



Using Implementation Science to Close the Policy to Practice Gap



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“Reading is a basic tool in the living of a good life.”

Joseph Addison

Introduction and Background

Current context/challenge

The importance of literacy and its long-term effects on individuals and society has been acknowledged for many decades. From as early as the 1950s, federal funding has been allocated to support specific educational priorities (www.ed.gov). Past presidents have led the adoption of national policies and mandates meant to support student academic success, such as the Elementary and Secondary Education Act (ESEA) of 1965 as part of the “War on Poverty” initiative, and the more recent No Child Left Behind Act of 2001 (NCLB). These and other policies and initiatives afforded educators and researchers many leverage points to drive change in districts, schools, and classrooms. They also created a cultural shift in the understanding of the power of a high-quality education for all students, drove the public’s expectations for the use of evidence-based practices in schools, and inspired future generations of technical assistance providers and program developers.

Despite the best intentions of policymakers and their extensive contributions to the improvement of education in America, the statistics on current literacy rates of students continue to be grim, and projections point to the possibility that 1 in 4 American children will grow up not being able to read. Furthermore, it is estimated that students who do not achieve proficiency in reading by third grade are four times likelier than their peers to drop out of school (www.dosomething.org). This “national crisis” of low literacy rates and its effect on high school graduation rates has the attention of students, families, educators, administrators, policymakers, and The White House.

Now over a decade since NCLB was authorized, many of the same struggles persist: how to improve reading outcomes for students, prevent school dropout, and build the 21st century skills needed for college or a career. Moving from policy to practice is hard work. Though policymakers and decision makers are well intentioned, creating new policies and initiatives is only one piece of the puzzle. Whether it be a state law to improve literacy outcomes for individuals with dyslexia or the formalization of an RTI (Response to Intervention) model, a policy or initiative does not cause change at the local level simply



by making it a mandate. Many decisions, actions, resources, and reorganizations need to happen in order to create the conditions that allow educators to apply new policies and initiatives as intended. While the continued policy-to-practice gap is due to the complexity and ambiguity of the education system along with the localized needs of communities, science can offer practical strategies to close that gap—this emerging discipline is known as Implementation Science.

Purpose

The purpose of this paper is to offer a high-level overview of Implementation Science frameworks, their application, and considerations that policymakers and other stakeholders can use to support educators striving to improve literacy outcomes for all students. To highlight key variables that lead to predictable academic outcomes for students, this paper will be organized around a Formula for Success. Each of the variables of the formula and the embedded Active Implementation Frameworks (AIFs) (Fixsen, Naoom, Blase, Friedman and Wallace, 2005; Fixsen, Blase, Duda, Naoom & Van Dyke, 2010) will be introduced.

Closing the Gap between Policy and Practice

The emerging field of Implementation Science provides insight into the elements of effective implementation processes that lead to the adoption of new policies, programs, or practices in a manner that results in the intended outcomes. This research indicates that if policymakers are to successfully affect student outcomes, they should attend to and build strategies that support the following Formula for Success:



While the specific application of this formula is unique at each level of the education system, the formula itself provides a framework for understanding how effective interventions alone will not solve the challenges that schools and districts face (Fixsen, Blase, Duda, Naoom, & Van Dyke, 2010). Instead, each of the three components is critical, and leaders at all levels of the education system should attend to the factors influencing the selection and adoption of effective interventions, the local use of effective implementation methods to appropriately install the interventions, and the contexts within which the interventions will be applied.



Overview of Active Implementation Frameworks

To better meet all students' needs, decision makers may establish new policies or mandates that influence the local adoption of evidence-based programs, practices, or system-wide initiatives (e.g., Multi-Tiered System of Supports). Some of these, such as the adoption of the Common Core State Standards, are extremely complex. No matter the size of an initiative, the adoption process will cause some shift in the culture of the school, district, or state, and it is important to recognize that the management of the shift affects the outcome. Thus, stakeholders need to understand the science of implementation and consider how to incorporate this science into the introduction and rollout of the initiative.

