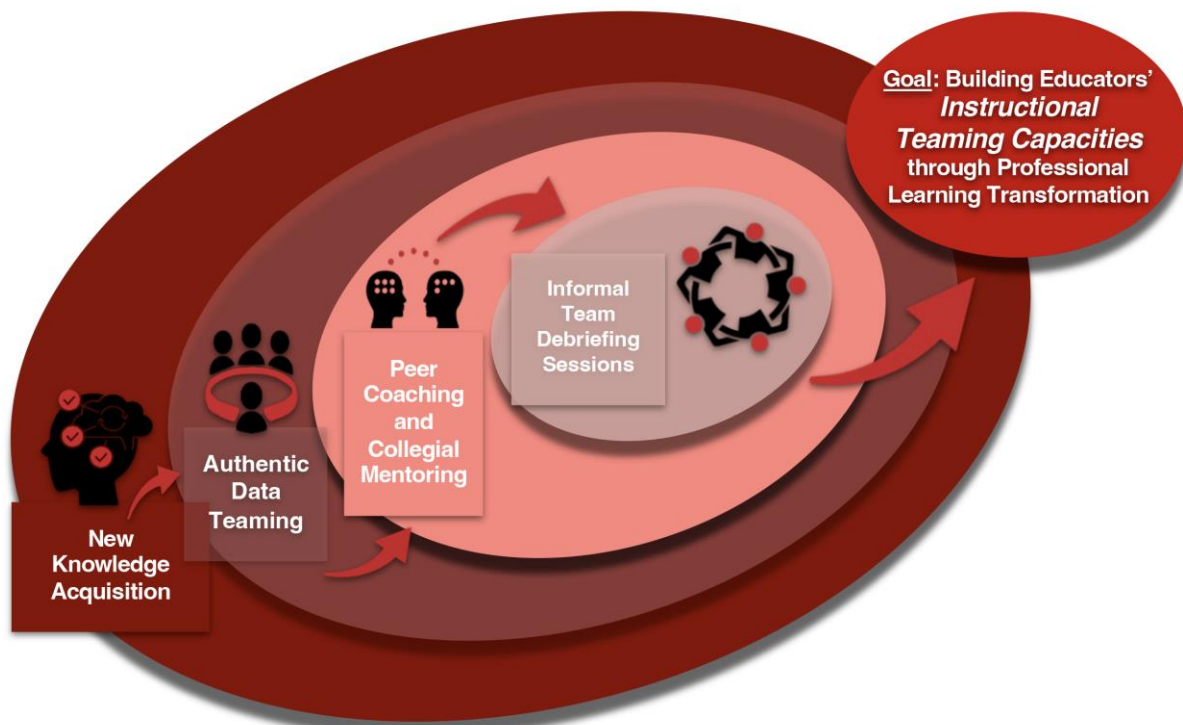


Figure 2 Beddington-Farnsworth ISD Multi-Tiered Systemic Approach to District-Wide Instructional Improvement

Design-Based Instructional Improvement Results and Findings

Through participating in the collective data analysis and intervention program development and implementation activities detailed in the above design-based school district improvement case study, Marianna Echevarria and her task force colleagues were able to generate some data-supported **Design-Based Instructional Improvement Results and Findings** emanating from their Beddington-Farnsworth district-wide intervention efforts. The following **design research results** documented the perceived “professional learning benefits” campus-based educators (i.e., teams of grade-level teachers

and their instructional supervisors) experienced through their involvement in the five-week “instructional improvement system” professional development intervention program. A **first result** that emerged was that teams of teachers and their instructional supervisors in elementary and secondary schools in the district—through engaging together in multiple deep data dives into their campus’s disaggregated student learning performance data—were able to *gain a more data analysis–informed deeper understanding of the unique learning challenges and instructional support needs of the large numbers of diverse, at-risk students populating their classrooms*. A **second result** emerging from analysis of the case study’s collective process and impact data was that the multiple, team-centered “critical reflective” data analysis activities integrated into the PD intervention program’s sequential “developmental learning” design caused teachers as they navigated through the multi-week program to *gradually arrive at a conscious realization as grade-level planning teams of the extent of their ingrained ‘deficit thinking’ assumptions and attitudes regarding the perceived motivation levels and learning potentials of the diverse learners in their classrooms and how this ‘deficit thinking’ was negatively impacting their overall instructional teaming capacities*.

