DUAL LANGUAGE PROGRAM LEADERSHIP IN HIGH NEEDS RURAL SCHOOL DISTRICTS:

A DESIGN APPROACH TO DEVELOPING TEACHERS' INSTRUCTIONAL TEAMING CAPACITIES TO SUPPORT THE BILITERACY ACADEMIC DEVELOPMENT OF EMERGENT BILINGUAL LEARNERS

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Abstract

One of the most pressing challenges confronting change-agent leaders in rural school districts in the United States is how to provide well designed instructional programs to meet the biliteracy academic development needs of emergent bilingual learners. This article examines how one language arts teacher / dual language coordinator and her instructional improvement team colleagues working in a high needs rural middle school leveraged *design research thinking and intervention development strategies* to: 1) engage in intensive data teaming to investigate the root causes of the persistent learning performance gaps of emergent bilingual students on their rural campus; and 2) develop and implement a design-based professional development intervention program for sixth, seventh, and eighth grade core content teachers to refocus teachers' individual and collective pedagogical perspectives regarding the perceived learning capabilities of emergent bilingual students and reinvigorate their team-centered interdisciplinary planning and classroom teaching practices. Change-agent leadership insights derived from an analysis of collective intervention design and implementation efforts completed by the instructional improvement team are presented and discussed within two areas: 1) leading instructional improvement initiatives in high needs rural school districts; and 2) leveraging immersive professional development to build core content teachers' dual language instructional teaming capacities. Finally, a set of *design principles* derived from the case study is presented that may be of practical use to rural school leaders interested in exploring the potential of design-based intervention methods to address the dual language programming needs of biliteracy learners.

Keywords

Dual Language Programming; Education Design Research; Teacher Deficit Thinking; Instructional Data Teaming

Introduction

Today's school improvement leaders in public school districts across the United States must grapple with how to effectively address an array of current instructional leadership challenges, including but not limited to: 1) how to create robust classroom-based STEM (i.e., science, technology, engineering, and math) project-based learning opportunities for elementary and secondary students to prepare young people to be able to compete globally for twenty-first-century career positions that require an array of STEM content and technology knowledge and a high level of social/communicative and solution-centered applied learning skills (Brophy et al., 2008; Estapa & Tank, 2017; Guzey et al., 2016; Roehrig et al., 2012); 2) how to effectively integrate computer and web-based connectivity systems into school district infrastructures and provide teachers and students with cutting-edge digital learning tools to enhance students' interactive, interconnected learning (Collins & Halverson, 2009; Ertmer & Ottenbreit-Leftwich, 2010; Hunter, 2015; Khan, 2012; Levin & Schrum, 2012; McLeod & Lehmann, 2012; Militello & Friend, 2013; Prensky, 2008, 2010; Richardson, 2010; Schrum & Levin, 2015; Sheninger, 2014; Tapscott, 2009); 3) how to transform classroom- and school-wide environments into dynamic *deeper learning cultures* for both students and teachers (Martinez & McGrath, 2014); and 4) how to assist teachers in learning how to engage together in "authentic data teaming" activities to investigate and identify the underlying root causes of students' learning

problems as intentional means to directly inform their instructional planning and classroom teaching practices (Allison et al., 2010; Bambrick-Santoyo, 2019; Bernhardt, 2013; Blanc et al., 2010; Boudett et al., 2010; Bowers et al., 2014; Bretzmann et al., 2015; Datnow & Park, 2014; Dufour et al., 2004; Dufour et al., 2016; Kennedy & Jones, 2015; Love et al., 2008; Love, 2009; Mandinach, 2012; Mandinach & Honey, 2008; Mandinach & Jackson, 2012; Margot & Kettler, 2019; Peery, 2011; Schildkamp et al., 2019; Venables, 2011, 2014; White, 2011). Notably, one of the most pressing challenges currently confronting many educators working in a variety of school district settings is how to address the academic development needs of the large and continually growing populations of *emergent bilingual learners* (many of whom may be from immigrant families) who are constituting a substantial percentage of the overall student populations of public-school districts in multiple states throughout the United States. These emergent bilingual learners—whose native language is not English and who are consequently learning English as their second "acquisition language" as they progress through elementary and secondary education programs in American schools—require that educators obtain current, literature-supported knowledge to help them understand the unique biliteracy academic learning needs of their emergent bilingual students as well as develop the necessary teacher teaming skills to be able to instructionally plan appropriate *dual language instructional units and classroom interactive peer-learning activities* that can effectively meet these students' academic learning development and support needs (Cummins, 1979, 1981, 2000; de Jong & Harper, 2005).

One promising approach to tackling persistent problems of practice involving teaching, leading, and learning improvement challenges in K-12 school districts such as the ones just noted has emerged in the past decade in the literature on education improvement science (McKenney & Reeves, 2012; Plomp & Nieveen, 2010; van den Akker et al., 2006). This literature has spawned an impressive body of practical research focusing on utilizing *design-based improvement thinking and operational strategies* to redirect the ways in which: 1) instructional improvement leaders go about investigating context-specific student-learning performance problems in their school districts; and 2) create data-informed intervention programs to address the professional growth needs of educators who are tasked with planning instructionally to support the academic learning development needs of their diverse students. As Anthony Kelly (2010) explains, "One of the broad goals of design research is to dynamically clarify the initial and goal states and the operators, and to illuminate the nature of the problem—i.e., to "tame" a wicked problem *by better specifying its character and making it open to intervention* [emphasis added]. In educational settings, design research is recommended when one or more of the following conditions operate to make the problem more wicked and open than simple and closed, for example: when the content knowledge to be learned is new or being discovered even by the experts; when how to teach the content is unclear: pedagogical content knowledge is poor; when the instructional materials are poor or not available; when the teachers' knowledge and skills are unsatisfactory; when the educational researchers' knowledge of the content and instructional strategies or instructional materials are poor; and when complex societal, policy or political factors may negatively affect progress." (Kelly, 2010, p. 76) This focus on accurate *problem identification* as a critical initial step toward developing and implementing carefully designed interventions that have the power to demonstrably improve educational practice makes design research an especially appealing approach that school improvement leaders can utilize in their school district settings to investigate and address persistent learning-improvement problems.

Purpose

The purpose of this article is to examine the multiple challenges confronting change-agent instructional improvement leaders in rural school district settings in providing for the biliteracy academic development needs of emergent bilingual learners. The middle school case study profiled in this article describes how a team of rural school leaders working in consultation with the author (a university-based rural school instructional improvement consultant) employed *design-based thinking methods and operational strategies* to engage in an intensive, systematic analysis of their middle school's student-learning performance scores in conjunction with related teacher planning data as the basis for designing, developing, and implementing a targeted professional development "instructional team learning" intervention program for sixth, seventh, and eighth grade teachers. The goal of the PD intervention was to: 1) provide grade-level teams of core content teachers with current literature-based "best practice" knowledge regarding the biliteracy academic development and instructional support needs of emergent bilingual learners; and 2) involve participating teachers in carefully designed *immersive project-learning experiences* on how to creatively design meaningful dual language interdisciplinary instructional units that can enhance interactive peer-learning opportunities for both emergent bilingual and native English–speaking students in their classrooms.