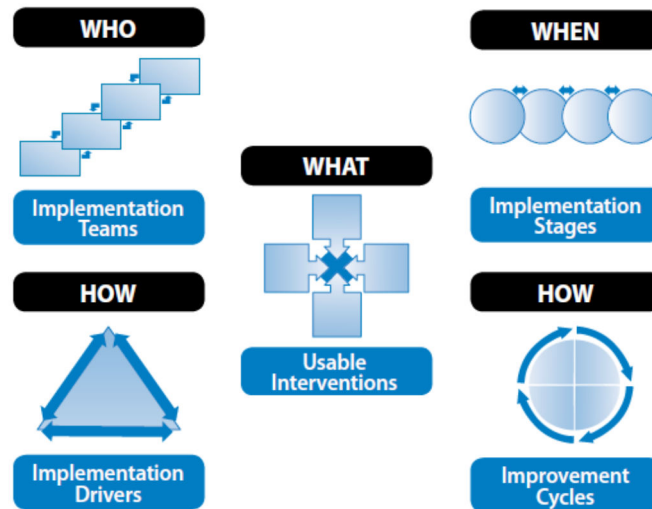
At the local level, implementation science provides a structure to successfully manage the use of new programs or practices. In general terms, it is a platform that can help schools and districts apply and sustain programs with fidelity (as intended) so that students can experience the expected benefits. Using this model, policymakers should keep in mind that those at the local level implementing new programs or initiatives to abide by a new policy will need to answer the following questions:

- **What** is the usable intervention (in this context, the system intervention/innovation) being implemented?
- **Who** is accountable for ensuring that it is being delivered as intended?
- **When** is the organization ready to make the needed shifts until it is fully embedded and has become “education as usual?”
- **How** do you create a system that will support and sustain these programs and practices?

These questions are integral to the Active Implementation Frameworks. In 2005, the National Implementation Research Network (NIRN) released a monograph synthesizing implementation research findings across a range of fields (Fixsen, et al., 2005). Based on these findings, the NIRN team developed and organized five overarching frameworks called the Active Implementation Frameworks. These are depicted in Figure 1. In order to achieve sustainable and scalable programs/practices to improve outcomes for all students, the frameworks need to be fully integrated and applied across all levels of the education system.



Figure 1: Active Implementation Frameworks



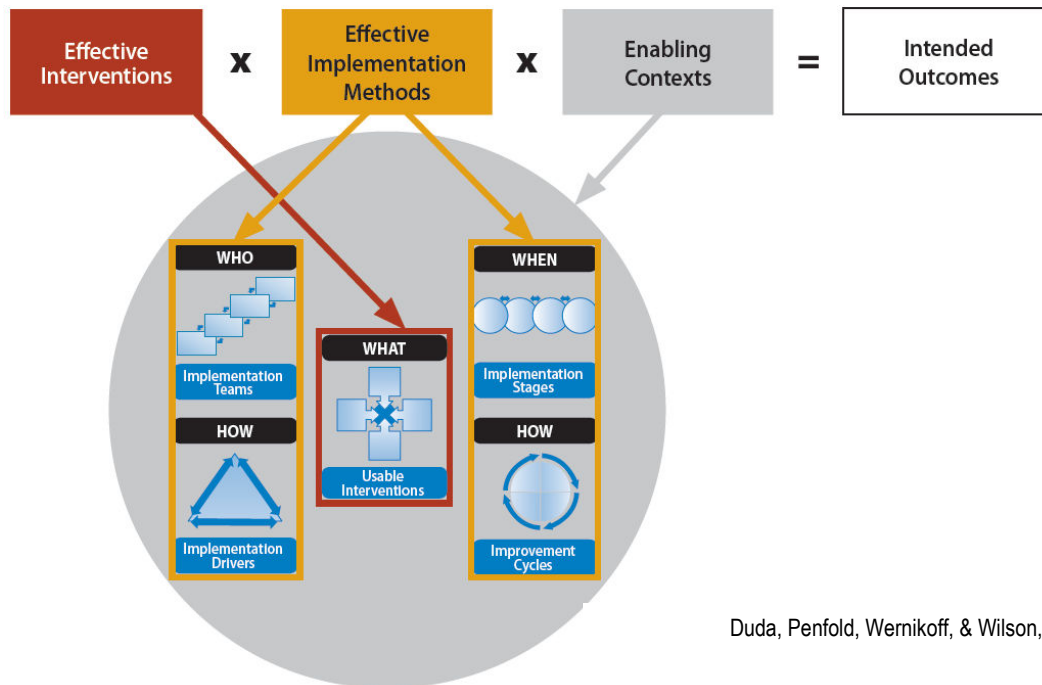
Fixsen et al. (2005); National Implementation Research Network (2013)

As the research and experience in Applied Implementation Science evolved, the AIFs also evolved (Fixsen, et al., 2010; Duda, et al., 2013; NIRN, 2013). Based on further study, NIRN linked the AIFs to an overarching Formula for Success. Figure 2 illustrates how these frameworks fit within the Formula for Success.