These case study results enabled the district’s instructional improvement task force in collaboration with the university-based consultant to generate some broader professional learning outcomes (i.e., **design research findings**) associated with the overall design, development, and implementation of the Beddington-Farnsworth ISD Instructional Improvement Intervention Program. The **first finding** emanating from the case study’s results was that “*hands-on, applied*” immersive learning can be a highly effective means to motivate teachers to critically examine their own pedagogical attitudes/beliefs and instructional practices. The **second finding** derived from the collective results was that change agent leaders confronting persistent learning performance gaps among populations of diverse, at-risk students in their school districts can utilize “data analysis–informed design thinking” in conjunction with creative “intervention program development strategies” adapted from the improvement science literature to develop and implement innovative, district-wide *multi-tiered instructional improvement system PD intervention programs* that can transform and revitalize how education personnel (teams of grade-level teachers and their instructional supervisors) approach and take active ownership in their ongoing professional learning. Through implementing a multi-tiered system that immerses teams of educators in learning how to: 1) engage together in authentic data teaming to investigate and identify the underlying root causes of students’ learning deficiencies; 2) collaborate in data analysis–informed differentiated instructional unit planning; 3) participate in reciprocal peer observation/coaching cycles of their own and their colleagues’ classroom teaching to develop team-centered understandings of effective classroom instructional delivery; and 4) conduct ongoing formative assessments to gauge the impact of their collective instructional teaming efforts on students’ classroom engagement levels and overall learning progress, district leaders can involve their teaching staff in “iterative” and “progressively developmental” cycles of new knowledge acquisition, data teaming, and collegial mentoring. These professional learning cycles can incentivize teachers to reevaluate their current pedagogical mindsets and instructional planning practices and, through doing so, empower teachers to learn how to *think different and work together in new ways*. In short, through

embracing a design-based approach to district-wide instructional improvement, change agent leaders can enact meaningful *professional learning transformation* in their school districts that can: 1) motivate teaching personnel to want to invest in their own team-centered continuous professional learning and growth; and 2) substantively expand opportunities for high-engagement learning for the populations of diverse, at-risk learners in their district classrooms.

DISCUSSION

This section provides a literature-informed discussion of some of the key features of the multi-leveled analytic thinking and intervention program design development and implementation approach utilized by the instructional improvement change-agent leaders in the Beddington-Farnsworth case study highlighted above. Several *design principles* derived from the case study are also presented. These design principles may be of practical use to educators working in a variety of school district settings who have been stymied thus far in their efforts to address persistent student learning deficiencies and who would like to explore the potential of design-based improvement methods for revitalizing the way educators go about addressing and solving intractable teaching and learning improvement challenges in their districts.

Adopting a Design-Based Approach to Addressing Persistent At-Risk Student Population Learning Performance Gaps in High Diversity Urban School Districts

Design-based thinking as articulated in the improvement science literature (McKenney & Reeves, 2012; Plomp & Nieveen, 2010; van den Akker et al., 2006) provides school leaders with new conceptual and operational tools for: 1) systematically collecting and analyzing relevant data to carefully investigate intractable problems of deficient student learning performance in their school districts; and 2) designing and implementing practical intervention programs that can directly address these persistent, difficult to solve problems. Specifically, adopting a design-based approach to tackling the often seemingly insurmountable challenges involved in addressing the persistent learning deficiencies of diverse populations of at-risk learners in K-12 school districts can enable school improvement leaders to engage in a structured process of *problem identification and analysis*. This structured process focuses school leaders on intentionally dissecting a difficult, multifaceted learning improvement problem into its *surface-level symptoms* and *underlying root causes*. This can enable change agent leaders to identify underlying “root causal inhibiting factors”—many of which can be traced to *adult educators’ own ingrained pedagogical attitudes/beliefs and instructional practices*—that can be found to be fueling the surface-level student learning deficiency “symptoms”. It is this analytic process of systematically parsing out the multiple levels of a problem situation through reviewing evidentiary data on student-learning performance metrics (i.e., *surface-level student learning problems*) in conjunction with probing and identifying potential root causal inhibiting factors (i.e., *underlying problems of professional practice*) that could be fueling and exacerbating these student learning deficiencies that makes design-based analytic thinking and intervention development such a useful tool for realizing demonstrable teaching and learning improvements in school district organizations. Rick Mintrop (2016) clearly explains how and why directly addressing adult educators’ own pedagogical beliefs/attitudes and instructional practices must necessarily be the specific focus of

