

Co-Creating School Innovations: Should Self-Determination Be a Component of School Improvement?

CHRISTOPHER REDDING

University of Florida

SAMANTHA L. VIANO

George Mason University

Background: Research suggests a number of benefits from teacher participation in school improvement—chief among them that it can increase teacher receptivity to innovation and reform adoption. Improvement science has been put forward as a new paradigm for involving local school stakeholders in the improvement process.

Purpose: We describe the beliefs held by teachers and teacher leaders during the development and implementation of a locally developed innovation. To explain why the beliefs of these two school stakeholder groups would differ, and the implications these differences have on receptivity to the innovation, we merge the sensemaking framework and status risk theory.

Setting: Three high schools in a large urban school district in the southwestern United States.

Research Design: The data for this study come from a seven-year study of the process of scaling up effective practices in a large urban district. This qualitative case study is based on transcripts from 260 semistructured interviews and 24 focus groups with development team members and teachers. We analyzed transcripts to understand participants' attitudes toward and understanding of the innovation design.

Findings: Allowing for teacher self-determination in the innovation design and implementation helped to garner a high level of teacher buy-in to the innovation. Compared with externally developed reforms, the innovation was less challenging to teacher autonomy and was customized to fit the needs of their students. These conditions led to high levels of teacher ownership over the innovation. Yet, in the process, teacher leaders grounded the innovation in preexisting and easy-to-implement practices that did not require significant investment from teachers to adopt.

Conclusions: Teacher self-determination in the innovation development process contributed to greater teacher ownership of, and receptivity to, organizational change, but at the cost of adopting more ambitious practices that likely had a greater chance of improving instruction and positive student outcomes.

Decades of research attest to the fundamental role that context plays when transplanting educational reform from one site to another (Berman & McLaughlin, 1976; Datnow, Hubbard, & Mehan, 2002; Fullan, 2000). School improvement models developed in one locale and implemented in different schools tend to be adapted to their context, often to the point that the original design loses coherence (Berends, Bodilly, & Kirby, 2002; Datnow et al., 2002; Desimone, 2002; Vernez, Karam, Mariano, & DeMartini, 2006). Ambitious whole-school reform continues to be implemented, typically in ways that drastically depart from their initial design principles and generally yield less than desired results, particularly for underserved student subgroups (Bifulco, Duncombe, & Yinger, 2005; Borman, Hewes, Overman, & Brown, 2003; Gross, Booker, & Goldhaber, 2009).

School improvement researchers attribute this local adaptation to two broad forces. First, programs are implemented amid a web of school, district, and state policies and programs, which alter how a new program is embedded within classrooms (Datnow, 2005). Second, teachers tend to have considerable oversight shaping *if* and *how* they implement new programs and practices. As a result, teachers tailor practices to the particular needs of their students, often changing the nature of the design in the process (Bodilly, 2001). Because local adaptation is the norm in educational implementation, the question remains, If teachers are going to tailor reforms to fit their students' needs, could reform creation more actively involve site-based educators from the onset?

In response to the repeated failure of implementing promising reform ideas in new settings (Bryk & Gomez, 2008), improvement science has been put forward as a new paradigm for taking effective practices to scale (Bryk, Gomez, Grunow, & LeMahieu, 2015; Cohen-Vogel et al., 2015; Lewis, 2015). In contrast to school reform, which implies large-scale structural changes to the organization of schools, the focus of improvement science is on innovations, the small-scale changes made by educators that tend to be confined to their original classroom or school without mechanisms to be shared more widely (Redding, Cannata, & Miller, 2018). The process of continuous improvement in this study identified effective school practices within a district that could be spread to additional schools by integrating these innovations into existing systems of knowledge and expertise. The goal of this approach was to draw on local knowledge to build shared ownership for improvement. We study the process by which teacher-led school development teams at three high schools developed the innovation design to meet the needs of their unique school contexts with the eventual purpose of scaling up their innovation design throughout the district.

The purpose of this article is twofold. We describe the beliefs held by teachers and teacher leaders during the development and implementation of a locally developed innovation. The sensemaking framework is particularly applicable for this analysis because schools are made up of employees and supervisors who interpret information in different and important ways. The sensemaking of school stakeholders has serious implications for teacher commitment and buy-in to school improvement efforts (Spillane, Reiser, & Reimer, 2002). To help explain why the beliefs of these two school stakeholder groups would differ, we draw on status risk theory, which suggests that teachers' receptivity to innovation is dependent on their status in the organization and the risks posed by adopting organizational innovation.

In an era when teachers are asked to implement steady waves of new practices, often with little rationale, understanding teachers' beliefs is particularly important. Past research has focused on teacher understanding of externally developed curricular reforms, comprehensive school reform, and leadership or mentoring programs (Cho & Wayman, 2014; Coburn, 2001, 2005; März & Kelchtermans, 2013; Schmidt & Datnow, 2005; Slegers, Wassink, van Veen, & Imants, 2009). In contrast, this study investigates the sensemaking process around a co-created, site-based innovation where the stakeholders have direct knowledge of both program components and source of the program. In previous sensemaking literature, the reforms came from either federal, state, district, or school leadership sources. The innovation in this study is almost completely self-determined by school and district stakeholders, and we would expect their sensemaking to differ because of their involvement in this collaborative process. As well, we might expect for teachers who are at the school but not part of the design process to have different views of an innovation that is created by their colleagues.

This article makes an important theoretical contribution by merging status risk theory with the sensemaking literature. Status risk theory tries to understand the beliefs and attitudes teachers draw on to decide whether to adopt organizational innovations, an important insight we will use when applying a sensemaking framework to implementation of a schoolwide innovation. Applying this theoretical framework to a continuous improvement reform model yields helpful insights for practitioners and researchers. The empirical significance of this article comes from the discussion of the ways in which teacher leaders' involvement in the development of organizational innovations created a design that enhanced teacher receptivity to reform. Yet, they achieved greater teacher buy-in by adopting less ambitious practices that were less likely to make sustained improvements to student outcomes. Because teachers were not only involved in

implementation, as is the case with most school reform, but also involved in the development of the innovation, there were more opportunities to shape the innovation in ways that reduced the organizational burden of adopting new practices.

With growing interest and financial support for continuous improvement approaches to educational implementation, we believe it is important to begin to understand possible benefits and the unique challenges of this approach to school improvement. For this article, we draw on longitudinal case study data collected at three points across two school years from three partner schools in one large urban school district. In doing so, we explore how a process that is built around adaptation and alignment of practices to school context may enhance teachers' perceptions of school improvement efforts. This study is driven by two research questions: (1) In what ways does self-determination inform teacher leaders' beliefs and collective understanding of the co-created innovation? (2) How do teachers not involved in the design or development process perceive this locally developed innovation?

LITERATURE REVIEW

CONTINUOUS IMPROVEMENT APPROACHES TO SCHOOL IMPROVEMENT

Continuous improvement can be characterized by three features: (1) identification of a shared problem orientation; (2) use of a continuous improvement model, such as the Plan-Do-Study-Act process, to study the implementation and outcomes of an innovation; and (3) creation of partnerships between local stakeholders, researchers, and program developers (Bryk et al., 2015). What unifies these three features is the goal of making sustained improvements in schools. This goal offers several ways for local participation in the improvement process.