In the figure, the “What” or “Usable Interventions” framework corresponds to the Effective Interventions variable in the formula. The other four frameworks (Who/Intervention Teams, When/Implementation Cycles, How/Implementation Drivers, and How/Improvement Cycles) correspond to the Effective Implementation Methods variable in the formula. The final variable, Enabling Contexts, is represented by the grey circle encompassing all five frameworks.



Figure 2: Linking the Formula for Success with the Active Implementation Frameworks



Duda, Penfold, Wernikoff, & Wilson, 2014

To inform the introduction and rollout of policies and initiatives that are intended to improve student outcomes, the following sections explain the factors that a school or district must address to create an effective implementation process (system). It offers a brief description of the application of AIFs within the Formula for Success, starting with Effective Interventions, moving to the Effective Implementation Processes, and finally, addressing Enabling Contexts.

The What: Effective Interventions (Innovations)

The first variable in the formula to improve and sustain positive student outcomes is the “What.” In the context of the formula and this paper, the “What” relates to the system intervention that will impact literacy, is based on rigorous research, and has documented evidence of success in school settings. For policymakers, this could be a new policy, mandate, or system-change initiative. Collectively, these interventions can be called “innovations.” The innovation in turn may affect local decisions about programs, practices,



and other local initiatives. As of 2015, many promising practices and initiatives have been credited with improving student achievement. However, only some students are benefiting and positive results are not always sustained. To improve the successful adoption of an innovation, policymakers and stakeholders need to carefully consider and articulate the “What” that they are asking educators to implement. Some key questions to ask include:

- ☑ *What are the core components of the innovation (reading intervention, RTI model, etc.) that make it successful?*
- ☑ *What is the evidence that it will improve student outcomes?*
- ☑ *How do we assure that the selected or mandated innovation will meet the needs of local students?*
- ☑ *How do we assure the capacity to implement as intended?*

To answer these questions systematically, one may apply the Usable Interventions Framework, the first of five frameworks articulated by Fixsen et al. (2005; 2010) and the NIRN (2013). In order for the intervention, or innovation, to be considered usable (i.e., translatable from the highly controlled conditions in practice, to highly complex and frequently changing environments in schools), four features must be assessed (Blase & Fixsen, 2013). Blase and Fixsen (2013) identified these as: 1) a clear description of the “What”; 2) information about essential functions; 3) operational definitions; and 4) performance assessments or fidelity measures.

This rigorous and often time-consuming process is imperative if the state, district, or school is to meet and sustain the intended outcomes. Without it, those implementing the innovation are left to independently identify core components and make decisions on ways to integrate the new innovation into the current system.

Policy and decision-makers can support leaders and district/school implementation teams by including or making recommendations for protocols that can be used to guide processes and decisions. They can also set expectations for reporting student outcome data and

Why clarifying the “What” is important:

- Without it, multi-component innovations may be adapted or “watered-down” to fit the current system/existing capacity thus not achieving the intended results.
- Without fidelity measures, we cannot be confident that the innovation is making a difference.



implementation fidelity data. These strategies apply to any initiative and will help to create an enabling context for more purposeful, functional, and sustained use of the innovation.

Effective Implementation Methods (The WHO, WHEN and HOW)

Once the interventions (programs or practices) are selected or adopted, the next critical step is to build local implementation capacity to engage in and sustain the work. The following section will define the AIFs that can be used at any level of the system to support the people engaging in this important work and create an aligned system to help achieve results.

The Who: Invest in People

In order to create an effective implementation system, it is essential to identify “Who” will have the time and talent to engage in system transformation. This leads to the second AIF: Implementation Teams. Implementation Teams are action-oriented groups that come together around a common goal and purpose: to create a transparent, efficient, and aligned system that supports the use of important and effective programs or practices. Having the right people on the Implementation Team is critical. These individuals should have the skills, knowledge, commitment, and authority to make and enforce decisions.