change agent leaders' instructional improvement efforts in K-12 school districts: "The achievement gap is a huge problem in the United States and elsewhere. But [school leaders] will have to realize that the gap is not a problem of practice, but the result of many practices, and this result is indicated by a measurable achievement gap. Indicators point to problems but are not the problem of *practice*. No designed intervention can close the achievement gap directly; educators can only change beliefs, attitudes, or practices that may eventually be registered on the indicator. School and district leaders have the strongest influence on adults, not students. So, leaders' problems of practice should focus on beliefs, attitudes, or practices of adults who are members of, or associated with, their organization." (Mintrop, 2016, p. 66) Importantly, the professional development (PD) intervention programs that instructional improvement leaders develop and implement as a result of engaging in this design-based process of *multi-level problem identification and root causal analysis* can be crafted to utilize innovative, data-informed instructional planning and classroom teaching "best practices" found in relevant school improvement literatures that have the power to substantively change educators' pedagogical thinking and enhance their overall instructional teaming capacities.

Most importantly, the design-based approach to multi-level problem identification and comprehensive intervention program development adopted by Marianna Echevarria and her instructional improvement task force colleagues provided these change agent leaders with the data-informed insights and strategies they needed to be able to design, develop, and successfully implement a comprehensive, district-wide "*multi-tiered instructional improvement system*" *intervention program*. Because the program's design was anchored in systematic, multi-leveled analyses of relevant data (both student-learning performance data and teacher professional practice data), this intervention program possessed the power to engage educators in new kinds of innovative professional learning in highly structured and sustained "team-centered" ways in a manner that the initial district-wide *Professional Learning Community (PLC) Instructional Teaming Initiative* originally implemented by the superintendent had not. This "team-centered learning" tapped into the transformative power of immersive professional learning to change educators' thinking and substantively expand their overall instructional teaming practices.

Leveraging the Transformative Power of Immersive Professional Learning to Develop and Implement a District-Wide, Multi-Tiered Instructional Improvement System to Expand Educators' Data Teaming Capacities

The investigative work engaged in by Marianna Echevarria and her instructional improvement task force colleagues in systematically examining both the "surface-level symptoms" and "underlying root causes" of the persistent student learning performance problem plaguing their school district—through collecting and analyzing multiple kinds of data (i.e., available state and district student learning accountability and formative assessment data in conjunction with multiple kinds of observational and perspectivist data collected from campus-based teachers and instructional supervisory leaders on their present pedagogical attitudes/beliefs, instructional data teaming mindsets, and classroom teaching practices)—resulted in the generation of some valuable organizational insights that proved particularly