The research on continuous improvement approaches to school improvement has tended to highlight how stakeholder participation is linked to more successful program adoption. One example is research on the Building a Teaching Effectiveness Network (BTEN) (Hannan, Russell, Takahashi, & Park, 2015; Park, Takahashi, & White, 2014). BTEN sought to support early-career teachers through providing a structured feedback process. As a first step, researchers at the Carnegie Foundation for the Advancement of Teaching drew on interviews and practitioner feedback to identify a set of interconnected district, school, and classroom components that comprise an effective new teacher feedback system (Park et al., 2014). This research led to the development of

the Feedback Management System to help districts and schools coordinate their support for new teachers. Next, partner districts adopted the feedback system, integrating it into existing systems and routines within their schools. By participating in this improvement process, Hannan and colleagues (2015) argued that districts had a high degree of enactment of the new teacher feedback system. In a study on design-based professional development for developmental mathematics faculty, Gomez and colleagues (2015) wrote,

Design differs from traditional professional development in that the design settings we constructed allow faculty specific opportunities to engage in these practices in their classrooms, to reflect on the efficacy of their practices, and their role in them as design team members in their own right. The practices come to work because the teachers as improvement researchers make them work. In making them work, they build understanding of, and commitment to, them as practices. (p. 461)

While participation in the innovation design process likely builds this commitment to maintain a practice for those involved in the design process, it also raises several challenges, which we discuss in the next section.

PARTICIPATION IN SCHOOL IMPROVEMENT

Participation has been used in the literature to indicate a range of active and passive forms of involvement with adopting and implementing new school reforms or innovations (Conley, 1991). For instance, some comprehensive school reform models required at least 80% staff approval to adopt a particular reform model, a type of participation that is generally seen as a positive indicator of teachers' initial support for a program (Desimone, 2002). Yet, in the case of comprehensive school reform, principals tended to choose reform models without teacher input, teachers often had poor information of what implementation would entail, and they failed to vote based on their actual preference, instead voting based on pressure from administrators or other teachers (Vernez et al., 2006). Further, reform models were highly prescriptive and did not allow teacher self-determination in the reform development. With minimal opportunity for participation in the reform process, teachers were generally uncommitted to their reform model, resulting in variable and inconsistent implementation (Berends et al., 2002; Vernez et al., 2006).

In contrast, models of distributed and teacher leadership emphasize the role of teachers in the innovation design and development process—what

we define as teachers being engaged in a process of *self-determination*. York-Barr and Duke (2004) identified three ways in which schools may benefit from this teacher self-determination. First, from a pragmatic standpoint, administrators may require additional support to develop and carry out school programs. Second, teachers' organizational knowledge can help principals make more effective decisions. Third, teacher self-determination creates greater ownership over school improvement efforts, avoiding or reducing resistance and achieving greater commitment to organizational change (Conley, 1991; Giacquinta, 1973; Weiss, Cambone, & Wyeth, 1992).

Although some forms of teacher participation have been viewed as vital for school improvement efforts, there are potential pitfalls. Active leadership opportunities only tend to be available to a segment of teachers. The assignment of teacher leaders within a school can conflict with professional norms of egalitarianism (York-Barr & Duke, 2004). For instance, studying the interactions between teachers and teacher leaders, Smylie (1992) found that teachers who believed in professional equality were less likely to seek help from teacher leaders in regard to classroom instruction, even when controlling for the school social context. Critics of self-determination in school improvement efforts also contend that schools and districts often have insufficient capacity to undertake ambitious instructional reform (Leithwood & Menzies, 1998).

In addition to capacity constraints, teachers' understanding, beliefs, and attitudes—their sensemaking—also have implications for the implementation of new programs and practices (Spillane et al., 2002; Weick, 1995). Spillane and colleagues described how school stakeholders tasked with implementing new programs make sense of the innovation through their own prior experience and beliefs, the context of their school, and the messages they are receiving from the hierarchy above them and their peers. Sensemaking provides a helpful orientation for this study, given our goal of understanding the beliefs of teachers and teacher leaders as they developed and implemented a locally developed reform. To study sensemaking is to evaluate individual and collective sensemaking as well as how these sources intertwine with each other over time. Individuals' own sensemaking notices different themes from each of these sources, and the collective sensemaking within groups of teachers or school staff will differ in the interpretation of signals from the individuals who make up that group.

Studying teacher sensemaking has allowed researchers to evaluate how teachers merge knowledge of new organizational innovations with existing schema. In Coburn's (2001) study of teachers' collective sensemaking of reading reform, she found that teachers co-constructed their understanding of the reform through conversations with their colleagues.

One way teachers came to understand the new reform was by assessing the extent to which new elements of the reform fit with their existing instructional approaches. When teachers could not identify a way to merge new messages about reading instruction with preexisting instructional practices, teachers dropped these new practices. Another way teachers understood the reform was by understating differences between activities performed in the past and new activities in the reform. Spillane and colleagues (2002) affirmed this finding, emphasizing how teachers often minimize the differences between new, often more ambitious instructional practices and teachers' current instructional routines. They wrote, "Thus the teachers constructed understandings of the reform ideas that fit within their existing models for mathematics and mathematics instruction rather than substantially rethinking them, leading to important differences between the intended policy and these teachers' understanding" (p. 399).

Previous research has assessed sensemaking of individual teachers or groups of teachers implementing a new curriculum (Coburn, 2001, 2005; März & Kelchtermans, 2013) and comprehensive school reform (Schmidt & Datnow, 2005). However, the literature has yet to investigate how self-determination factors into sensemaking around locally developed innovations. Considering the great degree of autonomy and processing time that can go into creating the innovation studied in this article, teacher sensemaking could greatly differ between teachers who actively participate in co-creating the innovation and those teachers asked to implement it. To explain differences in teachers' receptivity to the innovation design, we merge the rich literature on teacher sensemaking with status risk theory.

STATUS RISK THEORY

Within the status risk framework, a sensemaking perspective allows us to focus on how teachers report feeling about proposed innovations (Giacquinta, 1975). Further, status risk theory helps explain differences between the beliefs of teacher leaders and other teachers in the school. Giacquinta's (1975, 2005) status risk theory¹ posits that teacher receptivity to change is related to two factors: (1) it is associated with teachers' status in the organization, and (2) it carries up-front risks with uncertain benefits. The introduction of an innovation is risky inasmuch as there is a "cost" associated with adopting a new practice in regard to the teachers' status in the school. In a school reform climate where teachers face waves of programs and practices, little of which is sustained, it would be costly to adopt every new practice when only

some practices may benefit their instruction. Further, because of differences in teachers' statuses in schools, some teachers face more risk than others regarding the innovation. For instance, in the continuous improvement reform models studied in this article, teacher leaders who participate in the innovation design and development process are invested in the innovation's adoption and sustained implementation. If the innovation is adopted by their peers, their teaching and the overall climate of the school would theoretically be improved, and their administrators and colleagues will identify them for their effort developing the innovation. If the program fails to take hold, the teacher leader does not receive the benefit, has dedicated time and effort to what turned out to be a fruitless cause, and may have even have strained his or her relationship with colleagues in the school.