The main role of the Implementation Team is to ensure that all of the components of the innovation can be used as intended and yield the intended student outcomes. They may need to consider ways to adjust the system in a manner that will improve the adoption of the innovation. For example, they may focus on current strengths and build implementation capacity in the areas that are weaker or need additional support. If the implementation of a new program is person-dependent, meaning that work is tied to an individual currently in the system, the Implementation Team may seek ways to develop or identify others who can support this work in the future.

An Implementation Team consists of a core group of at least three to five members who have dedicated time (e.g., part of their job description) to address the system changes needed to support the new program or practice and have the knowledge and skills to implement it. Implementation Teams build on current strengths within the system (e.g.,



effective coaches and coaching supports in place, accessible data collection system). They are critical at the start of a new initiative, applying a new policy or mandate, and throughout the process to continuously improve the system in a manner that will support and sustain the use of the selected programs and practices over time. As a result, Implementation Teams at the local level typically include members of the school and district Leadership Team or other staff who have the ability to make key decisions. The team will need to attend to the alignment of all components of the system so that the programs and practices are implemented with fidelity, which will allow all students involved to experience the full benefits.

This may mean aligning professional development activities and supporting organizational shifts (such as scheduling). Implementation Teams are also responsible for creating pathways of communication with stakeholders, such as families, community members, policymakers, and other Implementation Teams that may reside in the school or district. Implementation Team functions should align with leadership activities and other strategic or improvement plans at the school and district level (Duda, Penfold, Wernikoff & Wilson, 2014).

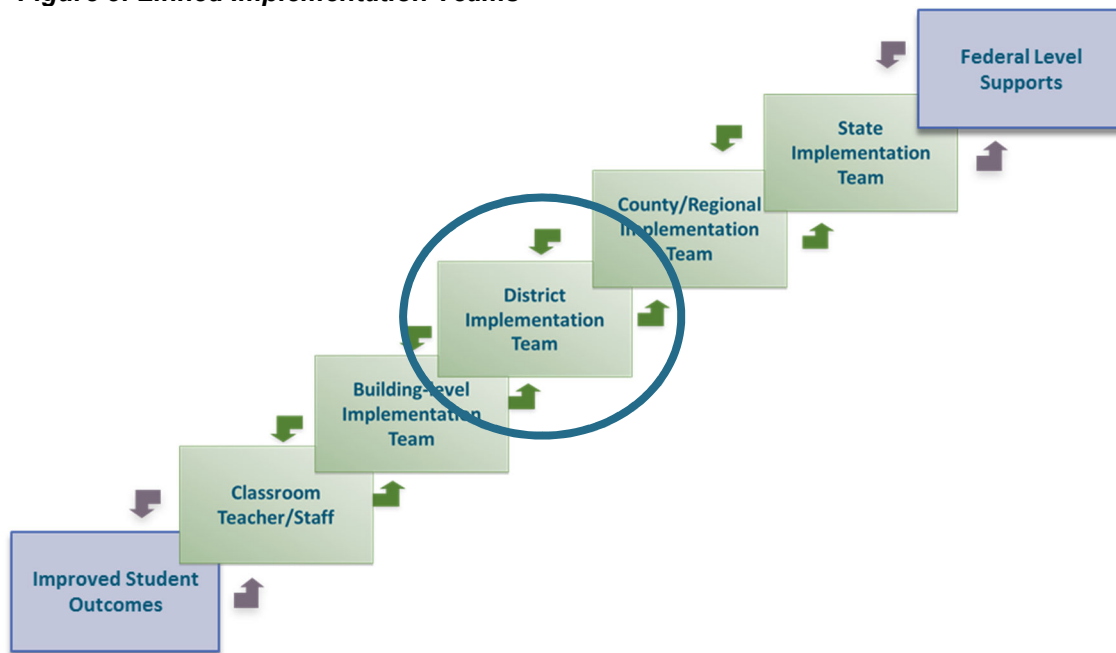
Government and private funders can contribute to the successful adoption and use of evidence-based or evidence-informed literacy innovations by expecting their applicants to include a plan for formulating and operating an Implementation Team. Team members should have the authority to make system-change decisions and have allocated time (FTE) to do the work. Based on recent findings by Fixsen, Duda, Blase & Horner (2009), state-level Implementation Teams are most effective and sustainable when they are led by at least two individuals who are dedicated to this work on a full-time basis.