useful to informing the specific change agent leadership focus of their subsequent intervention program design and implementation efforts. These organizational insights centered on the identification of five key “inhibiting factors” (underlying *root causes*) that were found to be influencing and fueling the student learning dilemma situation involving the sub-populations of diverse, at-risk learners in their district. These five key factors were: 1) many campus-based educators questioned the usefulness of the district’s *Professional Learning Community (PLC) Instructional Teaming Initiative* in being able to meaningfully improve/enhance teachers’ instructional teaming practices as teachers already perceived themselves to be competent in this area and campus leaders did not want to alienate teachers by forcing their active participation in the initiative; 2) interview evidence suggested that many teachers on campuses throughout the district were engaging in superficial data teaming and the campuses were stuck in a “PLC lite” data teaming deficit culture situation that was preventing teachers from effectively identifying and addressing students’ real, data-informed learning deficiencies; 3) campus-based instructional supervisory leaders were found to have somewhat superficial understandings themselves of how to engage in *authentic data teaming* (i.e., conducting deep data dives into students’ disaggregated learning performance assessment data and then leveraging the results of these data analyses to drive teachers’ data-informed lesson planning activities) and, as a result, were reluctant to offer proactive supervisory guidance and modeling support to teachers on their current instructional teaming practices; 4) many teachers in general on campuses across the district had developed some engrained “negative deficit thinking attitudes” regarding their perceptions of the motivation levels and learning capabilities of the diverse student population groups in their classrooms (i.e., African American, Hispanic, emergent bilingual/immigrant students); and 5) teachers and instructional leaders lacked familiarity with current knowledge and best practices in *dual language programming* to support teachers’ multilingual instructional teaming efforts to effectively address the biliteracy academic development needs of emergent bilingual learners. The combination of teachers’ innate resistance to district-mandated instructional change initiatives reinforced by their entrenched negative pedagogical mindsets and instructional beliefs/attitudes regarding the perceived motivation levels and learning capabilities of the district’s multiple populations of diverse, at-risk students in conjunction with instructional supervisory leaders’ reluctance to proactively address the endemic “PLC lite” and deficit dual language programming cultures on their campuses served as the main driving forces fueling the district’s instructional improvement dilemma situation.

As a result of their methodical analysis of the surface-level symptoms and underlying root causes of their district’s dilemma situation, Marianna Echevarria and her improvement task force colleagues understood that, to be able to enact meaningful change and ensure demonstrable and sustainable learning improvements in their school district, they would need to think big and commit to pursuing a “systemic, multi-tiered approach” to professional learning transformation for their district’s educators. The district-wide *instructional improvement system* the task force developed and implemented in the Beddington-Farnsworth school district case situation utilized a multi-tiered architecture involving four structured “intervention program” components that were designed to lead campus-based educators (i.e., grade-level teams of teachers and their instructional supervisors) through a carefully planned

series of immersive, “hands-on” team learning activities coupled with multiple opportunities for peer coaching and collegial mentoring professional growth support. The four multi-tiered “intervention program” components of the Beddington-Farnsworth school district’s instructional improvement system, in a nutshell, consisted of proactive coaching and modeling by district PD facilitators to guide campus-based grade-level teams of teachers and their instructional supervisors in how to: 1) internalize new knowledge on how to instructionally plan for and teach diverse, at-risk learners; 2) engage together in authentic data teaming to investigate and identify the underlying root causes of students’ learning deficiencies and then leverage the results of their analyses to collaborate in data analysis–informed differentiated instructional unit planning; 3) participate in iterative peer observation/coaching cycles of teachers’ classroom teaching to develop both teachers’ and instructional supervisors’ team-centered understandings of “effective” classroom instructional delivery; and 4) conduct ongoing formative assessments with accompanying debriefing sessions to gauge the impact of educators’ collective instructional teaming efforts on students’ classroom engagement levels and overall learning progress. The intervention components were purposely designed to be “iterative” and “progressively developmental” in that educators were first coached by intervention program PD facilitators on processes of authentic data teaming and then guided through a series of interactive learning experiences in which grade-level teams of teachers and their instructional supervisors collaborated together to develop and refine their differentiated instructional planning and classroom-based instructional delivery and assessment skills. Throughout the implementation of the district-wide “instructional improvement system” intervention program, the *transformative power of immersive professional learning* was employed as a common unifying theme that tied the four intervention program components together and served as an incentivizing force to lead educators—through active involvement in their own ongoing team-learning experiences—toward new levels of transformative professional learning and growth. The power and effectiveness of employing a *multi-tiered instructional improvement system* design that utilizes multiple kinds of iterative, developmental professional learning/growth components (such as the design employed by the instructional improvement task force in the Beddington-Farnsworth case study) is supported by leading researchers in the current professional development design literature. For example, according to Linda Darling-Hammond and her colleagues, effective professional development (PD) has seven identifiable characteristics. Specifically, effective professional development is: 1) content focused; 2) incorporates active learning utilizing adult learning theory; 3) supports collaboration, typically in job-embedded contexts; 4) uses models and modeling of effective practice; 5) provides coaching and expert support; 6) offers opportunities for feedback and reflection; and 7) is of sustained duration (Darling-Hammond et al., 2017, p. 4). The multi-tiered, iterative literature-supported content knowledge and skills acquisition, project-based authentic data teaming, peer coaching and collegial mentoring, and student learning assessment / debriefing components of the district-wide “instructional improvement system” PD intervention program developed and implemented by Marianna Echevarria and her instructional improvement task force colleagues reflected all seven of these design characteristics in a comprehensive system that focused on *transforming the professional learning* of educators (i.e., teams