Teachers uninvolved in the innovation development process face a different set of risks. Compared with externally developed reform, teachers are likely more receptive to locally developed innovations for a few reasons. First, not implementing the innovation may damage collegial relationships with those teachers who developed the innovation. Second, teacher leaders are positioned to develop the innovation to align with existing programs and practices, creating an innovation that carries less risk to adopt. In other words, teacher leaders might avoid more ambitious instructional practices that require more investment from their fellow teachers. Third, teacher leaders may elicit feedback or even active participation from their colleagues, who could shape the innovation in a way that carries the fewest personal risks and most benefits. In other words, teacher self-determination in the reform process may allow teachers to minimize differences to their current practice.

Self-determination likely fosters greater receptivity among teachers in the school. To achieve greater ownership, teacher leaders will gravitate toward an innovation design that emphasizes easy-to-implement practices, in contrast to more ambitious practices that have a greater chance of improving instruction and positive student outcomes but come with higher risks. Giacquinta (2005) cautioned, "Participation, at least in some portion of change efforts, may work at one level—gaining member consensus and cooperation—but may do damage at another level—undermining the innovation's power to eradicate the difficulty that precipitated it in the first place" (p. 174). In the context of a continuous improvement reform model that emphasizes the importance of participation, status risk theory allows us to describe differences in teacher beliefs, depending on a teacher's status in the school. Sensemaking allows us to describe how teachers' understanding, beliefs, and attitudes shape the development and implementation of new programs and practices.

METHOD

SITE SELECTION

The data used in this article were collected as part of a larger study that explored new approaches to scaling effective practices within large urban school districts. This study takes place in a district in the southwestern United States that serves approximately 80,000 students, the majority of whom are low-income or from traditionally underserved racial/ethnic groups. Approximately a quarter of all students in the district are classified as limited English proficient (LEP). The schools in this study—Desert Grove, Forest Glen, and Valley High Schools²—all serve high concentrations of low-income students and students of color. Demographic characteristics of the schools are reported in Appendix A. Schools were selected purposefully in collaboration with district personnel and school administrators based on two main criteria. First, sampled schools were all moderately performing schools in the district that were seen as having room for improvements. Second, sampled schools were viewed by the district as having the preexisting organizational capacity to benefit from this continuous improvement model.

CASE STUDY DATA COLLECTION

Data were collected from the three partner schools during three site visits and interviews by phone. In the winter of 2013, a team of seven researchers spent one day in each of the innovation schools. The following school year, teams of three researchers spent a week in each of the schools in the fall and spring. We drew on data from semistructured interviews with development team members, teachers, and other support staff and focus groups with teachers and other support staff. During the winter visit, the research team interviewed 47 school stakeholders and held six teacher focus groups across the three schools. The following fall, the research team interviewed 105 school personnel and held nine focus groups. That spring, the research team interviewed 108 school personnel and held nine focus groups. Except in the case of teacher turnover, we reinterviewed development team members during both visits. In addition to the school-based fieldwork, a subsample of the development team was given more extensive interviews in the summer of 2014 over the phone. In Appendix B, we report the pseudonymous names and role of the interviewees for the participants referenced in our study.

DATA ANALYSIS

Data analysis was recursive in nature, with emergent themes from the first round of data collection shaping ongoing data collection efforts. Following each field visit, interview and focus group transcripts were coded based on an initial coding schema related to a framework for quality implementation. From this framework, we drew on transcripts coded for teachers' attitudes toward and understanding of the innovation design (i.e., teacher sensemaking). We then took a data-driven approach to coding, developing codes inductively through iterative coding (Corbin & Strauss, 2008; Miles & Huberman, 1994). Using the NVivo software, we sifted through the transcript data to identify emergent themes. After discussing emergent themes, we developed codes inductively through directed content analysis. After this iterative process, we had four codes: (1) referencing the past, (2) difference minimizing, (3) face validity, and (4) ownership. Definitions and examples are provided in Table 1. Throughout the coding process, we met to discuss questions and address misconceptions.

When coding, we were sensitive to the extent to which these codes matched the experiences of school stakeholders. In particular, we report on agreed-on perspectives and note cases that run counter to this perspective. The credibility of our findings is further enhanced through triangulation, peer debriefing, and member checking. The incorporation of interviews with multiple school stakeholders across multiple points of time allowed for a triangulation of our findings across various school personnel. In addition, peer debriefing took place at every session as multiple researchers were collecting data during each session and then involved in collectively writing session summary reports of the findings. Last, the partnership model of this project involved ongoing interactions with school and district participants. These interactions allowed for the research team to confirm our findings with these participants at multiple points throughout the project.

CONTEXT OF THE REFORM

DISTRICT'S APPROACH TO SCHOOL REFORM

The district has faced a long history of test-based accountability. Most recently, the state transitioned to a series of 12 end-of-course assessments. In response to the state standards and accountability system, the district central office staff developed their own detailed curriculum frameworks in collaboration with teachers throughout the district. Frameworks include pacing guides and recommended activities, particularly in tested subjects.

Table 1. Definition of Analytic Codes

Code	Definition	Example
Referencing the Past	Experience with past reforms informs the sensemaking of the co-created innovation.	“I just—I believed in it. We have— Our school has gone through a huge change. I mean, I’ve been there eight years, and we were one of the bottom schools in our district, the 13 high schools, and this past year with testing, we were like top four, so we’ve already done some things in our school to make huge changes, but I think this will even set us higher. I believe this will make the kids more responsible and accountable for their own education.”
Difference Minimizing	Teachers describe minimizing the differences between the innovation and current practice, often through the adoption of easy-to-implement low-leverage practices in favor of high-leverage changes.	“[H]elping our more veteran teachers understand this is not something new. All we’re doing is taking what we’ve done before and making it more—putting it in a format that makes more sense and is easier to do.”
Face Validity	Teachers believe the innovation will result in improvements for students or express positive beliefs about the applicability of the innovation to teaching practice.	“[The innovation] would help them with all their stuff if they would take ownership, and I’ve always wanted them to take ownership of what they’re doing because I feel if they take ownership of it they’re going to enjoy the class instead of seeing it as a drudgery, like they don’t want to be there, because they don’t have any buy-in to what we’re talking about.”
Ownership	Sensemaking of the innovation itself by viewing it as personally reflecting their own perspective. Can also refer to the lack of ownership, viewing the reform as foreign because of the lack of ownership or self-determination.	“I feel a lot more prepared since we’ve been through all of this. You know, if you would have asked me this last year, I’d have said, oh, not very prepared. After we’ve been through all of our revisions and changes, lessons, and figuring out lessons and what we’re going to do and had all our fights and arguments and everything, I think we’re going to be a lot better.”

The pacing guides correspond with curriculum-based assessments, which are administered every six weeks. During the study, the district transformed departmental meetings into professional learning communities, with tested subject teachers having a shared planning period and set weekly meetings.