Linking Implementation Teams across the education system (school with district, district with regional, regional with state) can serve to close the policy to practice gap. Implementation Teams should be expected to function and share information in a linked manner following a cascading logic model shown in Figure 3. One way to successfully scale up an initiative is to use linked teams that begin as a vertical slice of the education system and eventually spread to support all students. For example, a district-level Implementation Team would be accountable for supporting (or creating in some cases) an Implementation Team (that includes leadership) at the school level. These school-based Implementation Teams would have clear communication pathways to their District Leadership and Implementation Team (DLIT), to report successes and barriers related to policies and mandates in their respective classrooms. When challenges are identified, the



DLIT would be responsible for resolving any district-level barriers if possible. If not, they would be responsible for using clear communication pathways to Regional Implementation Teams, or to State level Teams. Regional/State teams would then work towards resolving the challenges that originated at the classroom level. The “successful” functioning and impact of the DLIT can be evaluated by the effect on the work of the other Implementation Teams one level “below” at the school or building level and one level “above” at the Regional or State level.

Figure 3: Linked Implementation Teams



The When: Implementation Takes Time

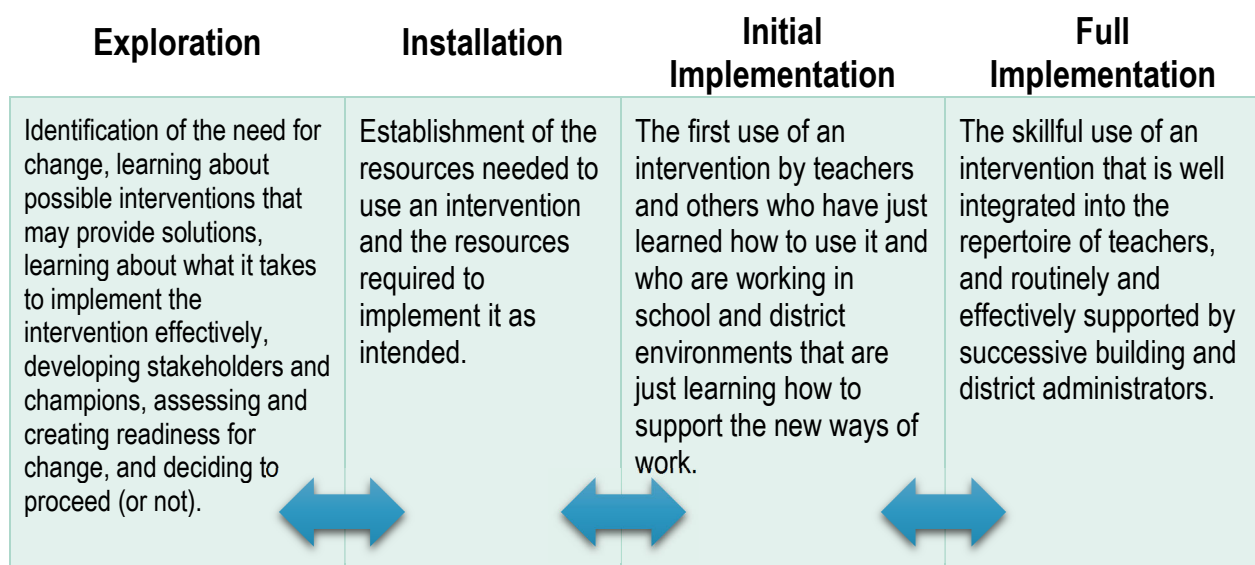
To sustain an innovation in a manner that aligns to current policies and mandates, it is essential to understand its stage of implementation in the classroom, school, district, or region. Typically, there are many initiatives going on simultaneously. Furthermore, each initiative is usually at a different stage of adoption, use, accuracy or fidelity, and ability to sustain. If leaders and policymakers understand the current stage of implementation of the targeted initiative, they can better manage the pace of the rollout, and identify and use formative data for decision-making purposes.