Research Methods

One recent "practical version" of education design research thinking that can be easily utilized in a variety of school district settings—the *Design-Based School Improvement Logic Model and Operational Steps Process* developed by Rick Mintrop (2016)—was used by the author to guide the data analysis and instructional intervention development and implementation activities of a team of educators involved in the rural school district case study profiled and

discussed in this article. The *Design-Based School Improvement Logic Model and Operational Steps Process* (Mintrop, 2016) was employed as it is very useful in assisting educators working in a context-specific school setting in learning how to work together as a "data team" to analyze multiple kinds of student learning performance data in conjunction with teacher instructional planning data to investigate potential underlying root causes of students' persistent learning problems. Employing the *Design-Based School Improvement Operational Steps Process* as a navigational roadmap to move through a well delineated series of "root causal data analysis" and "problem identification" activities than can then inform subsequent "design-based intervention program development" efforts, campus-based educator teams can leverage insights gleaned from their collective data analyses to inform the design and development of targeted professional development (PD) intervention programs for grade-level teachers. These PD intervention programs, when carefully designed and implemented, have the potential to redirect teachers' pedagogical thinking and invigorate their overall team-centered instructional planning and classroom teaching practices. This design-based school improvement approach articulated by Rick Mintrop (2016) was used to guide the instructional intervention work of one rural middle school change-agent leader and her instructional improvement team colleagues profiled in the case study presented below.

Rural Middle School Case Study

The rural middle school case study presented below provides a summary overview of the collective data analysis and intervention program development and implementation activities completed by a group of change-agent leaders in one rural school district in Texas. The case study highlights how these educators came together as an "instructional improvement team" to carefully analyze their middle school's available student-learning performance and teacher planning data to probe and identify some underlying root causes of students' learning deficiencies. The improvement team then leveraged the results of their data analysis efforts to design and implement an innovative "professional development intervention program" for core content teachers to redirect and revitalize teachers' instructional planning and classroom teaching practices to better meet the academic development needs of the campus's diverse students.

Dual Language Program Leadership in a High Needs Rural School District: Transforming Teachers' Instructional Planning and Classroom Teaching Practices through Immersive Professional Learning

Initial Framing of Gutierrez Middle School's Student-Learning Problem

Angelica Cardenas was excited to begin her new position in August 2022 as the Lead English/Language Arts teacher and Dual Language Coordinator at Hector J. Gutierrez Middle School in Candera-Bridgerton Independent School District (ISD) for the 2022-2023 school year. The Candera-Bridgerton superintendent tapped Cardenas for this promotion due to her excellent reputation as an effective dual language teacher and passionate advocate for the instructional support needs of the district's growing number of emergent bilingual students. Situated in a small rural community 32 miles outside a large, sprawling metroplex area in north central Texas, Candera-Bridgerton ISD serves an overall student population of approximately 5,800 students. The immigrant student population in this rural district community has grown steadily over the past several years, due in large part to proactive efforts by regional corporate business entities and local civic leaders to propel long-term, sustained economic growth in industry, as well as in retail and human services sectors, through attracting new employees from diverse backgrounds. The state of Texas itself is one of several "high immigrant population growth states" in the United States (along with California and New York) that has witnessed substantive increases in new immigrants in recent years, with sizeable numbers of Hispanic families from Central American countries such as Mexico, El Salvador, and Honduras arriving each year along with increasing numbers of immigrants from non-Hispanic countries such as India and China. With these population diversity growth trends continuing unabated, Texas has emerged in the last decade as a bellwether case for how a state's public education system—managing a sprawling statewide network of 1,204 school districts containing a total of 8,845 campuses serving the needs of 5.4 million Texas students in both densely populated urban centers and smaller rural communities—can work to effectively address the biliteracy academic development needs of the large numbers of culturally and linguistically diverse students enrolled in its school districts (source: Raise Your Hand Texas: Texas Public Education by the Numbers: 2023, retrieved at: https://www.raiseyourhandtexas.org/2023-texas-education-by-the-numbers/)

With twelve years' experience teaching English/Language Arts and Spanish for Spanish speakers in rural school districts in Texas—including teaching at Gutierrez Middle School, the only sixth through eighth grade "middle school" campus in Candera-Bridgerton ISD (housed in the same building as the district's ninth through twelfth grade "high school" campus) during the most recent four years and a personal history of growing up as a "bilingual [Spanish and English] learner" herself, Angelica Cardenas was well versed in the challenges involved in addressing the biliteracy academic development needs of the large and continually growing numbers of emergent bilingual (English as a second language) students in Texas classrooms, a majority of whom speak Spanish as their primary language at home. Because of her effectiveness in being able to plan instructionally to meet the biliteracy

learning needs of the district's emergent bilingual (EB) students, Angelica—affectionately referred to as "Ani" by her rural teacher colleagues—quickly earned a solid reputation within the Candera-Bridgerton school district as a highly effective English/language arts and dual language teacher. As a native Spanish language speaker herself, Ani was especially sensitive to the social and academic learning challenges of the EB students in her classrooms, many of whom along with their families were immigrants to the United States. Moreover, Ani understood that her EB students—because of their unique cultural and linguistic backgrounds—required focused and sustained dual language instructional support to be able to successfully navigate the hurdles involved in developing genuine academic fluency in both their native "heritage" language (Spanish) and in their "second acquisition" language (English). This kind of intentional dual language instructional support was especially critical at the middle school level, as many of her emergent bilingual learners have been students in the district for several years and had already progressed through the various Bilingual Education (BE) and English as a Second Language (ESL) programs available in the district's elementary schools. Unfortunately, due to a lack of consistent biliteracy development support through the elementary grades, by the time the vast majority of these EB students reach middle school their English language acquisition has stalled and/or is essentially "frozen". This lack of positive continuous progress in EB students' biliteracy academic development as they move through the elementary grades into the middle school curriculum creates an instructional support dilemma for middle school content area teachers who routinely become frustrated with these EB students' lagging academic learning performance gaps and their own inability to instructionally plan in ways that can adequately address these students' unique biliteracy learning challenges.