Overall, the district officially has a site-based approach to reform, with the vision and goals for a school being established by each school's leadership team. However, the district central office often does not follow the site-based management goals and has a reputation for introducing its own reform strategies. In the 2013–2014 school year, the year when the school-based development teams were tasked with creating the reform, a large number of districtwide reforms were implemented that reflected the agenda of the superintendent of schools. However, this superintendent resigned at the end of the 2013–2014 school year, leaving the district without a permanent superintendent. While this history of various reforms is evident from veteran teachers' descriptions of the district, fewer programs were introduced at the start of the 2014–2015 school year compared with previous years.

THE STUDENT OWNERSHIP AND RESPONSIBILITY INNOVATION

The basis for the Student Ownership and Responsibility (SOAR) innovation came from research in higher performing schools in the district (Cannata, Smith, & Haynes, 2017). This research was distilled and shared with district and school development teams and formed the basis of their design. Appendices C and D provide samples of the types of documents shared with development team members. The district innovation development team spent the winter and spring of 2013 designing an initial SOAR prototype that could be implemented in schools throughout the district. In the summer of 2013, the school-based innovation development teams were introduced to the design prototype that the district-based team had worked on for the previous six months. The school-based teams were then tasked with taking the work of the district team and adapting it to fit their individual school context. The teams identified the actual practices and programs needed to grow student ownership and responsibility and tested these components at their school sites using a continuous improvement model. Although the delivery of SOAR varied across schools based on each team's analysis of their school's problems, each school's design consisted of teaching students about growth mindset and problem solving. For instance, Forest Glen used a weekly advisory period for small discussion of these and other topics. Desert Grove had one day at the beginning of the year dedicated

to teaching students about growth mindset and then embedded the concept in classroom instruction or during a grade monitoring activity they conducted every three weeks.

Throughout this design process, the developers facilitated meetings and helped the school-based teams with materials such as lesson plans, although all the program components were suggested or endorsed by the school-based teams. During the first visit in winter 2013, the school-based teams were engaged in the process of creating and testing innovation components. During the summer 2014 interviews, the school-based teams were preparing to implement the innovation schoolwide after a year of meetings and testing the innovation components. Finally, during the fall 2014 and spring 2015 visits, the school-based teams were in the midst of schoolwide implementation of the innovation, which had started at the beginning of the school year.

FINDINGS

REFERENCING THE PAST

The first theme that emerged from the iterative coding practice is what we term *referencing the past*. This code refers to when teachers speak of the current innovation, SOAR, by relating it to previous reforms or experiences within their school setting. How the teachers respond to SOAR is informed by previous experience with both teacher-led innovations and district- and school-mandated reforms. As well, teachers who designed and developed SOAR use their previous experiences to build their self-conception of what the innovation will look like in their schools.

During the visit in winter 2013, the teacher leaders were particularly aware of how the innovation they were developing compared with previous programs at their schools. In particular, two of the schools, Desert Grove and Forest Glen, had previously implemented teacher-led literacy initiatives that the teachers felt were particularly good programs to emulate. Especially at Desert Grove, the teachers felt strongly that as long as their initiative was well designed, teachers would respond positively because the literacy initiative had gone so well. The implementation of Forest Glen's literacy initiative had built a great degree of trust among the staff that teacher-led programs would improve students' skills. As Alexa, a member of the school development team, said, "I think what I've sensed from being here at [Forest Glen] is that really the teachers are willing to do almost anything if you can explain the value . . . if ultimately you can explain why it's an initiative that we're working on and how it's gonna benefit the kids."

Teachers at Desert Grove were the most explicit in framing the innovation based on the previous efforts implementing a schoolwide literacy initiative. Some teachers at this school saw the similarities with this program, among them overlapping leadership, the emphasis on shared practices across all departments, and the explicit teaching of learning strategies. Teachers' perceptions of this initiative informed their understanding of the innovation. Those ambivalent to the literacy initiative were skeptical of this new undertaking. Chelsea, a veteran English language arts teacher, highlighted how it was always the same people to roll out new programs at their school, with insufficient feedback from the rest of the teaching staff. She stated, "It's like it sort of just emerged out of somewhere and then you know, that's what we're doing now. So, you know, that's kind of how they sometimes approach things. It's the same core group of people over and over again and—you know, so I don't really know what it means." Others viewed this teacher leadership team's previous history of leadership more positively, feeling that the development team's previous work with the literacy initiative aided in the successful dissemination of these practices to the staff. A teacher in a focus group at Desert Grove elaborated on how this team has been able to respond to local needs. She said, "And last year we started with the literacy program. And then it just grew, and then this year, it grew into the student accountability piece, because that's where trends say we've gotta move if we really want to change school culture." Because of the success of previous improvement efforts, teachers at Desert Grove and Forest Glen were more receptive to the innovation development process.

However, the Valley High School team did not have a recent history of successful teacher leadership. Instead, Valley had a history of overloading teachers with programs that quickly disappeared, leading the teachers to attempt to differentiate the current innovation from the other programs that the school was implementing. For instance, Tammy, a department chair and teacher leader, said, "They need to see that this is not another program because we've seen a whole bunch of programs and it was here for like three months and it's gone and then something else came in, you know?" By referencing the past, teacher leaders at each of the innovation schools were able to customize their message about SOAR in a way they thought would cause their colleagues to be most receptive to the innovation. Although teacher leaders tried to create a common message about the SOAR innovation, there was not the same uniformity in how teachers understood the innovation.

Status risk theory suggests that teachers draw on previous experience to determine the possible benefits of adopting new practices. Across all three schools, teachers' confidence in the anticipated benefits of the

innovation was described in terms of past reform efforts in the district. In other words, the riskiness of SOAR depended on teacher attitudes toward previous reforms. For some teachers, the innovation was perceived as something uniquely customized to their needs, preceded by external reforms impressed on them with insufficient flexibility. Compared with other initiatives with vaguely described goals and poor alignment with the mission of the school, the innovation offered a stronger means to have teachers implement practices schoolwide, specifically at Desert Grove and Forest Glen. Thomas, a department chair at Desert Grove, described, “This is a district that’s struggled for a while. . . . We had to find something. We had to do something. We had to continue to try and then someone hit on well, how about we focus on the kids and their effort in the classroom.” A teacher in a focus group at Forest Glen contrasted this innovation to a similar but externally developed district initiative: “It was almost like SOAR but it was something, it was outside . . . to do basically what you guys are doing, but it was from outside and the kids didn’t like it because it was something that was thrust upon them. This, since it’s in-house, makes sense cause you guys know what your kids need.” Because of the history of failed reform, other teachers were less optimistic, even if the practices themselves seemed promising. Sara, a novice English teacher, said, “I think that anything that we as a school can stick with and continue and—and do, and there’s a strong focus with it—I think it could work, you know? Unfortunately, historically, these things do tend to fall off the public school.”

For teachers faced with the choice of adopting the SOAR innovation, their colleagues having created the innovation components did not necessarily lead to higher receptivity. Teachers understood SOAR in relation to past experiences with school reform. Teacher leaders sought to create a common message of how the SOAR innovation should be viewed in light of previous reform efforts in their schools, but differences remained in how teachers interpreted this messaging based on their understanding of previous school reform. As we discuss in the next sections, teachers on the development teams adopted additional strategies to achieve commitment to and ownership of the innovation among their peers.