of grade-level teachers and their instructional supervisors) in elementary, middle, and high school campuses throughout the Beddington-Farnsworth school district.

The peer coaching and collegial mentoring component of the intervention program design provided a means to deal with “pushback” from veteran teachers who were initially highly resistant to instructional change. As teacher teams navigated together through the developmental learning components of the intervention program and made progress in internalizing and applying principles of authentic data teaming to their own weekly data-teaming efforts, this “cumulative team learning” effect served as a strong countermanding influence that motivated recalcitrant teachers to begin to engage in critical self-analysis of their own engrained pedagogical beliefs/attitudes and instructional practices. The expert coaching and modeling support provided by the intervention program’s PD facilitators in conjunction with the peer pressure exerted by fellow teachers who were demonstrating a willingness to change their instructional mindsets and practices in response to their intervention program experiences together acted as powerful incentivizing forces that caused recalcitrant teachers to begin to reflect on their own attitudes and behaviors and become more open to the prospect of instructional change. As one veteran high school math teacher remarked in one of the teacher team “debriefing sessions” during the final week of the intervention program: *I’ve been teaching in this district long enough to have witnessed many district-mandated teaching and learning improvement initiatives come and go. And I’ve always felt that these ‘improvement initiatives’ were forced upon us by central office administrators who do not really understand the kinds of student learning challenges we teachers have to continually deal with in our classrooms. So, I’m naturally averse to following top-down directives from district administrators who simply want to implement ‘quick change’ and get student learning improvement ‘results’ without taking the time to carefully listen to teachers and provide us with the kinds of instructional supports we really need. And, going into this latest intervention program my initial reaction was ‘here we go again’, yet another attempt by central office administrators to dictate to teachers what we should be doing and how we need to change our practices to increase students’ learning performance. But I now must admit that the kinds of data analysis and differentiated instructional planning team-learning projects my eleventh grade teacher colleagues and I engaged in during this latest intervention program felt different. The PD facilitators did not force us to change and do things a certain way. They modeled current best practices in disaggregated data analysis and differentiated unit planning for us and then simply invited us to explore together ‘as a team’ how we wanted to experiment with and consider adapting and integrating some of these practices into our own instructional data-teaming efforts. I really appreciated the respect the PD facilitators showed for the wealth of knowledge and experience we, as teachers, have accumulated over the years regarding how to deal with teaching and learning challenges we’re intimately familiar with in our own classrooms. This attitude of respect coming from the PD facilitators made many of us feel much more comfortable and open to exploring the data analysis and instructional unit planning best practice ideas they were sharing with us. The upshot of this was that our grade-level team began to perceive advantages to utilizing some of the ‘deep data dive’ analysis methods for investigating underlying root causes of students’ learning deficiencies the facilitators were modeling for us, and we began to see how we could*

leverage insights gleaned from the results of these deep data dives to incorporate new kinds of differentiated learning opportunities for our at-risk student groups into our overall interdisciplinary unit planning efforts to improve students' learning. In short, our team-learning project experiences in this intervention program affected our team in tangible ways and caused us to reexamine our long-held beliefs about what constitutes effective instructional data teaming.