The content-area learning performance scores for emergent bilingual students at Gutierrez Middle School have been declining steadily over the past several academic years and the Candera-Bridgerton superintendent was counting on Ani Cardenas to be the kind of change-agent leader the district needed to initiate turnaround instructional improvement in the district—particularly at the middle school where EB students' learning performance gaps in English and other core content areas (math, science, social studies) in comparison with native English–speaking students were most pronounced. From her already well-developed familiarity with the learning support needs of EB students at Gutierrez Middle School along with her knowledge of the teacher professional learning culture existing on this campus, Ani Cardenas knew that leveraging her new instructional position as an opportunity to expand learning support for EB students would be a real leadership challenge. Nonetheless, after carefully reviewing available learning performance data for the campus's various student population groups, Ani knew that she needed to move forward proactively to initiate positive change. Based on her collective conversations with the Candera-Bridgerton superintendent and her analysis of multi-year student learning performance data for both the school district and the middle school campus, Ani was able to formulate the following **initial (*high inference*) "student-learning problem" statement** for Gutierrez Middle School:

> Cumulative student learning data for Candera-Bridgerton School District clearly indicate that emergent bilingual students continue to demonstrate significant learning performance gaps in all core content areas tested by the state in comparison with native English–speaking students. In addition, emergent bilingual students in sixth through eighth grades at Gutierrez Middle School are registering stagnant learning growth on the state's Texas English Language Proficiency Assessment System (TELPAS) English language proficiency assessments. Thus, the immediate student-learning improvement "high need" is to significantly accelerate EB students' dual language learning in all core content areas (English/language arts, math, science, and social studies). Extrapolating from this initial "student-learning problem" thinking, Ani then constructed the following **intuitive If/Then operational statement**: If I work proactively to provide relevant knowledge and coaching support to teachers during teachers' weekly grade-level Professional Learning Community (PLC) planning meetings to convince core content area teachers of the value of integrating dual language instruction into their overall instructional planning activities, then core content area teachers will learn how to work together within their weekly PLC planning meetings to develop and implement dual language interdisciplinary instructional units that can address the biliteracy academic development needs of Gutierrez Middle School's emergent bilingual students.

Armed with this data analysis–informed change-agent thinking and bolstered by her solid commitment to her students, Ani focused on substantively expanding content area teachers' multilingual instructional planning efforts through developing and implementing at the start of the 2022-2023 school year a *Dual Language Instructional Planning for Student Learning Success* initiative for all sixth through eighth grade core content area teachers at Gutierrez Middle School. The essence of Ani's instructional improvement "idea" was to get teachers to embrace the value of *dual language, cross-curricular teaming* as a meaningful instructional planning strategy, such that core content area teachers would want to learn how to plan culturally and linguistically rich multidisciplinary instructional units that can address the diverse cultural, social, and academic learning development needs of *all* students in their classrooms (emergent bilinguals and native English–speaking students). This initiative would require that core content area teachers (in English/language arts, math, science, and social studies) in each grade level work closely with Ani, as the school's Lead English/Language Arts teacher and Dual Language Coordinator,

within their weekly grade-level Professional Learning Community (PLC) planning meetings to redirect their instructional planning efforts toward focusing intentionally on *dual language interdisciplinary unit planning* as a means to better support the academic learning development needs of the emergent bilingual students in their classrooms. Convinced that this initiative would yield some positive results for her middle school campus, Ani enthusiastically delved into the formidable task of working with grade-level teams of teachers during the initial months of the 2022-2023 school year to assist core content teachers in learning how to retool their pedagogical thinking to integrate dual language programming into their overall instructional planning and classroom teaching practices.

During the first few weeks of the school year, Gutierrez Middle School core content area teachers seemed reasonably receptive to Ani Cardenas's new *Dual Language Instructional Planning for Student Learning Success* initiative and were cordial in conversations with Ani as they worked in their grade-level teams to explore how they would integrate this initiative in practical ways into their weekly grade-level instructional teaming planning routines. However, this initial cordiality was short-lived, as several teachers at this campus—many of them veteran content area teachers who have been teaching in the Candera-Bridgerton rural school district for some time—began to voice their concerns as the second nine weeks of the school year progressed. Indeed, these veteran teachers began to give Ani some pointed feedback during grade-level team meetings on their views of the practicality of Ani's "Dual Language Instructional Planning" initiative as well as their perceptions regarding the innate motivation levels and learning capabilities of Gutierrez Middle School's emergent bilingual (EB) students. During one teacher team meeting, Sarah Barnsdale, a long-time math teacher in the district and the most experienced of the two math teachers on the teaching staff at Gutierrez Middle School, offered her views on the challenges she and her teacher colleagues continually face in trying to plan instructionally for the school's EB students:

> I know that as educators our mission is to work to help all students learn. And, like the other teachers in the grade-level teams I'm a part of, I put a great deal of effort into planning instructionally so that students in my classes have genuine opportunities to interact with the content in multiple ways and internalize the math concepts and applications that are a central part of the district's math curriculum. However, in all honesty, the EB students in my classes are a continuing source of disruption. They are constantly talking to each other in Spanish and don't appear to have much interest in engaging with the other students in the class's planned math-learning activities. It's as if they are purposely staying off-task. It makes me wonder if they're interested in learning at all. Another teacher, Darrell Maddenton, a veteran science teacher at this middle school, was even more direct in sharing his perspectives regarding the learning motivations of EB students: I've been teaching middle school science for over two decades. The last fourteen of those years I've been teaching right here in Candera-Bridgerton ISD. Like most teachers, I've had my share of slow learners in my classes over the years and, to respond to struggling students' learning support needs, I've developed a variety of creative instructional strategies for helping students who have difficulties in mastering science content. And these strategies, for the most part, have proven to be quite effective in assisting the majority of students. But these emergent bilingual 'EB students' I currently have in my science classes are in a whole different category. It seems that they have given up on their own education and are simply not motivated to learn. Many of these immigrant students have been in the district for four or more years now and have participated in the Bilingual Education and ESL [English as a Second Language] programs at the elementary campus. These elementary programs are specifically designed to build these EB students' English language acquisition skills to the extent that, by the time they reach middle school, they should be ready to be able to fully grasp—in English—core content area concepts in science, math, and social studies and participate in classroom learning activities on a peer-learning basis with the native English–speaking students. If these EB students can't grasp core content and demonstrate learning proficiency across the tested core content areas 'in English' at the middle school level, how will they ever be able to pass the high school classes? It's just too much to ask of core content teachers to do any more with these EB students. I know this 'dual language instructional planning' initiative was devised with the best intentions, but we've got to concentrate on teaching the English-speaking students in our classrooms who are actually capable of learning the content and passing the state's exit exams!

It was with these and other similar objections gaining increasing predominance in her weekly interactions with teachers that Ani realized by the end of fall 2022 that she would need to initiate a major course correction in her change-agent leadership thinking if her new *Dual Language Instructional Planning for Student Learning Success* initiative was ever going to have any chance of succeeding at this rural middle school.