To facilitate change at the classroom, school, district, or state level, a plan that helps staff negotiate the journey through the stages of implementation must be established. This plan should engage and support teachers and administrators so that they are able to make full, effective use of the new interventions in their educational settings. Understanding the stages of implementation facilitates intentional planning for change, which results in:

- ☑ *Alignment of activities to the applicable stage, increasing the likelihood of moving successfully through the stage and on to the next one.*
- ☑ *Preparation for activities and challenges that will be encountered in the next stage.*
- ☑ *Reduction in wasted time and resources.*
- ☑ *Increased likelihood of sustained and improved use of educational practices.*

Research suggests it can take from two to four years to fully and successfully make an evidence-based program, practice, or effective educational innovation operational (Fixsen, Blase, Timbers, & Wolf, 2001; Panzano & Roth, 2006; Prochaska & DiClemente, 1982). The implementation process begins when a gap to improving outcomes for students is identified, and a process for selecting possible interventions to address that need is determined. Decisions are made at that point for what to adopt, how to support the new intervention, and how to sustain high-fidelity use of the practices so that all students can benefit. The process includes four stages comprising key components and processes that can lead to the long-term survival (sustainability) and continued effectiveness of any intervention in the context of a changing world. The four stages are named: Exploration, Installation, Initial Implementation, and Full Implementation.





The stages are not linear and each one does not have a crisp beginning or end. For example, there are times when an organization will move among stages due to changes in staff, funding, leadership, or unsuccessful attempts at employing the intervention with high fidelity.

Identifying the stage of implementation where the intervention is at that particular point in time allows for opportunities to provide targeted and developmentally appropriate support for staff, helps to manage expectations, and allows for more efficient use of resources. This is particularly true for districts, who must support schools and adjust support, helping to fill in gaps when changes in funding and staff turnover occur.

Policymakers and leaders can maximize supports and align expectations of project or program deliverables by understanding the current stage of implementation in which the targeted interventions are mostly residing. The understanding creates an opportunity to

Food for Thought: Giving Interventions Time to “Stick”

A challenge that educators sometimes face is allowing an intervention enough time to take hold and become part of “education as usual.” An understanding of Implementation Stages can help the Implementation Team gauge whether sufficient efforts have been made that will allow data-based decisions to inform whether to continue with the intervention.

“We don’t buy a new car every time we need an oil change, but in education, instead of making adjustments, we start something new” -Eric Kloos

provide more streamlined supports and resources and to encourage educators to stay the course in order to benefit from the investment to date. Research has demonstrated that the adoption of new interventions will go through an “implementation trajectory” that oftentimes results in organizations falling back to earlier stages of implementation. Moving to earlier stages of implementation allows teams to further solidify the elements that work and make adjustments to plans that are not leading to the intended outcomes.

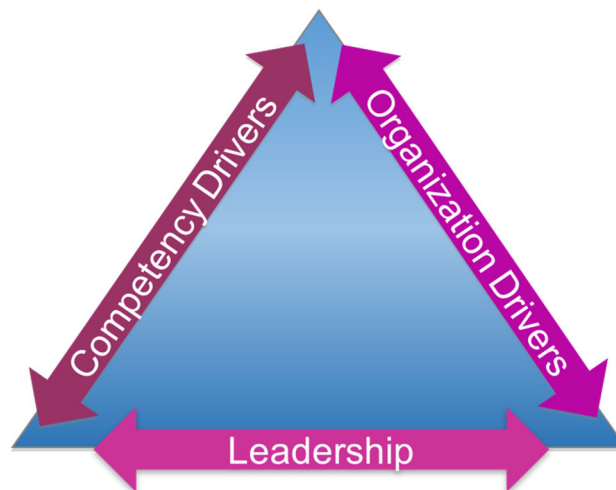


The How: Implementation Drivers

The “How” is defined by the Implementation Drivers Framework, which defines a set of three factors necessary for successful implementation. This set of best practices improves the likelihood of creating an efficient and aligned system so that the intended outcome of a policy can be achieved. Implementation Drivers can be organized into three categories:

- 1) *Staff Competency Drivers*: Support personnel in their use of the new program.
- 2) *Organization Drivers*: Help align programs, policies, procedures, and opportunities to ensure that new interventions have the supports and buy-in to be used as intended.
- 3) *Leadership Drivers*: Acknowledge the importance of leaders and leadership styles, and support current and future leaders in an organization.