DIFFERENCE MINIMIZING

Difference minimizing is marked by the ways in which teachers leveraged their teacher leader status to ensure a lack of difference between the innovation and their current practice. The sensemaking process of difference minimizing occurred through teachers relating SOAR to preexisting

reforms or common teacher practices. Through communicating SOAR as either a small change or a different label on an already occurring process, teacher leaders used difference minimizing as a tool to build teacher buy-in. Teachers adopted this sensemaking process as a means to understand the practices that fell under the guise of SOAR.

During the final preparations for full implementation, teachers on the development teams at all three innovation schools made efforts to compare the SOAR innovation to other programs in the school as well as teachers' regular practice. In addition, they considered combining elements of the innovation with other programs in the school. This approach was most explicit at Desert Grove and Forest Glen, where teacher leaders emphasized the parts of the innovation that teachers would already identify as being part of their preexisting routines. Rachel, a member of the school development team at Forest Glen, noted, "We didn't want it to be one more thing on the teachers' plates that they were going, 'Oh God, one more thing I've got to do,' so we were trying to get them to see that you do this every day anyway, but we just want to put some more emphasis on it." Teachers on the development team at Desert Grove also used similar language about teacher workloads but added that the change they were asking teachers to make was to move to a common set of skills and language. Allison said, "That's kind of our main pitch to them is that this is something probably 95% of you are already doing, we're just going to ask that you change your language to get that common language and common aspect so all the kids realize what we're doing." To Allison and others at Desert Grove, once teachers moved to common language and practices, students would respond to their teachers' consistency with positive changes in behavior.

For teacher leaders, aligning the design to each school's local context had the effect of minimizing differences of the types of new practices and reducing the burden associated with adopting a new program. This difference minimizing began when they were introduced to the innovation design and frequently compared what they were being asked to develop to current practices. Often, this reframing of the innovation was done in a way that positioned the practices as aligned to what the teacher reported already doing in her classroom.

When other teachers learned about the innovation, they often described how it was "good teaching" and included practices that they were already using with their students. This sentiment led some teachers to dismiss the SOAR innovation because it did not introduce new teaching practices. Kate at Desert Grove remarked, "Well, I don't see this as an innovation. I see this as common sense. I don't—I don't see that it's changing my instruction or anything—you know, somebody's telling me, you've got to

change the way you're—you're teaching your class." A teacher in a focus group at Forest Glen added, "You know I mean I, even though most of it's stuff I've taught for years—goal setting and problem solving. . . . You know because so much of it is common sense. It's not really anything new; it's something we all know. I mean it's life."

A small segment of teachers across all schools recognized that although the innovation seemed like "common sense," it did not necessarily contain practices in which all teachers were engaged. The innovation was described as motivating teachers to engage in practices they felt they should already be doing. A focus group participant at Desert Grove noted, "I'll take just the grade recording as an example . . . we should probably be doing [it] anyway. And that I can easily find reasons why it didn't, doesn't happen, but when I know that everybody is doing, you know, it kinda forces me to make sure I'm doing it."

Teacher leaders and other teachers in each of the schools engaged in difference minimizing. The teacher leaders were likely to create an innovation design that aimed to improve student outcomes but did not overburden teachers. In terms of status risk theory, they wanted to reduce the risks for teachers, increasing the chances that their design would be adopted. Teachers were likely to see few differences between the innovation and what they felt "good teaching" looked like. In many instances, the only difference was the coherence with which school staff were expected to engage in the practices of the innovation. When teachers identified with the practices of the innovation, their sensemaking helped build buy-in because implementing meant maintaining or slightly modifying preexisting practices.

FACE VALIDITY

Status risk theory suggests that, when faced with deciding whether to adopt a new organizational innovation, teachers try to answer the question, Is it worth the effort to adopt this new practice given the possible benefits? In other words, they are constantly assessing if the components of SOAR will "work" for them and their students. Each aspect of the innovation is consistently being scrutinized as an innovation that will either help students learn and teachers teach, or an innovation that will fail to impact teachers and students. We term this process of determining effectiveness *face validity*, because teachers are not going through a rigorous process of determining whether the model is actually empirically effective, but are instead responding to SOAR based on their own knowledge of students, teaching, and school reform.

At all three schools, most teacher leaders overwhelmingly believed that the innovation had the potential to lead to long-term improvement in students' behavior, academics, and college attendance. This belief was held because of teachers' role in developing the innovation. Clara, an English language arts teacher and leader of the school development team at Forest Glen, said she could see the innovation solving all the basic problems her students have:

Everything, everything, everything boiled down to they don't know how to do whatever it was. They don't know how to study. They don't know how to take notes. They don't know where to look for information. They don't know this. They don't know that. And they don't even want to try to figure it out. They want somebody to hand them the solution. And so I was talking to one of the teachers. . . . She was like what is this gonna be about. And I was like, well, we're talking about student ownership and trying to figure out how we solve the problem of our kids not being able to solve their own problems, and she immediately, she was like, yes. Yes.

Teacher leaders at the other schools expressed the same sentiment. At Valley, Tammy said, "All teachers want students to be responsible for their work, so it could be easy to sell at least in general sense." Given that development team members had the most to gain in terms of organizational status, it is no surprise that they almost uniformly thought the SOAR innovation would have large improvements on student outcomes.

When the innovation design was shared with school staff, the broad focus on student ownership allowed ample opportunity for teachers to develop their beliefs in the efficacy of the innovation. Many teachers valued the focus on student effort, deeming it beneficial for students and teachers. Teachers thought the innovation was designed to put the onus on students, feeling that students would be more likely to be successful if they were given more accountability. Graham at Desert Grove welcomed the innovation because of the "focus on work ethic and student accountability, certain academic tenacity. You can do this. You just have to put the effort in. I think if we can stay focused on that, if we can get the kids to buy in, it could bring positive change." For these groups of teachers, the innovation was perceived to be beneficial because it would help students who wanted to better themselves. A teacher in a focus group at Desert Grove summarized this sentiment: "And so I think it has staying power because it really does I think help those kids that really take seriously and want to say, okay, I do need help. How do I figure out how to make an 87 in Algebra 1? Can you help me with that?"

Other teachers viewed the innovation as highlighting clear and actionable practices that they could employ to support students as they prepared to enter adult life. A teacher in a focus group at Forest Glen thought the innovation's benefits for students came from teaching a "hidden curriculum" aimed at teaching students what they needed to know to be successful. She perceived the innovation as teaching explicit strategies and skills that students were normally assumed to know but that teachers needed to scaffold for their students. An example of this type of practice is related to student monitoring of their progress in their classes. By teaching students how to chart their grades in class, teachers could enable the students to monitor if their grade went up or down over a three-week period.

To the teachers and teacher leaders at all three schools, SOAR had strong face validity. The teachers identified SOAR as exemplifying best practices of teaching and reinforcing their own ideas on how to be a "good" teacher. For some teachers, this meant providing additional supports for students so they could develop greater ownership. For others, the appeal of SOAR was that it shifted the onus of taking responsibility to students. Among development team members, some teacher leaders expressed concerns about the lack of evidence on the SOAR reform, but overall, teachers thought SOAR had high face validity.