Refined Reframing of Gutierrez Middle School's Student-Learning Problem as a Context-Specific Problem of Professional Practice

Based on the growing negative feedback coming from core content teachers in reaction to the new *Dual Language Instructional Planning* initiative, Ani made the decision to form a campus-wide "instructional improvement team" to investigate more fully at both a surface- and deep structural–level the school's teaching and learning improvement needs. To staff this team Ani selected two teachers from each grade level whom Ani knew from experience were steadfastly committed to the goal of promoting positive teaching, leading, and learning improvement at Gutierrez Middle School for the benefit of all learners. To structure their team's efforts, Ani and her team colleagues proceeded to conduct an Exploratory Needs Assessment (ENA) in which the team collected multiple kinds of relevant data to focus their investigation into what could be some possible factors contributing to the persistent learning gaps demonstrated by emergent bilingual students in comparison with other student groups on the campus. The data collected by the team included: available student-learning benchmark data in all four core content areas (English/language arts, math, science, social studies) obtained through student-learning formative assessments across multiple nine-week cycles; student performance scores on core content area End of Course Exams; and relevant student scores on TELPAS assessments. In addition to these student data, Ani and her team collected observational data through attending and observing core content area teachers' discussions and interactions within weekly grade-level instructional planning meetings, as well as perspectivist data through informally interviewing multiple core content area teachers by grade level to obtain these teachers' views regarding their students' learning capabilities and the instructional planning challenges they were facing in designing instructional units to meet their students' diverse learning needs.

Data Analysis and Literature Review Activities. Ani and her team colleagues engaged together in carefully analyzing the various student-learning performance data and teacher observational and perspectivist data that were collected. Upon completion of their data analyses, Ani and her instructional improvement team were able to glean new data-informed insights into some "key factors" (i.e., underlying *root causes*) that were found to be contributing to and fueling the persistent academic development deficiencies among emergent bilingual students at Gutierrez Middle School. These insights focused on three root causal "key factors" in particular: 1) teachers' own entrenched attitudes regarding the perceived motivation levels and learning capabilities of emergent bilingual students; 2) grade-level teacher teams' limited instructional planning practices driven by teachers' inadequate knowledge and experience with authentic data teaming; and 3) teachers' lack of familiarity with best practices on *dual language programming* to support the biliteracy academic development of emergent bilingual learners.

To further explore these areas of concern (i.e., root causal key factors) identified through data analysis, Ani and her team reviewed multiple relevant literatures that they believed could provide useful information on current strategies and best practices in instructionally planning for and teaching diverse learners. The team's review efforts focused on the following literatures: 1) bilingualism and second language acquisition (Cummins, 1979, 1981, 2000; de Jong & Harper, 2005); 2) dual language instructional planning (Chin & Hamayan 2009; Goldenberg, 2008; Ramirez & Faltis, 2020); 3) teacher deficit thinking (Dudley-Marling, 2015; Dweck, 2016; Goddard et al., 2015; Valencia, 2010, 2015, 2020); and 4) authentic data teaming (Love et al., 2008; Love, 2009). These literatures collectively provided Ani and her team with additional insights and best practice strategies to inform their overall investigative efforts.

Problem Reframing. Ani and her instructional improvement team's collective analyses of student and teacher data in conjunction with their review of relevant instructional best practice literatures caused Ani and her team to "reframe" their investigative thinking regarding what could be possible underlying causes of emergent bilingual students' persistent academic learning deficiencies. Based on the insights gleaned from their review of the literatures on deficit thinking and bilingualism/biliteracy academic development in conjunction with their data analysis results, Ani and her team colleagues now realized that, in order to properly address the surface-level "EB student-learning performance gap" problem on their campus, they would have to refocus their change-agent leadership attention to addressing directly the underlying *root causes* of this student-learning problem. Ani and her team now understood that these root causes were, in fact, *professional practice issues* they were uncovering that were associated with teachers' own pedagogical thinking and instructional planning behaviors. Thus, Ani and her team generated the following new root-causal data analysis–informed **reframed (*low inference*) Problem of Professional Practice rationale statement** for Gutierrez Middle School educators:

> Gutierrez Middle School core content teachers have developed entrenched deficit thinking attitudes and are displaying 'fixed pedagogical mindsets' regarding the perceived motivation levels and learning potentials of our campus's emergent bilingual students. To counteract this negative bias against bilingualism, grade-level teams of core content teachers are in need of targeted coaching/collegial mentoring support from the campus's Dual Language Coordinator on how to integrate 'dual language [Spanish and English] instructional unit design' programming into their overall team planning practices to better address the academic development needs of emergent bilingual students.

Following from this reframed Problem of Professional Practice rationale statement, Ani and her team then formulated the following **refined Theory of Action (If/Then) operational statement**:

IF the middle school campus's Dual Language Coordinator works intentionally with sixth through eighth grade core content teachers to help these teachers learn how to engage in 'authentic data teaming' to identify and fully understand the cultural and linguistic underlying root causes of emergent bilingual students' biliteracy academic development deficiencies, THEN core content teachers will become open to critically reexamining their own pedagogical mindsets regarding the perceived learning potentials of emergent bilingual students and embrace the value of engaging together in 'dual language interdisciplinary unit planning' and 'dual language classroom instruction' to more effectively address the learning support needs of all students (emergent bilingual and native English-speaking students).