Due to the integrated and compensatory nature of these drivers (meaning that they work together), they are depicted as three sides of a triangle as illustrated below.



2008, Fixsen, Blase, Duda, Naoom & Van Dyke (adapted)

1. Staff Competency Drivers

Staff Competency Drivers (pictured on the left side of the triangle) are designed to build staff confidence and competence in the use of the new intervention (e.g., new literacy program or new set of instructional practices). Legislation must take into account the importance of identifying what teachers and other staff should be doing in order to attain fidelity of implementation. Schools or districts may need to hire or recruit existing personnel who have the skills needed to implement the initiative with fidelity, and then provide targeted and efficient training to develop and encourage the use of those skills. Finally, as documented by the meta-analysis by Joyce and Showers (2002), training



should be accompanied by coaching in order to lead to behavior change or use of the new skills in the classroom. Dyslexia laws (or other legislation intended to improve literacy outcomes) must take into account the essential factor of highly trained staff. Workshops alone will not provide staff with the necessary skills. Ongoing professional learning, coaching, and the demonstration of teacher proficiency are critical to achieve intended results.

2. Organization Drivers

Organization-support Drivers, pictured on the right side of the triangle, provide the structure for ensuring that the selected intervention (e.g., evidence-based programs) are used as intended, sustained over time, and positioned to better “weather” external factors such as changes in funding, mandates, and staff. In a school or district setting, these include policies, resources and materials, procedures, and other structures that play a role in supporting the success of implementation. When challenges to supporting the implementation of the new innovation and the resulting shifts arise, additional financial, organizational, or other types of support might be needed from external sources outside the immediate school or district. In the case of a school or group of schools, this may mean assistance from the district. In the case of a district or group of districts, this may mean assistance from the state. Also part of the organization drivers, a robust data system should be used to advise the Implementation Team on how well the implementation processes are functioning. Fidelity matters. There must be built-in measures to assess the effectiveness of the innovation and implementation process during each stage of implementation. Without sufficient data, beneficial educational practices that are not adequately adopted and supported may risk being perceived as not being effective and ultimately discontinued.

3. Leadership Drivers

Leadership Drivers are at the base of the triangle since they are the foundation of selecting, supporting, sustaining, and scaling up any new evidence-based program or practice. The purpose of these drivers is to support existing leaders at all levels of the system as well as future leaders in a school or district. Building a system to implement a new program is difficult work. The two biggest challenges are that current systems are being disturbed and new, more transparent systems are being created. Heifetz and Laurie (1997) recognized that two levels of leadership styles are required to address these challenges: technical and adaptive. Technical leadership is required when there is a straightforward problem that has a straightforward solution (e.g., a need to change the school schedule to incorporate an intervention period, or buying more materials for classrooms). Adaptive leadership is required when the problem or the solution is not



entirely clear, or the solution requires a nuanced response (e.g., too many students are not reading on grade level despite a school-wide effort to improve performance, or staff are reluctant to use a new intervention). Both types of leadership are necessary to move a new program forward in the implementation process.

The How: Improvement Cycles

Leadership and Implementation Teams must make many decisions when adopting new evidence-based practices. There is much learning, and often un-learning, that takes place. This cannot occur in one short cycle of change. The educational system, at all levels, must create a process that allows for continuous improvement (Senge, 2006; Aarons, 2005). This process assists with the scaling up of a new policy with success.

Deming (1982) taught the field of manufacturing that engaging in intentional cycles that focus on improvement can help teams adopt innovations and create efficiencies. A key process articulated by Deming, and earlier by Shewhart (1931), is the Plan-Do-Study-Act (PDSA) Cycle. From an Implementation Science lens, Implementation Teams rely on PDSA processes to help them document decisions that evolve out of rapid problem-solving protocols. When changing systems and disturbing the status quo, many unanticipated barriers or challenges emerge. For schools, districts, or states, the use of improvement cycles provides a helpful process for making decisions systematically while engaging in continuous improvement. Repeating the cycle continues the process of usability testing. With each cycle, implementation should be refined and communicated. Documenting these cycles creates an institutional memory of decisions made and lessons learned that can be passed on to future stakeholders. It also informs stakeholders of the activities occurring and provides opportunities to solicit and incorporate their feedback. As a result, this process creates a supportive environment in which evidence-based programs and practices can thrive, builds a culture of trial and learning, and ensures that the supports in place are designed to improve student outcomes.