OWNERSHIP

Status risk theory suggests that teacher leaders involved with the reform process have greater ownership over the development of the SOAR innovation because they have more to gain in terms of organizational status if it is successfully adopted and improves student learning. The ownership, or lack thereof, of teacher leaders versus other teachers informs the sense-making process in important ways. Teacher leaders at Desert Grove and Forest Glen spoke about how they had been part of the design process from the beginning, which made them feel that the innovation was going to be more successful because of their ownership. Rebecca, a teacher leader at Forest Glen, reflected, "I would say because of the amount of just training and studying and everything that we've been doing. I feel like every year we have is really beneficial. Definitely deepens my understanding of the design process as well as the design itself."

The same levels of ownership were not observed at Valley High School. Teacher leaders at Valley assumed inconsistent levels of ownership throughout the development and implementation process. During the winter visit in the 2013–2014 school year, the Valley team struggled to find ownership in the innovation. This lack of ownership had a clear source:

the way the development team members were selected. The principal had chosen department chairs to be the members of the development team; this group of teachers was already overloaded with other responsibilities and not as firmly committed to the innovation as the development team members at the other schools who self-selected onto the development team. The department chairs were already struggling to keep up with their administrative and teaching duties outside of the design process during the school year, and the team struggled to gain a sense of commitment and ownership over the innovation.

Compared with the teacher leaders, teachers uninvolved in the development process did not feel a strong sense of ownership over the innovation. Yet, this ownership was not a necessary condition for teacher receptivity to SOAR. Teacher leaders at Desert Grove and Valley did not attempt to involve teachers in their development work. For instance, at Desert Grove, the development team was committed to developing all materials for their staff as a means to ease the burden of implementation. The internal focus of the development team left some teachers feeling that the team was “clubby” and inaccessible. Although teachers were not given much ownership over the development process, teachers reported that the development team’s planning still enhanced the staff’s receptiveness to SOAR. Most teachers at Desert Grove recognized the work the development team put in to customize SOAR to their school context. A teacher in a focus group remarked, “I feel like if they didn’t put in as much work as they did, we, people wouldn’t be as receptive.” In this case, teacher self-determination aided in teacher receptivity, even when teachers were not given ownership over the development of the innovation.

In contrast, teacher leaders at Forest Glen sought to uphold greater professional equality among their staff, involving nearly half of the staff in the development of curricular materials related to the SOAR innovation. As a result, teachers felt much greater ownership over the innovation. A teacher in a focus group said,

And what, I think what makes SOAR a little different this time around is we had teachers to put those lessons together; it didn’t come from somewhere outside the school; it didn’t come from the district, it came from us. And that made the difference and we bought into it because we put it together and so since we’re all buddies we’re gonna help each other.

The teachers involved in this development process who took greater ownership of what the SOAR innovation would entail at their school were also more receptive to adopting the practices.

Regardless of their ownership over the innovation, at each of the schools, teachers described peers who refused to implement the innovation, a finding that is consistent with status risk theory. Even if teachers on the development team created a design that their teachers were less resistant to adopting, adopting any innovation carries risks to a teachers' organizational status. One consistent risk was the threat to teachers' professional norm of autonomy. A social studies teacher at Desert Grove, Andrea, said, "The current thing is like they feel they have to do it. They're not invested in it. It's the culture of the teachers. It's like any human being. If you make somebody do something, they're just going to retaliate and be like I don't want to do that because you're making me do that." Teachers' perceptions of autonomy within the innovation informed their understanding of expectations and their role in implementing the innovation. In this case, the members of the development team at two schools felt strong ownership over the innovation, which could arguably be attributed to their significant autonomy in creating the components of the innovation. Teachers understood the innovation through a lens informed by their autonomy and ownership over it.

DISCUSSION

This article describes a school improvement model involving local stakeholders in a collaborative and iterative developmental process that allowed local knowledge to inform the creation of a new innovation. There are reasons to believe that teacher co-creation would be positive for school improvement. By fostering locally developed reform, this approach may also be less threatening to teacher autonomy, as is often the case with externally developed programs (Peurach & Glazer, 2012). Allowing self-determination gives teachers the opportunity to customize an innovation to address the constraints and opportunities raised by their school's unique context. Further, as the most proximal stakeholder to students, teachers are likely to be most responsive to students' needs. With greater ownership over the development process, teachers may be more likely to buy in to the innovation and make meaningful changes to their practice. In the language of status risk theory, continuous improvement can increase teacher receptivity to the innovation by reducing the risks associated with adopting the innovation, by creating less uncertainty that the innovation will achieve its objectives, or by a combination of the two.

At the same time, teacher involvement risks undermining school improvement efforts. Teachers are situated in classrooms with students who have particular learning needs, schools with unique reform histories,

and districts with shifting priorities on how to improve teachers' instructional practice. Teachers' perspectives on how to improve their school are constrained by each of these factors, which all shape the types of organizational innovations teachers adopt. By focusing on the needs of their students or school, it is conceivable that teacher leaders fail to identify more systematic changes, preferring incremental change that will be better received by the administration and their colleagues. Difference minimizing may also lead teachers to discount more ambitious innovations in favor of ones that could be more easily implemented. In summary, self-determination in the innovation development process could contribute to greater receptivity, but at the cost of the innovation actually improving student outcomes.

Consistent with status risk theory, we find that participation in the co-creation process built commitment and ownership among teacher leaders on the school development teams. They were able to build buy-in from teachers in their school by customizing the design to fit the needs of their students and teachers. Yet, in the process, teacher leaders opted for pre-existing and easy-to-implement practices rather than high-leverage practices that would have required greater investment from teachers. In other words, the innovation consisted of practices viewed by teachers as having a high degree of face validity and involving few differences from the practices already in place in their classrooms.

These findings highlight the tradeoffs of using teacher self-determination within school improvement efforts. First, teachers valued the self-determination aspect of this organizational improvement model. Creating the innovation, as opposed to being given the reform by school or district leadership, built credibility. In contrast to externally developed reforms, teacher leaders were better positioned to develop an innovation that aligned with the school culture and met their teachers' needs. It is also noteworthy that while self-determination preserved a degree of autonomy over what would be implemented at each school, some teachers uninvolved in the design process still felt the design impeded their autonomy in the classroom.

Second, the teacher leaders involved in the co-creation of the reform had the highest levels of ownership. Except for the development team at Forest Glen that intentionally fostered greater participation from teachers in their school, teachers uninvolved in the reform development process did not necessarily have greater ownership, and many did not even know that the reform had originated among their peers. Yet, this ownership was not a necessary condition for teacher receptivity to SOAR, with teacher leaders at Desert Grove still eliciting a high degree of teacher receptiveness, even without a high level of ownership over the co-creation process.

Third, the iterative design and development process allowed teachers significant opportunities for difference minimizing. Compared with previous studies that highlighted teachers' difference-minimizing during implementation (Spillane et al., 2002), this process allowed for changes to be made not only during implementation, but during the innovation development process as well. The school development teams purposefully targeted practices that other teachers would view as less disruptive to their practice and have greater face validity. They focused on creating coherence around the common language of student ownership and responsibility and aligning preexisting practices to this new school vision. This involvement before implementation risked watering down high-leverage practices that required greater investment from teachers as the development team emphasized easier-to-implement practices or those already in place at their schools. By the time schoolwide implementation began, in some cases, greater alignment between existing practices and the SOAR innovation led to greater investment. Teacher leaders also recognized that the parts of the innovation that were too dissimilar to what they were already doing would be less likely to have teacher investment and become embedded in the school.