This high school teacher's comments along with similar perspectives shared by other teachers during the intervention program's concluding week of debriefing sessions underscore the *transformative power of immersive professional learning* and how carefully structured team-learning project activities can provide educators (teachers and instructional supervisors) with the "mental space" they need as professionals to experiment in their own way and on their own terms with current literature-supported data analysis and instructional planning techniques and make their own experience-based decisions on how they may want to adapt and integrate some of these techniques into their instructional teaming practices. This approach to designing professional learning opportunities for school district personnel that acknowledges and respects educators' accumulated expertise and encourages educators to explore new techniques and strategies on their own terms and without unnecessary coercion is supported by researchers' writings in the organizational change literature on how to go about effecting positive, lasting change in leading and learning organizations. As Margaret Wheatley, in her classic book *Leadership and the New Science* explains: "The potent force that shapes behavior in organizations and in all natural systems is the combination of simply expressed expectations of purpose, intent, and values, and *the freedom for responsible individuals to make sense of these in their own way* [emphasis added]. ...It is the nature of life to organize into patterns. This recognition welcomes us into a different approach to organizational change. We can see that it is important to look for and identify the patterns that reveal themselves through behavior. Together we can decide whether we would prefer different behaviors. If we do, *we need to figure out the values and agreements that we think will support these new behaviors. Then we work together to see what it means to live into these new agreements* [emphasis added]. This work requires awareness, patience, and generosity. Behaviors don't change just by announcing new values. We move only gradually into being able to act congruently with those values. To do this, *we have to develop much greater awareness of how we're acting; we have to become far more self-reflective than normal* [emphasis added]. And we have to help one another notice when we fall back into old behaviors. We will all slip back into the past—that is unavoidable—but when this happens, we agree to counsel one another with a generous spirit. Little by little, tested by events and crises, we learn how to enact these new values. *We develop different patterns of behavior* [emphasis added]." (Wheatley, 1999, pp. 129-130)

The series of immersive team-learning project activities that functioned as key integral components of the Beddington-Farnsworth school district's "multi-tiered instructional improvement system" intervention design provided educators with the learning spaces they needed to experiment with current literature-supported best practice techniques and strategies *as a professional learning team* and use these experiences as a backdrop for reflecting on and potentially changing their own instructional

practices. Importantly, it was Marianna Echevarria and her instructional improvement task force colleagues' understanding and mindfulness of how adults need to be afforded both the professional space and support to go about processing new techniques and strategies and learning how to "think different and work together in new ways" *on their own terms* that contributed in no small part to the success of Beddington-Farnsworth ISD's district-wide "instructional improvement system" intervention program.

Design Principles Derived from the Beddington-Farnsworth School District Case Study

The school district case study showcased and discussed in this article generated several *design principles* associated with adopting a design-based approach to district-wide instructional turnaround and improvement. These design principles highlight the advantages to school district leaders stymied by the persistent, seemingly intractable nature of their district's student learning performance problems of employing design-based school improvement analytic thinking processes and intervention program development strategies to reframe their problem thinking and revitalize their instructional improvement efforts. These design principles are briefly summarized below.

Adopt a design-based approach to addressing persistent learning performance gaps exhibited by your district's populations of diverse, at-risk learners. Change agent leaders working in a variety of school district settings serving multiple populations of diverse, at-risk learners can reframe and turbocharge their instructional improvement efforts through integrating design-based analytic thinking and intervention program development strategies into their overall school district improvement efforts. Through engaging in design-based processes of *multi-level problem identification and root causal data analysis* in conjunction with data analysis-informed *comprehensive PD intervention program development and implementation*, instructional improvement teams in K-12 school districts can systematically analyze multiple kinds of student learning performance data in conjunction with educators' perspective and instructional practice data to probe and identify potential underlying root causes related to grade-level teachers' and campus-based instructional supervisors' own pedagogical mindsets and instructional/supervisory practices that may be fueling and/or contributing to students' persistent learning deficiencies. This kind of intentional root causal analysis can generate multiple insights supported by current best practices in the school turnaround, educational psychology, and instructional teaming literatures that can guide district-level instructional improvement teams in identifying key change drivers (literature-supported *drivers* of professional learning growth and instructional improvement) that can inform their subsequent PD intervention program development and implementation efforts. The targeted PD intervention programs generated through this design-based analytic process, when implemented effectively, can yield positive results in terms of expanding educators' professional learning growth potentials and enhancing their instructional data-teaming capacities.