Based on the above analytic logic along with creative insights and team-planning strategies gleaned from review of relevant literatures, Ani and her instructional improvement team colleagues were able to construct the following **Gutierrez Middle School Change Drivers Diagram** (see Figure 1) to guide their "intervention program design planning" next steps.
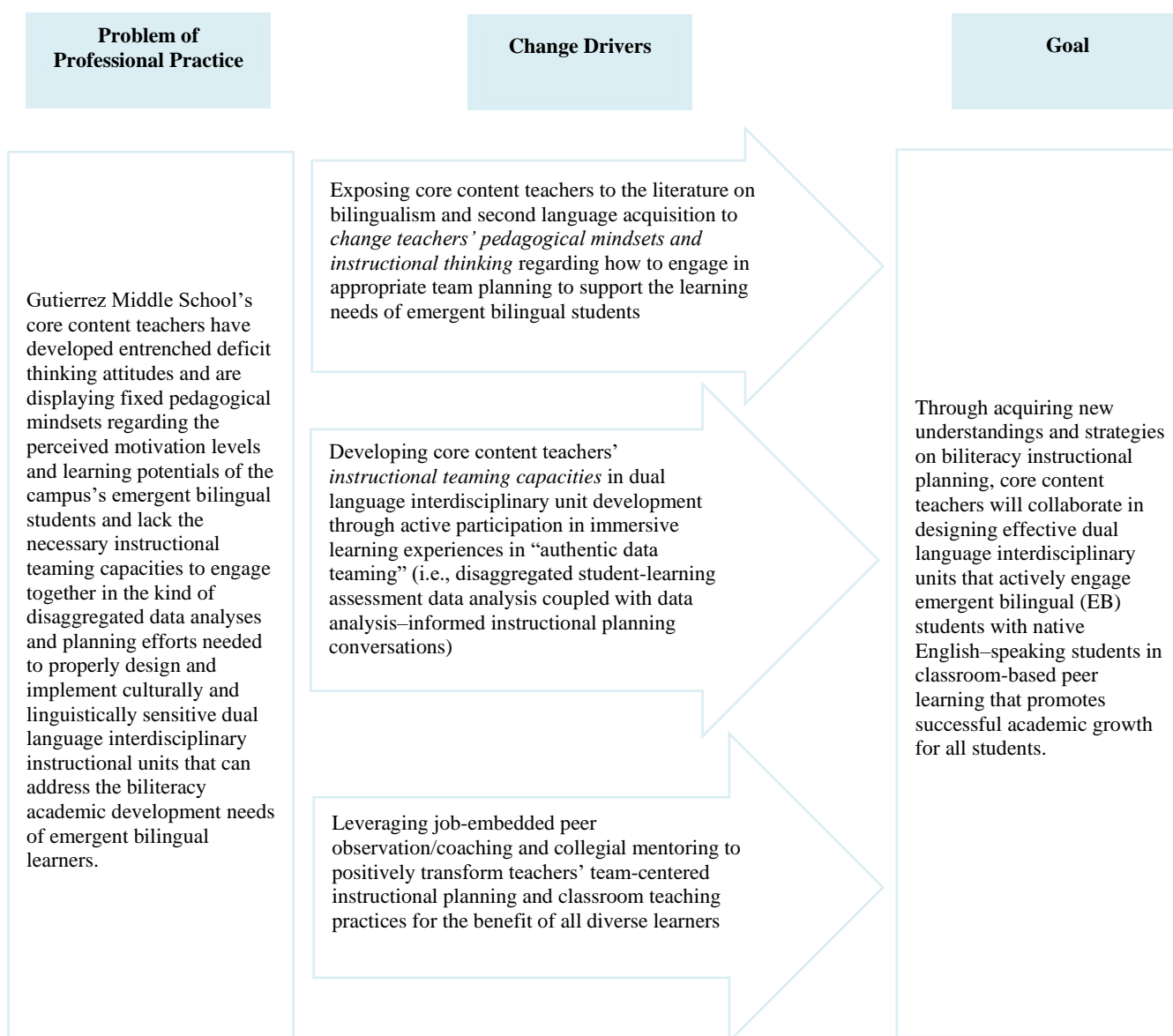
Problem of Professional Practice	Change Drivers	Goal
Gutierrez Middle School's core content teachers have developed entrenched deficit thinking attitudes and are displaying fixed pedagogical mindsets regarding the perceived motivation levels and learning potentials of the campus's emergent bilingual students and lack the necessary instructional teaming capacities to engage together in the kind of disaggregated data analyses and planning efforts needed to properly design and implement culturally and linguistically sensitive dual language interdisciplinary instructional units that can address the biliteracy academic development needs of emergent bilingual learners.	Exposing core content teachers to the literature on bilingualism and second language acquisition to *change teachers' pedagogical mindsets and instructional thinking* regarding how to engage in appropriate team planning to support the learning needs of emergent bilingual students	Through acquiring new understandings and strategies on biliteracy instructional planning, core content teachers will collaborate in designing effective dual language interdisciplinary units that actively engage emergent bilingual (EB) students with native English–speaking students in classroom-based peer learning that promotes successful academic growth for all students.
	Developing core content teachers' *instructional teaming capacities* in dual language interdisciplinary unit development through active participation in immersive learning experiences in "authentic data teaming" (i.e., disaggregated student-learning assessment data analysis coupled with data analysis–informed instructional planning conversations)	
	Leveraging job-embedded peer observation/coaching and collegial mentoring to positively transform teachers' team-centered instructional planning and classroom teaching practices for the benefit of all diverse learners	

Figure 1 Gutierrez Middle School Change Drivers Diagram

Intervention Design Development

Using the above analytic logic to guide their efforts, Ani and her team colleagues were able to identify three specific **change drivers** that they believed held promise as "drivers" of instructional improvement for Gutierrez Middle School teachers. The ***first change driver*** involves providing core content teachers with opportunities to become familiar with insights and strategies contained in the recent literature on bilingualism and second language acquisition on how to engage together knowledgeably in dual language instructional planning to address the unique

academic development needs of emergent bilingual learners. The ***second change driver*** focuses on tapping into the transformative power of immersive professional learning through involving core content teachers directly in learning about the two dimensions of authentic data teaming. These two dimensions require that teachers: 1) conduct "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) engage together in follow-up "data conversations" to discuss how the results of their collective disaggregated data analyses can inform and guide their differentiated instructional unit planning and classroom teaching practices. Finally, the ***third change driver*** highlights how instructional improvement leaders can leverage teachers' own collaborative involvement in job-embedded peer observation/coaching cycles of their instructional planning and classroom teaching as an intentional means to nurture a positive *collegial mentoring and growth–oriented professional learning culture* throughout the campus.

Utilizing their Change Drivers Diagram as a conceptual framework to guide their operational thinking, Ani and her instructional improvement team then proceeded to construct their **Instructional Improvement Intervention Program "Implementation Plan"** for the Gutierrez Middle School campus (see Table 1). The Gutierrez Middle School Intervention Program Implementation Plan consisted of multiple sets of professional development (PD) modules designed to involve the campus's core content teachers, under the guidance of the campus's Dual Language Coordinator, in multiple content knowledge acquisition and interactive applied learning activities to develop their instructional teaming capacities in the areas of *dual language interdisciplinary unit planning* and *dual language classroom instruction*.

WEEK	FORMAT	CONTENT / ACTIVITY
1	Meetings of all selected participants	Introducing key concepts: • What is bilingualism? • What is academic biliteracy? • How and to what extent do cultural and linguistic backgrounds impact the *biliteracy academic development* learning support needs of emergent bilingual (EB) students? • How can *dual language instructional programming* provide EB students with an appropriately supportive educational environment conducive to developing their native language literacy *and* biliteracy [Spanish and English] academic development? • Deciphering unintended educator biases regarding emergent bilingual students' "academic biliteracy" learning capabilities • How can core content teachers and the campus's Dual Language Coordinator engage together in meaningful *dual language interdisciplinary unit planning* to support EB students' successful "academic biliteracy" learning?
2	Meetings of all selected participants	Sessions on *authentic data teaming* practices: • Core content teachers and the campus's Dual Language Coordinator 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 EB students' learning deficiencies (i.e., factors that may be impeding emergent bilingual students' biliteracy academic development). • Core content teachers, with coaching from the campus's Dual Language Coordinator, 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 dual language interdisciplinary unit planning efforts. • Core content teachers (within each grade level) and the campus's Dual Language Coordinator participate together in a complete, grade level–specific *immersive team-learning project* (one project for each sixth, seventh, and eighth grade 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 "dual language interdisciplinary instructional unit" in their classrooms.
3 and 4	Classroom observation/peer coaching and collegial mentoring cycles	Teachers conduct multiple classroom observations of fellow teachers focused on dual language instructional strategies that promote emergent bilingual (native Spanish–speaking) and native English–speaking students' interactive peer learning • Core content teachers 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 biliteracy teaching practices. • Co-partner teacher teams also observe students to identify successful instructional strategies and activities that engage students in biliteracy deeper learning.