Finally, teachers' perceptions of this co-created innovation were shaped by their experiences in the district and their view of the utility of previous reform efforts. Teachers who viewed previous reform negatively were much less likely to identify with the goals of this innovation. As a result, achieving near-universal buy-in may be an unrealistic school improvement goal.

This article makes an important theoretical contribution by merging status risk theory with the sensemaking literature. As status risk theory tries to understand the beliefs and attitudes teachers draw on to decide whether to adopt organizational innovations, sensemaking adds to this theoretical orientation. Applying this theoretical framework to a continuous improvement reform model yields helpful insights to inform the ongoing delivery of this model. Because of the iterative and ongoing nature of this approach to school improvement, we attend not only to implementation—as has been the case in the broader sensemaking literature—but also to the development of an innovation design. This lens allowed us to comprehend the ways in which teachers' understanding of the reform process influenced the practices that were adopted in their schools, and teachers' receptivity to those practices. Given the iterative nature of ongoing design and implementation in continuous improvement reform (Bryk et al., 2015), we argue that researchers involved in this improvement work must be sensitive to stakeholders' ongoing sensemaking and how the design may not only meet their immediate needs but also inform systemwide improvements.

NOTES

1. We thank an anonymous reviewer for the suggestion to frame this study in terms of status risk theory.

2. Pseudonymous names are used for the three partner schools to uphold the confidentiality of the participants. Demographic characteristics are rounded to the nearest 20% to prevent the use of identifying school characteristics.

ACKNOWLEDGMENT

The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R305C100023. The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education.

REFERENCES

- Berends, M., Bodilly, S. J., & Kirby, S. N. (2002). *Facing the challenges of whole-school reform: New American Schools after a decade*. Santa Monica, CA: RAND. Retrieved from <http://www.rand.org>
- Berman, P., & McLaughlin, M. W. (1976). Implementation of educational innovation. *The Educational Forum*, 40(3), 345–370.
- Bifulco, R., Duncombe, W., & Yinger, J. (2005). Does whole-school reform boost student performance? The Case of New York City. *Journal of Policy Analysis and Management*, 24(1), 47–72.
- Bodilly, S. (2001). *New American Schools' concept of break the mold schools: How designs evolved and why*. Santa Monica, CA: RAND. Retrieved from <http://www.rand.org/>
- Borman, G. D., Hewes, G. M., Overman, L. T., & Brown, S. (2003). Comprehensive school reform and achievement: A meta-analysis. *Review of Educational Research*, 73(2), 125–230.
- Bryk, A. S., & Gomez, L. M. (2008). Reinventing a research and development capacity for educational improvement. In F. M. Hess (Ed.), *The future of educational entrepreneurship: Possibilities of school reform* (pp. 181–206). Cambridge, MA: Harvard Education Press.
- Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to improve: How America's schools can get better at getting better*. Cambridge, MA: Harvard Education Press.
- Cannata, M. A., Smith, T. M., & Haynes, K. T. (2017). Integrating academic press and support by increasing student ownership and responsibility. *AERA Open*, 3(3), 1–13.
- Cho, V., & Wayman, J. C. (2014). Districts' efforts for data use and computer data systems: The role of sensemaking in system use and implementation. *Teachers College Record*, 116(2), 1–45.
- Coburn, C. E. (2001). Collective sensemaking about reading: How teachers mediate reading policy in their professional communities. *Education Evaluation and Policy Analysis*, 23(2), 145–170.
- Coburn, C. E. (2005). Shaping teacher sensemaking: School leaders and the enactment of reading policy. *Educational Policy*, 19(3), 476–509.
- Cohen-Vogel, L., Tichnor-Wagner, A., Allen, D., Harrison, C., Kainz, K., Socol, A. R., & Wang, Q. (2015). Implementing educational innovations at scale: Transforming researchers into continuous improvement scientists. *Educational Policy*, 29(1), 257–277.
- Conley, S. (1991). Review of research on teacher participation in school decision-making. In *Review of research in teacher education* (pp. 225–265). Washington, DC: American Educational Research Association.
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Thousand Oaks, CA: SAGE.
- Datnow, A. (2005). The sustainability of comprehensive school reform models in changing district and state contexts. *Educational Administration Quarterly*, 41(1), 121–153.
- Datnow, A., Hubbard, L., & Mehan, H. (2002). *Extending educational reform: From one school to many*. New York, NY: Routledge.
- Desimone, L. (2002). How can comprehensive school reform models be successfully implemented? *Review of Educational Research*, 72(3), 433–479.
- Fullan, M. (2000). The return of large-scale reform. *Journal of Educational Change*, 1(1), 5–28.
- Giacquinta, J. B. (1973). The process of organizational change in schools. *Review of Research in Education*, 1, 178–208.
- Giacquinta, J. B. (1975). Status, risk, and receptivity to innovations in complex organizations: A study of the responses of four groups of educators to the proposed introduction of sex education in elementary school. *Sociology of Education*, 48(1), 39–58.

- Giacquinta, J. B. (2005). Seduced and abandoned: Some lasting conclusions about planned change from the Cambire school study. In A. Liberman (Ed.), *The roots of educational change: International encyclopedia of educational change* (pp. 151–168). Dordrecht, Netherlands: Springer.
- Gomez, K., Gomez, L. M., Rodela, K. C., Horton, E. S., Cunningham, J., & Ambrocio, R. (2015). Embedding language support in developmental mathematics lessons: Exploring the value of design as professional development for community college mathematics instructors. *Journal of Teacher Education*, 66(5), 450–465.
- Gross, B., Booker, T. K., & Goldhaber, D. (2009). Boosting student achievement: The effect of comprehensive school reform on student achievement. *Educational Evaluation and Policy Analysis*, 31(2), 111–126.
- Hannan, M., Russell, J. L., Takahashi, S., & Park, S. (2015). Using improvement science to better support beginning teachers: The case of the Building a Teaching Effectiveness Network. *Journal of Teacher Education*, 66(5), 494–508.
- Leithwood, K., & Menzies, T. (1998). Forms and effects of school-based management: A review. *Educational Policy*, 12(3), 325–346.
- Lewis, C. (2015). What is improvement science? Do we need it in education? *Educational Researcher*, 44(1), 54–61.
- März, V., & Kelchtermans, G. (2013). Sense-making and structure in teachers' reception of educational reform. A case study on statistics in the mathematics curriculum. *Teaching and Teacher Education*, 29, 13–24.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks, CA: SAGE.
- Park, S., Takahashi, S., & White, T. (2014). *Developing an effective teacher feedback system* (Report). Stanford, CA: Carnegie Foundation for the Advancement of Teaching.
- Peurach, D. J., & Glazer, J. L. (2012). Reconsidering replication: New perspectives on large-scale school improvement. *Journal of Educational Change*, 13(2), 155–190.
- Redding, C., Cannata, M., & Miller, J. M. (2018). System learning in an urban school district: A case study of intra-district learning. *Journal of Educational Change*, 19(1), 77–101.
- Schmidt, M., & Datnow, A. (2005). Teachers' sense-making about comprehensive school reform: The influence of emotions. *Teaching and Teacher Education*, 21(8), 949–965.
- Slegers, P., Wassink, H., van Veen, K., & Imants, J. (2009). School leaders' problem framing: A sense-making approach to problem-solving processes of beginning school leaders. *Leadership and Policy in Schools*, 8(2), 152–172.
- Smylie, M. A. (1992). Teachers' reports of their interactions with teacher leaders concerning classroom instruction. *Elementary School Journal*, 93, 85–98.
- Spillane, J. P., Reiser, B. J., & Reimer, T. (2002). Policy implementation and cognition: Reframing and refocusing implementation research. *Review of Educational Research*, 72(3), 387–431.
- Vernez, G., Karam, R., Mariano, L., & DeMartini, C. (2006) *Evaluating comprehensive school reform models at scale: A focus on implementation*. Santa Monica, CA: RAND.
- Weick, K. E. (1995). *Sensemaking in organizations*. Thousand Oaks, CA: SAGE.
- Weiss, C. H., Cambone, J., & Wyeth, A. (1992). Trouble in paradise: Teacher conflicts in shared decision making. *Educational Administration Quarterly*, 28, 350–367.
- York-Barr, J., & Duke, K. (2004). What do we know about teacher leadership? Findings from two decades of scholarship. *Review of Education Research*, 74(3), 255–316.