Incorporate multiple kinds of immersive professional learning experiences into district-wide PD program designs to turbocharge and enhance educators' instructional data teaming development. School district leaders interested in effectively addressing the persistent student learning deficiency

problems associated with their district's populations of diverse, at-risk learners can leverage the *transformative power of immersive professional learning* as an intentional strategy to increase the meaningful impact of district-wide PD intervention programs on educators' deeper learning and professional growth. Designing and implementing carefully structured immersive learning project activities for educators (e.g., grade-level teams of teachers and their campus-based instructional supervisors) as integral components of professional development programs can provide educators with important opportunities to: 1) engage together in critically examining in their own ways and on their own terms the most current pedagogical content knowledge and innovative instructional strategies available in the teaching and learning literature; and then 2) make informed decisions as professionals on how they may want to modify, adapt, and integrate practical insights and best practice ideas from this information into their own team-centered instructional planning and classroom teaching practices. In this regard, incorporating multiple kinds of immersive team-learning experiences into professional development program designs is an excellent way for district human resource directors and staff development planners to empower teachers, instructional coaches, learning interventionists, campus-level administrators, etc. *to take direct and active ownership in their own professional learning* and incentivize educators to focus on advancing their team-centered learning for the benefit of the diverse students in their classrooms.

Transform and revitalize teachers' unfocused instructional teaming efforts through nurturing robust district-wide professional learning cultures anchored in 'authentic data teaming' principles and practices. District change agent leaders interested in addressing the often lackadaisical data analysis and instructional planning practices that teachers can often revert to in response to district administrators' efforts to mandate professional learning community (PLC) initiatives—described as “PLC lite” educator teaming behaviors in the instructional improvement literature (Dufour & Reeves, 2016)—can work to nurture professional learning cultures in their districts that accentuate the benefits to teachers of incorporating *authentic data teaming* principles and strategies into their routine instructional teaming practices. In a nutshell, authentic data teaming involves teachers in actively participating together in two collaborative activities: 1) analyzing disaggregated student learning performance data to probe the underlying root causes of students' persistent learning deficiencies; and 2) engaging in follow-up data conversations to discuss how teachers can leverage insights gleaned from their collective data analysis results to inform their differentiated instructional planning efforts to craft varied and meaningful learning opportunities for all students in their classrooms. Campus-based supervisors and instructional coaches can work intentionally to guide teachers in learning about these two key components of authentic data teaming and then actively model how teachers can integrate these strategies into their overall instructional teaming practices.

Integrate job-embedded observation/coaching and collegial mentoring activities into PD programs to expand teachers' peer-to-peer reflective interactions and professional sharing of pedagogical insights and instructional best practices. Integrating multiple structured opportunities for teachers to engage together in iterative cycles of peer observations of each other's classroom teaching can be an excellent

way for teachers to critically examine how successful they perceive themselves to be in applying newly acquired pedagogical content knowledge and instructional strategies into their classroom teaching practices. As teachers begin to experience the dividends that can accrue to both themselves and their students from participating in iterative cycles of observation/coaching of their own and their colleagues' classroom teaching practices (through in-person classroom observations, video-recorded lesson reviews, post-observation discussions and coaching sessions, etc.), teachers will begin to appreciate the value of engaging in "critical reflective analysis" of their pedagogical beliefs/attitudes and teaching behaviors as an important component of ongoing, team-centered professional practice. Moreover, this kind of teacher-led "peer interactive critical analysis and sharing" can serve to nurture a positive *collegial mentoring mindset* among teaching staff that can contribute substantively to the overall quality and effectiveness of the growth-oriented professional learning cultures operating on individual campuses and throughout a school district.