5	Debriefing sessions	Core content teachers participate together in a series of informal grade-level team meetings to reflect on their collective experiences and discuss new insights gleaned from their participation in the "knowledge and skills acquisition" and "multiple classroom observation/peer coaching and collegial mentoring cycle" components of the overall five-week intervention program.

Table 1 Gutierrez Middle School Instructional Improvement Intervention Program "Implementation Plan"

The Instructional Improvement Intervention Program Implementation Plan developed by Ani and her team was designed to provide Gutierrez Middle School core content teachers with current knowledge regarding the unique biliteracy academic development needs of emergent bilingual learners along with practical instructional planning strategies teachers can employ to expand their instructional teaming practices in the area of dual language interdisciplinary unit planning. The first week of the intervention program was structured to provide core content teachers with current literature-based content knowledge on key concepts (i.e., bilingualism, biliteracy academic development, dual language interdisciplinary teaming) that would inform and guide their incremental "applied team learning" through the five-week professional development experience. During the second week of the intervention program, core content teachers were provided with an opportunity to participate in an immersive learning project in which teachers (engaging together within their own grade-level teacher planning team) gained hands-on experience in the two dimensions of authentic data teaming, namely: 1) conducting *systematic analyses* of disaggregated student-learning performance data to investigate and identify possible underlying root causes of emergent bilingual students' learning deficiencies (i.e., factors that may be impeding emergent bilingual students' biliteracy academic development); and then 2) engaging together in follow-up *collaborative data conversations* about the results of their collective data analyses as a means to inform their subsequent dual language interdisciplinary unit planning efforts. In weeks three and four of the intervention program, teachers participated in multiple peer observation/coaching and collegial mentoring cycles in which core content teachers observed each other's classroom teaching, offered feedback to each other on strength and weakness areas observed in their teaching, and engaged together in informal collegial mentoring conversations on how they might work together as a team to further refine their instructional unit planning and classroom delivery practices to fully support students' academic learning. Finally, in the fifth week of the intervention program, teachers participated in a series of informal grade-level team debriefing sessions to reflect on their collective experiences during the professional development intervention program as well as discuss new insights gleaned from their participation in both the "knowledge and skills acquisition" and "observation/peer coaching and collegial mentoring cycle" components of the five-week intervention program.

The iterative sets of content knowledge acquisition meetings, team-learning project activities, observation/peer coaching and collegial mentoring cycles, and final team debriefing sessions constituting the five-week-long intervention program were designed to immerse core content teachers in a series of structured "team-learning experiences" intended to focus and incrementally build teachers' instructional teaming capacities in the areas of authentic data teaming, dual language interdisciplinary instructional unit planning, and peer-supported classroom teaching. The structured nature of the intervention program's *incremental instructional team capacity–building* professional learning design is illustrated in Figure 2 below (see Figure 2).
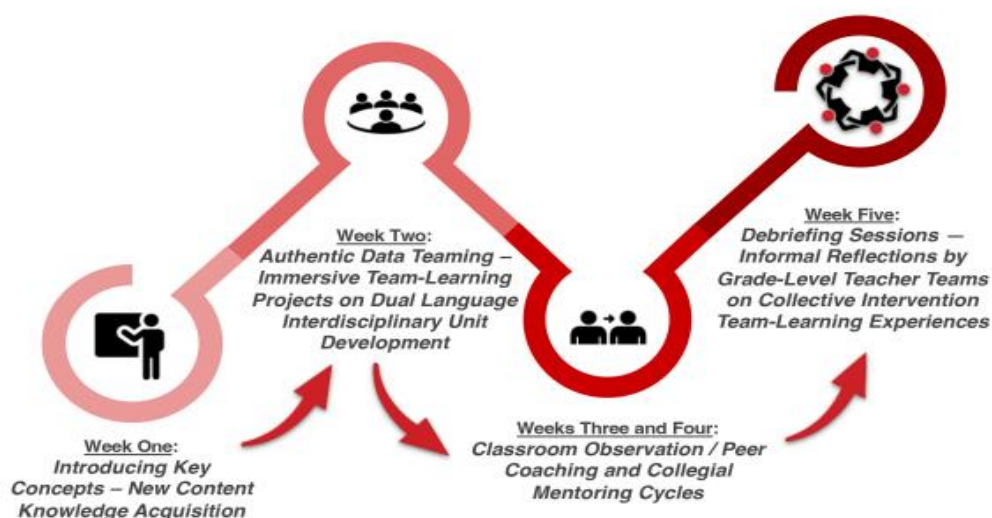

Figure 2 Incremental Instructional Team Capacity–Building Professional Learning Design of the Gutierrez Middle School Intervention Program

Design-Based Instructional Improvement Results and Findings

Through analyzing the various process and impact data collected during the implementation of the Gutierrez Middle School Instructional Improvement Intervention Program, Ani Cardenas and her team were able to identify some data-supported Design-Based School Improvement Results and Findings associated with this rural school district case study. The following design research *results* were identified that documented observable professional learning benefits that teachers experienced through their participation in the five-week professional learning intervention program. A first result that emerged from the Gutierrez Middle School Instructional Improvement Intervention Program's implementation was that the program's PD sessions—particularly the sessions on exposure to current knowledge and instructional planning best practices in addressing the academic learning challenges of second language acquisition learners—incentivized core content teachers to *rethink and expand their literature-informed understandings of the unique biliteracy academic development needs of immigrant "emergent bilingual" learners*. A second result that emerged from analysis of process and impact data collected during the five-week professional development intervention program was the realization by all participants involved (both instructional improvement team PD facilitators and core content teacher participants) that teachers' extended participation in the "multiple observation/coaching and collegial mentoring cycles" during the second half of the intervention program along with teachers' culminating reflective conversations within the final week's "debriefing sessions" caused teachers to *reevaluate their current professional practices and gain a new appreciation for the importance of "dual language instructional programming" as a value-added, integrative component of effective, team-centered interdisciplinary unit planning*.

These case study results enabled the generation of some broader professional learning outcomes (i.e., design research *findings*) emerging from the implementation of the Gutierrez Middle School's Instructional Improvement Intervention Program. The first finding gleaned from the case study's data-supported results was that sixth, seventh, and eighth grade teachers' collective activities in learning about the two components of "authentic data teaming" through their involvement in the grade level–specific "dual language interdisciplinary unit development" projects affirmed the usefulness of *immersive "hands-on, applied" project-based learning as an effective professional learning tool* to rejuvenate teachers' instructional planning and classroom teaching practices. The second finding derived from the case study's collective results was that applying education design research principles found in the improvement science literature can be a practical and effective means to enable teams of change-agent instructional improvement leaders working in their context-specific school situations to: 1) engage together in *data-informed investigations* of the underlying root causes of their campus's persistent student-learning deficiencies; and 2) leverage the results of these investigations to *design and implement targeted professional development intervention programs for educators* that can redirect and revitalize teachers' collaborative instructional planning and classroom teaching practices.

