Applying Lessons from the Teaching-Family Model: Positive Behavioral Interventions and Supports (PBIS)

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A long-touted aspiration in the field of applied behavior analysis (ABA) is the creation of a society free of coercive control that supports prosocial behavior and in turn improves the quality of life of its members (Biglan, 2015; Skinner, 1948). Fixsen and Blase (this issue) build on this vision with a concrete example of how the principles of behavior can be married with implementation science to benefit the lives of children, families, and society. The Teaching-Family Model is an elegant example of how effective practices can be implemented at a scale of significant social impact. In recounting their journey through the development, replication, and diffusion of the Teaching-Family Model, Fixsen and Blase describe how effective and sustained change was achieved at scale. Their story affirms that the design of effective and supportive environments is possible and replicable, and we gain lessons on how to establish systems to improve quality of life in community, home, employment, and educational environments. The story they tell is encouraging yet formidable. Clarity of purpose must be matched with an understanding of human behavior, objective measurement of performance and outcomes, and the tenacity to repeatedly apply this expertise within a scientific framework to improve and scale intervention efforts.

Positive Behavioral Interventions and Supports (PBIS) is one example of an approach that has benefitted directly from the Teaching-Family Model story. PBIS is a framework for establishing both school-wide behavior support and the individualized supports needed to make schools more effective, efficient, and equitable learning environments for all students (Horner, Sugai, & Anderson, 2010). Through the iterative process of implementation, evaluation, adaptation, and replication, PBIS has expanded to over 25,000 schools across the United States (Sugai, 2017). In this commentary, we describe how the vision provided by the founders of the Teaching-Family Model has benefitted those of us trying to improve the social culture of schools. Our thesis echoes those in the past who argue that the principles of behavior are fundamental to the improvement of social systems.

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Features of PBIS

PBIS is a framework for evidence-based practice (EBP) that aims to improve the social culture in schools and provide effective learning environments for all students, with intensified support provided to students as needed (Horner, Sugai, & Fixsen, 2017; Sugai & Horner, 2009). PBIS is multitiered in that different levels of intervention intensity (i.e., Tiers 1, 2, and 3) are matched to student need. Figure 1 presents the frequently referenced continuum of support in PBIS. Tier 1 follows a recommendation from the Teaching-Family Model to invest first in prevention. The goal of Tier 1 is to create a school environment that is aligned with best practice in instruction and classroom management. Common Tier 1 practices include (a) working with stakeholders to establish school-wide expectations for student behavior, (b) explicitly teaching these expectations using effective instructional methods (i.e., direct instruction), (c) reinforcing appropriate behavior, (d) providing error correction contingent on problem behavior, (e) collecting data on treatment integrity and student behavior, and (f) reviewing data regularly for decision making and problem solving. For students whose behavior does not respond favorably to Tier 1, Tier 2 support is initiated. The goal of Tier 2 is to provide students with the additional social and academic instruction they need to be successful in typical school contexts. This includes targeted or small group interventions to remediate skill deficits in social skills and academics. Tier 3 is reserved for students whose behavior requires more intensive and individualized intervention. Tier 3 includes conducting functional behavior assessment, incorporating academic and mental health assessments, and developing a comprehensive plan for function-based support. It is important to note that Tier 3 is not synonymous with special education, nor does it mean that students will receive services outside the general education classroom. The purpose of Tiers 1, 2, and 3 is to provide students with the support necessary for them to be successful in the least-restrictive educational environment.

Fig. 1 The multi-tiered continuum of support in PBIS. The large triangle represents all students in the school and the segmented sections of the triangle represent the target impact of each tier on the student population

This multitiered logic originated in the area of community health and disease prevention (Walker et al., 1996) as a way to prevent the number of individuals who got ill and required more intensive medical care. Applied to schools, Tier 1 is in place for all students, with the aim of providing effective education to all, which will then reduce the number of students who will require more resource-intensive intervention at tiers 2 and 3. In alignment with this multitiered logic of prevention, Tier 1 should be effective for approximately 80% of the student population, Tier 2 for approximately 15% of the student population, and Tier 3 for 5% (Horner & Sugai, 2015). The specific interventions applied at Tiers 1, 2, and 3 are dependent on the needs, context, and culture of the school. For example, if data at a particular school indicate that less than 80% of the student population is benefiting from Tier 1, then the supports must be modified until approximately 80% of students are benefiting from this core instruction. It is important to remember that PBIS is not defined by the interventions used; it is not a curriculum (Horner et al., 2014). Rather, PBIS is a *framework* for implementation that provides schools with the structure for selecting and implementing practices, collecting data, and making data-based decisions.

PBIS seeks to improve EBP in schools and produce outcomes that are valued by society. Slocum et al. (2014) define EBP as a process that integrates the best available evidence with clinical expertise, values, and context. PBIS directly addresses each of these components of EBP. Supports and interventions that are implemented across all three tiers are guided by the best available evidence for what works. A PBIS leadership team is established and trained at both the school and district levels to provide the clinical expertise needed for successful selection and implementation of practices. Values and context are explicitly emphasized when designing and selecting interventions during initial PBIS implementation in year one all the way through sustained implementation (i.e., approximately 4 years or more). PBIS places an overt focus on assessing contextual fit (Albin, Lucyshyn, Horner, & Flannery, 1996), or the extent to which interventions align with the values, needs, skills, and resources of those who will implement the intervention (i.e., staff) and those who will experience the intervention (i.e., students).