APPENDIX A

Demographic Profile of the District and Partner High Schools

	District high schools	Desert Grove High School	Forest Glen High School	Valley High School
Student enrollment	20,504	>1500	700–1,200	>1,500
Student race/ethnicity				
Percent Hispanic	59%	40%–60%	>80%	>80%
Percent African American	25%	20%–40%	<20%	<20%
Percent White	8%	20%–40%	<20%	<20%
Percent economically disadvantaged	70%	40%–60%	>80%	>80%
Percent LEP	6%	<5%	>5%	>5%
Teacher race/ethnicity				
Percent Hispanic	17%	<20%	20%–40%	20%–40%
Percent African American	29%	<20%	<20%	<20%
Yrs. teaching experience	10.9	10–12	10–12	8–10

Source. District administrative data, 2012–2013 school year.

APPENDIX B

Roles of Interviewees

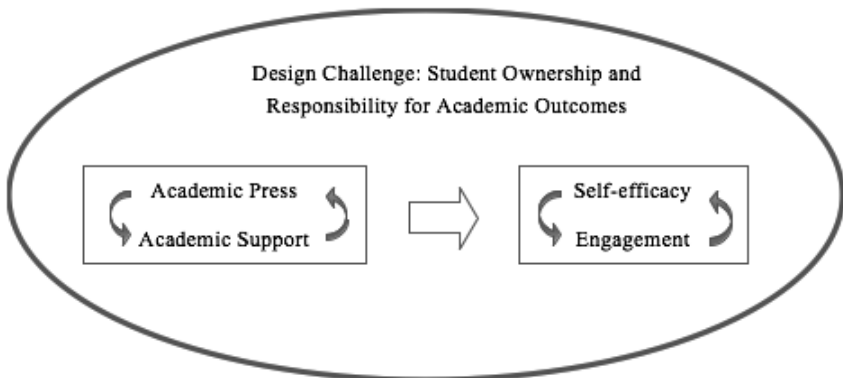
Name	Role
<i>Desert Grove High School</i>	
Allison	Development team member
Oscar	Development team member
Colin	Development team member
Chelsea	Teacher
Thomas	Teacher
Graham	Teacher
Andrea	Teacher
Kate	Teacher
<i>Forest Glen High School</i>	
Alexa	Development team member
Clara	Development team member
Rachel	Development team member
Rebecca	Development team member
Doug	Development team member
Sara	Teacher
<i>Valley High School</i>	
Tammy	Development team member
Matthew	Teacher

APPENDIX C

“The Design Challenge and School-wide Facilitating Conditions”
Handout

The Design Challenge and School-wide Facilitating Conditions

Figure 1 presents a diagram of the theory of action behind the design challenge. This figure is intended to illustrate how our findings suggest the elements of developing student ownership and responsibility fit together. While our data do not permit causal claims, it is consistent with findings from other research. As illustrated in this figure, concerted school efforts to develop an environment of both academic press and support work to increase outcomes such as self-efficacy and engagement. The intermediate outcomes of self-efficacy and engagement reinforce each other in a reciprocal relationship, and ultimately influence student achievement outcomes. These processes are supported by a set of school-wide facilitating conditions.



School-wide Facilitating Conditions

- Shared vision
- Aligned and coherent structures
- Trust
- Faculty and student stability
- Care and relationships between students and teachers
- Teacher accountability
- Individual and collective teacher efficacy
- Safe and orderly environment

APPENDIX D

“The Design Challenge: Increasing Student Ownership and Responsibility” Handout

The Design Challenge: Increasing Student Ownership and Responsibility

Design Challenge Core Elements: the essential components that any innovation *must* include to effectively address the design challenge.

Teachers and other school personnel have high academic expectations for students.

1. School personnel hold students accountable to high academic standards by communicating clear and consistent expectations for student performance and the gap between where the student is and the expectation.
2. Teachers use instructional strategies and learning goals that push students into higher level thinking.
3. Teachers create a sense of urgency among students to work productively during class time (i.e., minimizing transition time during activities, giving students time cues to complete tasks).
4. The school day is structured to maximize and protect academic learning time.
5. School personnel encourage all students to take challenging courses and actively identify students who could be successful in more challenging courses.

Teachers and other school personnel provide instructional supports to help students meet high expectations.

1. Teachers use instructional strategies that require students to explain, analyze, problem solve, and produce something rather than adding formulaic knowledge.
2. Teachers use authentic instructional strategies that emphasize the relevance to students’ current and future lives.

Teachers and other school personnel provide organizational supports to help students meet high expectations.

1. The school day is organized to provide opportunities for struggling students to get extra help.
2. Teachers and other school personnel identify students who are struggling and develop a plan to intervene and provide additional supports.

Teachers and other school personnel use techniques to deeply engage students in academic work.

1. Teachers and other school personnel model and explicitly teach students the behaviors that demonstrate investment and sense of responsibility.
2. Teachers use instructional strategies that empower students as leaders of classroom activity and discourse.
3. Teachers build on students' intrinsic motivation by allowing students to pursue their areas of interest when applying the skills being taught in class.
4. Teachers are equipping students with the skills and strategies to learn how to learn

CHRISTOPHER REDDING is an assistant professor in the Department of Human Development and Organizational Studies in Education at the University of Florida's College of Education. His research focuses on teacher labor markets, teacher education and development, and school improvement. His work has recently been published in the *American Educational Research Journal* and *AERA Open*.

SAMANTHA L. VIANO is an assistant professor of education in the Graduate School of Education at George Mason University. Her research focuses on evaluating policies and assessing school contexts that predominantly affect at-risk student populations and their teachers. Her work recently has been published in the *American Journal of Distance Education* and the *Journal of School Violence*.