The above collective results and findings derived from the Gutierrez Middle School case study provide some positive supporting evidence for the practical usefulness to rural school improvement leaders tasked with addressing intractable teaching and learning improvement challenges in their districts of employing a *design-based approach* anchored in the education improvement science literature to: 1) investigate the "underlying root causes" of persistent student-learning problems on their campuses through analyzing multiple kinds of relevant data; and then 2) leverage the results of these data analysis efforts to develop and implement "targeted professional development intervention programs" for educators that can redirect and revitalize rural teachers' instructional practices.

Discussion

This section presents a literature-supported discussion of key change-agent leadership insights emerging from the case study profiled above regarding how educators can engage together in creative instructional team planning and interdisciplinary teaching to effectively address the dual language development needs of emergent bilingual learners in rural school districts. The discussion is organized into two sections focused on challenges and opportunities for instructional leaders in the areas of: 1) leading instructional improvement initiatives in high needs rural school districts; and 2) leveraging immersive professional development to build core content teachers' dual language instructional teaming capacities. The section concludes with a *set of design principles* derived from the case study's collective results and findings.

Leading Instructional Improvement Initiatives in High Needs Rural School Districts

Rural school districts, due in large part to their geographical distance from large urban centers and the educational support agencies that are located within these urban communities, are at a disadvantage in terms of being able to form active partnerships with multiple education organizations (e.g., regional colleges and universities, education service centers) that can lead to collaborative funding and personnel services support for their district programs. Moreover, instructional leaders in rural school districts—because of their limited fiscal resources—are often unable to internally fund instructional improvement initiatives that are often required to provide teaching staff with the

kinds of targeted professional development (PD) programs teachers need to support meaningful instructional change. Thus, change-agent leaders in rural school districts must think creatively and strategically to leverage their existing personnel and limited PD funds to jumpstart change and build core content teachers' instructional capacities in ways that can enable rural teachers to effectively address the learning needs of their diverse students.

One creative, cost-effective approach change-agent leaders in rural school districts can engage in—utilizing their existing personnel and funding resources—to effect meaningful instructional change and improvement in their rural districts is to apply core conceptual principles and operational strategies associated with *design-based improvement thinking* discussed in the current education improvement science literature (McKenney & Reeves, 2012; Plomp & Nieveen, 2010; van den Akker et al., 2006). As demonstrated in the rural school district case study profiled in this article, design-based school improvement methods—such as the authentic data teaming strategies and associated PD intervention design techniques utilized by Ani Cardenas and her instructional improvement team colleagues to develop and implement the targeted PD intervention program for their rural middle school teachers—can be utilized by instructional leaders working in a variety of rural district contexts to refocus teams of educators' energies toward learning how to: 1) engage together in systematic analyses of students' differentiated learning performance data and related teacher planning data as intentional means to gain new insights on possible underlying root causes associated with teachers' own professional practices that could be fueling students' persistent learning deficiencies; and 2) leverage these analysis results to inform and guide the development of data-informed, creatively structured PD intervention programs that can result in substantively expanding and invigorating teachers' team-centered professional learning.

In the Gutierrez Middle School case study, Ani and her team leveraged design-based thinking and operational strategies to collect and analyze student-learning assessment data as well as multiple kinds of teacher-teaming observational and perspectivist data as a means to investigate the underlying root causes of their middle school's emergent bilingual students' learning problems. Through doing so, Ani and her investigative team were able to identify some "key factors" (i.e., underlying root causes) that were contributing to fueling and perpetuating these student-learning problems. With the new insights they were able to accumulate through this data-intensive investigative process, Ani and her team were then able to proceed to engage in designing and implementing a creative "PD intervention program" for their middle school core content teachers that immersed the campus's teachers in new kinds of content knowledge acquisition and project-based team learning supported by multiple, iterative cycles of peer observation/coaching and collegial mentoring. These collective *immersive professional learning experiences* ultimately resulted in teachers gaining new shared insights regarding the perceived value of integrating "dual language programming" into their weekly interdisciplinary unit instructional planning practices. Through observing and providing feedback to each other during the "interdisciplinary unit classroom delivery" phase of the intervention (during weeks three and four of the intervention program), teachers were able to observe and discuss among themselves how the dual language approach could be utilized in effective ways to significantly expand and enrich both emergent bilingual and native English-speaking students' academic learning development. In short, Ani and her team were able to leverage *design-based school improvement thinking* to transform teachers' pedagogical mindsets and instructional teaming practices and, in so doing, reinvigorate the professional learning culture for all educators at this rural middle school.

Leveraging Immersive Professional Development to Build Core Content Teachers' Dual Language Instructional Teaming Capacities

The decision by Ani Cardenas and her instructional improvement team colleagues to incorporate a complete, grade level–specific *immersive team-learning project*—in which individual teams of core content teachers (one team within each sixth, seventh, and eighth grade level) worked together with coaching support from the campus's Dual Language Coordinator (Ani) to engage together in authentic data teaming and then, based on the results of their collective data analysis efforts, develop and implement a fully data analysis–informed "dual language interdisciplinary unit" in their classrooms—proved to be an especially valuable addition to the overall design of the Gutierrez Middle School Instructional Improvement Intervention Program. Through active participation in this structured immersive learning activity, grade-level core content teachers were able to gain "hands-on experience" in the two critical dimensions of authentic data teaming, namely: 1) working as a team to *systematically analyze student learning performance data* (i.e., available student-learning benchmark data in all four core content areas [English/language arts, math, science, social studies] obtained through student-learning formative assessments across multiple nine-week cycles; student performance scores on core content area End of Course Exams; and relevant student scores on TELPAS assessments); and then 2) engaging together in *collaborative data conversations* about the results of their data analyses to explore how teachers can leverage these analysis results to directly inform their subsequent dual language interdisciplinary unit planning efforts.