Expand your district's human resource professional learning support potential through forming strategic partnerships with regional colleges and universities. Strive to build strong connections with regional college and university faculty who have research expertise in many of the school turnaround and instructional improvement challenge areas K-12 school district leaders are currently confronting and who can serve as learning improvement consultants to district and campus leaders. These kinds of strategic partnerships can prove very valuable in terms of expanding opportunities for school district change agent leaders to work collaboratively with college/university faculty to apply current research-informed knowledge, insights, and design strategies to inform district leaders' ongoing PD intervention program planning, implementation, and evaluation efforts. Additionally, elementary and secondary educators (classroom teachers, instructional coaches, learning interventionists, campus-level principals/supervisors, etc.) can benefit directly from these strategic "school district–higher education partnerships" through being able to develop long-term *mentoring/advisory relationships* with college/university research faculty who can support these educators in their ongoing instructional data teaming and professional career development.

CONCLUSION

The Beddington-Farnsworth school district case study showcased and discussed in this article provides a real-world example of the kinds of high-profile and vexing "closing the achievement gaps" instructional improvement challenges many education leaders working in high diversity urban school districts in Texas and throughout the United States are currently confronting as they struggle to meet the academic learning development and support needs of the large percentages of diverse, at-risk learners (i.e., economically disadvantaged, minoritized, and emergent bilingual/immigrant students) populating their elementary and secondary campuses and classrooms. Instructional improvement leaders in many of these districts are confronting similar turnaround leadership challenges to those faced by the change agent leaders in the Beddington-Farnsworth case situation. These leaders are finding that their district central office's teaching and learning effectiveness and human resource/staff development planning personnel are woefully unprepared (due to lack of training and access to

appropriate investigative methods) to engage together in the important process of: 1) systematically analyzing district-wide disaggregated student learning performance data in conjunction with teacher observational and perspectivist data; and then 2) leveraging the results of their analyses to design and implement targeted, data analysis–informed *multi-tiered professional development (PD) programs* that can effectively address the instructional data teaming inadequacies of classroom teachers and their instructional supervisors.

The case study profiled in this article report highlights how school districts with large diverse student populations can partner with school improvement researchers/consultants based in regional universities to provide opportunities for their district- and campus-level instructional improvement leaders to learn how to apply principles of *design-based analytic thinking* to reframe their student learning performance problem identification efforts and revitalize their PD intervention programming. The district-wide “multi-tiered instructional improvement system” PD intervention program developed and implemented by Assistant Superintendent Marianna Echevarria and her instructional improvement task force colleagues in the Beddington-Farnsworth case situation demonstrates how school district instructional leaders can adopt a *design-based approach* anchored in the education improvement science literature to recalibrate their district improvement analytic thinking and, through doing so, proceed to design and implement a comprehensive data analysis–informed district-wide *instructional improvement system* that can directly address the stagnant instructional teaming practices of educators in campuses throughout the district. Through combining multiple interrelated components focused on content knowledge and skills acquisition, project-based authentic data teaming, peer coaching and collegial mentoring, and informal team debriefing sessions into a fully integrated district-wide “*instructional improvement system*” PD intervention program, Beddington-Farnsworth district leaders were able to implement a targeted program that leveraged the power of immersive professional learning coupled with peer-to-peer coaching and collegial mentoring cycles that enabled educators involved to critically examine their own “deficit thinking” pedagogical attitudes/beliefs and instructional planning and teaching behaviors in ways that expanded and reinvigorated their team-centered learning.

Most importantly, educators’ involvement in the Beddington-Farnsworth PD intervention program empowered teachers and their instructional supervisors to reconceptualize how they approach their ongoing instructional data teaming efforts and become more actively committed to their own professional learning. The result of these collective efforts was that district and campus leaders were able to engage together with teachers in new ways to change educators’ ingrained mindsets and initiate a positive transformation in the teaching, leading, and professional learning culture of the entire district. It is hoped that the *design principles* emanating from the urban high school case study presented and discussed in this article may prove useful to education leaders working in a variety of K-12 school district settings who may want to explore using design-based school improvement methods to address their district’s persistent student learning improvement challenges. Through applying design-based thinking and PD intervention program development strategies to reframe and

address their district's student performance problems, district change agent leaders can achieve positive results in reinventing their district's staff development initiatives in ways that can motivate educators to want to learn how to *think different and work together in new ways* to transform and revitalize their ongoing, growth-oriented professional learning for the benefit of all diverse learners.

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