The Need for Enabling Contexts

The final variable in the Formula for Success is the importance of an enabling context. Attending to the What, Who, When, and How's of the Active Implementation Frameworks affects the predictability and achievability of the intended outcomes. This means having the right members on the Implementation Team; knowing where the school or district is in the cycle of implementing the intervention program and acting accordingly; understanding



what the implementation drivers are and supporting them in a manner that promotes the outcome; and, finally, understanding and engaging in improvement cycles. Together, these comprise effective implementation methods that will help a school or district achieve its intended outcomes. However, as the formula depicts, attending to all of the above can only yield positive change when it occurs within an enabling context. That is, the school, district or state must leverage or create a supportive context in order to achieve the intended outcome.

Prior to implementing a new policy within a school district, it is important to learn more about the context within which it will be implemented. This requires attention to the culture of the school and district; support for all staff involved in the implementation; and policies, procedures, and practices that can facilitate the implementation of the intervention as intended. A new policy must fit into an existing myriad of competing priorities. School leaders must navigate a multitude of initiatives, limited budgets and time, and other new (sometimes competing) policies and mandates. An enabling context is critical so that the new policy or change is supported and results in the intended outcomes that are sustained over time.

Learning how to foster an enabling context in school, district, and state settings is critical in order to achieve the intended outcomes. Because of the unique combination of variables, operationalizing these principles will look different in each educational setting. Therefore, the conditions for successful implementation of the selected intervention should be articulated at the school, district, and state levels so that they can be clearly shared. These conditions can then guide the development of a plan that results in a more enabling context in each setting.

An enabling context does the following:

- Fosters a culture of learning
- Fosters a culture of transparency
- Builds and supports leaders at all levels
- Develops and maintains policies and procedures that help create the “space” needed to focus on implementation
- Develops and maintains policies and practices that help remove barriers and practices that do not lead to student benefits
- Helps align functions



Summary

All educators ultimately share a common goal: to improve outcomes for today's students and prepare them with the skills to succeed in careers that may not yet have been imagined. A core skill needed to succeed in the 21st century is the ability to read. In order to improve literacy rates and, ultimately, academic outcomes for students, careful consideration needs to be paid to the science of implementation.

As laws and policies are constructed and passed, it is essential to know that “good” policy is not enough. At the policy or decision-making level, it is critical to allocate time, flexibility, and resources for the application of implementation science principles. Implementation Teams may need to be developed and teams will need both time and flexibility to carefully plan how to integrate and sustain best practices in their unique setting. Leaders at all levels need to have enough information to select innovations that align with policies and to ensure that the core intervention components are clearly defined so that they can be translated into specific actions and outcomes. Education agencies at all levels will need to build supports and set expectations for gathering student outcome data as well as fidelity data. Together, these can better inform whether the selected interventions are in fact making a difference.

Legislators as well as all educators play a key role in helping well-meaning goals, at the heart of laws and policies, translate to expected outcomes. By bringing all the pieces of the Formula for Success together—choosing and using effective innovations, building and sustaining effective implementation processes, and leveraging an enabling context that includes practice informed policies and aligned functions—it is possible to achieve tangible results and improve the literacy rates of today's students and tomorrow's innovators.



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Related Resources

The following resources have been selected to offer examples of how Active Implementation Frameworks have been applied in local settings and links to resources to learn more about Applied Implementation Science.

All levels of the Education System

Make “It” Happen: Using Implementation Science with Wilson® Programs.

Duda, M.A., Penfold, A., Wernikoff, L., & Wilson, B. (2014). *Wilson Language Training*, Oxford, MA.

<http://www.wilsonlanguage.com/PDF/Make%20it%20Happen%20Using%20Implementation%20Science%20with%20Wilson%20Programs.pdf>

Active Implementation Hub.

National Implementation Research Network (2013), Frank Porter Graham Child Development Institute, University of North Carolina, Chapel Hill.

<http://implementation.fpg.unc.edu/>

Making It Happen vs. Hoping It Happens: Do It with the Science of Implementation.

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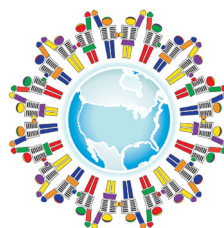
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