One of the core content teachers, a veteran seventh-grade math teacher, who participated in intervention program activities explained how her instructional planning perspectives changed as a result of her experiences in the "immersive team-learning project" component of the program in the following way:

Reviewing student formative assessment data to look for gaps in students' conceptual understandings is something I regularly do, so I didn't expect the 'authentic data teaming' part of the interdisciplinary unit development project to provide me with any new instructional insights I wasn't already aware of. But when our team was reviewing our grade-level student data—and especially when we were discussing how the emergent bilingual students in our classes always seemed to be lagging behind the other students in grasping key curricular concepts in the units we were teaching—my mind jumped back to the concept of 'linguistic interdependence' associated with academic biliteracy that we discussed in one of the initial PD intervention sessions. Following our review of student assessment data, and with this linguistic interdependence concept informing our thinking, our seventh-grade team then engaged in a lively discussion on how EB students may, in fact, not be able to fully comprehend and internalize key concepts in the units we're teaching because we as teachers are not actually assisting these EB students in 'setting up their learning' so that they can first process the new concepts using their native language (Spanish) as a 'linguistic anchor' and then transfer the newly internalized concepts—firmly understood first in Spanish— to their second acquisition language (English). This idea of using one's native language as a linguistic anchor to initially process and mentally internalize key curricular concepts as an important 'first step' in developing one's biliteracy academic learning made a lot of sense to me. This was a turning point for me in my instructional thinking. Through gaining exposure to the concepts on bilingualism and biliteracy academic development we studied during the initial PD module and then having an opportunity to 'apply' these concepts within our own team's data teaming activities, I now better appreciate the value of 'dual language instructional planning' as a positive tool that can be used to address the biliteracy development needs of our EB learners.

Another teacher participant in the intervention program, an eighth grade social studies teacher, had the following reactions to the team-learning project and subsequent peer coaching sessions:

The data teaming and interdisciplinary unit development project certainly opened my eyes to new instructional planning ideas I simply was not aware of before. But, for me, the most useful insights actually came during the observation/coaching and collegial mentoring sessions. I'm one of those people who really benefit from direct peer observation and feedback, so I was really looking forward to the constructive feedback I hoped to receive from my team colleagues on how successful they perceived me to be in implementing the dual language interdisciplinary unit we developed in my own classroom. Although I felt that my instructional delivery of the interdisciplinary unit went fairly well, my colleagues noticed some student-learning activities that they pointed out to me did not fully engage students in the kind of 'highly interactive deeper learning' that they felt could have occurred because of the ways I went about overly structuring the unit's learning activities for students. In short, my colleagues helped me realize that I was somewhat 'teacher-centric' in my organization and delivery of the unit, and that students' cultural and linguistic interactive peer-to-peer learning could be enhanced if I would trust the students more and let them take more direct ownership in exploring on their own how to structure and engage together within the unit's interdisciplinary learning activities.

These two teachers' views along with similar perspectives obtained from other core content teacher participants during and following the five-week Gutierrez Middle School Instructional Improvement Intervention Program provide some positive evidentiary support for the *transformative power of immersive professional learning*. Importantly, this teacher feedback suggests that integrating "immersive team-learning project activities" into larger professional learning program designs can be a valuable "hands-on experiential learning" technique that change-agent leaders can utilize as part of their overall design portfolio of creative professional development (PD) support strategies to invigorate educators' team-centered, peer-to-peer learning.

Design Principles Derived from the Gutierrez Middle School Case Study
The following is a set of *design principles* derived from the collective results and findings of the Gutierrez Middle School case study. These design principles may be of practical interest to rural school leaders tasked with developing and implementing instructional programs that can effectively address the unique academic development and learning support needs of the diverse student populations in their rural districts.

Utilize design-based thinking and intervention development methods to energize rural school district improvement efforts. School leaders working in rural district contexts can substantively enhance the overall effectiveness of their instructional improvement efforts through adopting a *design-based approach* to program performance review and intervention design planning to develop and implement innovative instructional programs that can meet the learning development and support needs of their diverse student populations. Moreover, through customizing and applying design-based thinking and associated intervention development methods that involve

leveraging the results of multi-leveled analyses of school/district teaching and learning performance data and interviews/discussions with education staff to probe teachers' specific professional learning needs, rural change-agent leaders can design and implement targeted professional development (PD) interventions for grade- and campus-level groups of teachers that can expand and refine teachers' instructional practices. These kinds of targeted PD interventions, in particular, can provide teachers with current knowledge, skills, and instructional strategies within a variety of "high need" instructional support areas—including in the area of planning instructionally for the biliteracy academic development needs of emergent bilingual learners—that teachers must internalize to be able to engage together in effective "data-informed, team-centered instructional planning" to ensure the learning success of the diverse students in their rural classrooms.

Capitalize on the power of immersive professional learning as a transformative tool to redirect and invigorate teachers' instructional teaming. Rural instructional improvement leaders can tap into the power of *immersive professional learning* to design and implement "hands-on" project-based learning experiences for teams of teachers that provide teachers with multiple opportunities to collaborative together in "authentic data teaming" activities to probe factors that may be inhibiting students' positive learning progress. Teachers can then utilize the results of their collective data analyses to inform their team-centered efforts to develop well designed "interdisciplinary instructional units" that can involve students in classroom-based peer learning projects that can facilitate and enhance students' real world–relevant deeper learning.

Expand the staff development design and delivery capacities of rural school districts through forging collaborative partnerships with regional higher education institutions and other education support entities. Education leaders in rural school districts who are hindered by limited fiscal resources and a lack of professional development support personnel can seek to develop collaborative partnerships with school improvement researchers in regional colleges and universities who have expertise in critical rural school improvement "high need" areas (such as: biliteracy/dual language instructional programming, authentic data teaming, early college high school "college-credit" programs for rural secondary students, etc.) and who can provide technical assistance on how to develop and implement state-of-the-art instructional programs to meet the academic learning development needs of diverse learners. Rural school district leaders can also pursue developing long-term partnering relationships with regional businesses and corporate entities who have a stake in the quality of the school-to-workforce educational development of today's rural youth and who can provide financial support through instructional improvement and technology expansion grants to support the educational mission of rural school districts.

Conclusion

The Gutierrez Middle School case study showcased and discussed in this article provides a vivid example of the unique context-specific challenges faced by instructional leaders working in rural school district settings in providing emergent bilingual students with creatively designed interdisciplinary learning opportunities that can effectively support their biliteracy academic development. The results and findings emerging from the case study provide some intriguing positive evidence for the usefulness to rural school improvement leaders of employing *design-based thinking methods and operational strategies* culled from the improvement science literature to: 1) refocus their improvement efforts through "reframing" student-learning problems as problems of professional practice through probing and identifying the underlying root causes of students' learning deficiencies (which can often involve teachers' own sometimes entrenched pedagogical mindsets and current instructional practices); and 2) leveraging the results of their root causal analyses to design and implement targeted "professional development (PD) intervention programs" that can involve groups of grade-level core content teachers in intensive immersive learning experiences that can refocus teachers' individual and collective pedagogical perspectives and reinvigorate their team-centered instructional planning and classroom teaching practices. As the middle school case study examined in this article demonstrates, school leaders interested in proactively addressing the persistent learning gaps and specific biliteracy academic development needs of emergent bilingual students in their rural school districts can adopt a design-based approach to this challenge through developing and implementing creative "immersive-learning intervention programs" for grade-level teachers. Importantly, these kinds of design-based intervention programs have considerable potential for assisting teachers in learning how to *think different and work together in new ways* as data-informed planning teams to craft dual language interdisciplinary instructional units and related interactive learning experiences that can effectively meet the academic development and support needs of the diverse learners in their classrooms.

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