Research examining the effects of PBIS indicates that successful implementation of Tier 1 is associated with sustainable changes in disciplinary practices and improved systems to promote positive student behavior (Barrett, Bradshaw, & Lewis-Palmer, 2008; Bradshaw, Reinke et al., 2008; Horner et al., 2009). School-wide PBIS has been associated with significant reductions in disruptive behavior and improved social-skill knowledge (Barrett et al., 2008; Horner et al., 2009; Metzler, Biglan, & Rusby, 2001; Sprague et al., 2001). Several studies, including two randomized controlled studies in elementary schools, have shown that high quality implementation of PBIS is associated with significant reductions in office discipline referrals and suspensions (Bradshaw, Mitchell, & Leaf, 2010; Horner et al., 2009), problem behavior (McIntosh, Bennett, & Price, 2011), teacher ratings of classroom behavior problems, and bullying (Bradshaw, Waasdorp, & Leaf, 2015; Waasdorp, Bradshaw, & Leaf, 2012).

The effectiveness of PBIS can in part be attributed to incorporating lessons learned by other pioneers in the field, including those involved in the development and scaling of the Teaching-Family Model. Early PBIS practices and procedures were based on empirical demonstrations of the successful use of behavior analytic procedures and comprehensive efforts at person-centered support (Carr et al., 2002). The organization and scaling of PBIS, however, were more influenced by encouragement from Biglan (1995) and Mayer (1995) to

implement behavior support with larger units of analysis (e.g., whole schools and communities rather than individuals), the guidance of Walker et al. (1996) to build multitiered frameworks of support practices that emphasized prevention and adaptation to all people in an organizational system, and to the ground-breaking messages from Dean Fixsen and Karen Blase (Fixsen & Blase, this issue; Fixsen et al., 2005) about the iterative process of implementation, evaluation, and adaptation that is needed for large-scale use of effective practices. Below we discuss some of the primary lessons learned from the Teaching-Family Model and how those lessons have been put to use in the initial development, improvement, and scaling of PBIS.

Lessons Learned from the Teaching-Family Model

Start with Values

The importance of stakeholder values in scientific endeavors is nothing new, and this emphasis is at the forefront of PBIS. Stakeholder values, or their reinforcers (Wolf, 1978) are a key ingredient to socially significant behavior change. In PBIS, students, teachers, staff, administrators, and families provide input to assess the social significance of (a) the problem and the goals for solving the problem, (b) the procedures used to solve the problem, and (c) the results, or the extent to which the problem was solved (Wolf, 1978). Without this essential information, it is unlikely that the PBIS framework would have experienced such success across a variety of educational contexts including public K–12 schools in urban, suburban, and rural settings (Horner et al., 2014), alternative schools (Jolivet, McDaniel, Sprague, Swain-Bradway, & Ennis, 2012), and early childhood programs (the pyramid model; Hemmeter, Snyder, Fox, & Algina, 2016). Identifying, defining, and measuring values provides the rich information needed to adapt PBIS to a variety of school contexts and populations.

Use the Science

Like the Teaching-Family Model, PBIS uses science to develop, evaluate, and improve the effectiveness and efficiency of practices and operations. PBIS is grounded in applied behavior analysis (ABA), and it has been enriched by contributions from other fields such as education, health care, and implementation and prevention science. Because “confusion in theory means confusion in practice” (Skinner, 1953, p. 9), it has been and will remain essential that leaders in PBIS be conceptually grounded in ABA while also being informed consumers of the literature in other fields that tackle similar problems and ask similar questions. ABA provides the theoretical foundation for conceptualizing and approaching problems, the technology of effective procedures, and the measurement of variables of interest. Simply put, PBIS is an example of the application of ABA to a scale of social importance (Horner & Sugai, 2015).

Larger Units of Analysis and Measurement

In the early years of the Teaching-Family Model, individual clients and teaching family parents were the units of analysis. With iterative replication and scaling in the later

years, the larger system of human-service delivery also became a unit of analysis. Likewise, units of analysis in PBIS began with students, families, and teachers, and then expanded to include entire schools, school districts, and states. Successful demonstrations of the scaling of PBIS have typically begun as a small pilot investments, with the trial period used to demonstrate to stakeholders that PBIS can be implemented with efficiency, that it produces valued outcomes, and that it can be implemented with reasonable resources (Horner et al., 2019). This proof of concept was then used to leverage (a) investment in ongoing funding, (b) a change in organizational policies and procedures, and (c) the repurposing of existing resources to promote the use of PBIS. This pattern has been demonstrated across states that have successfully adopted PBIS (Horner et al., 2019).

Also similar to the Teaching-Family Model, as the units of analysis became larger and more complex, the methods for evaluating the effects of PBIS changed. In PBIS, data are collected on different units of analysis to assess treatment integrity and student outcomes, and these data guide school teams in making decisions that will improve the education students receive across all three tiers. For example, treatment integrity data are collected at the level of the individual change agent (e.g., teachers and staff) to determine the extent to which they are implementing practices accurately, and data are also collected at the systems (school-wide) level to evaluate the extent to which the multitiered PBIS framework is in place. Student behavior data are collected at the individual level for those students who require more intensified interventions, and proxy measurement (e.g., office discipline referrals and academic performance) is used at the systems level to gauge the degree to which the school-wide framework is affecting all students in the school.

Implement Through Teams

Another message from the Teaching-Family Model experience is the benefit of implementing effective practices through the ongoing work of implementation teams (Fixsen & Blase, this issue; Fixsen, Blase, Metz, & Van Dyke, 2013). Rather than rely on a single expert, as knowledgeable as that person may be, large-scale implementation requires that many people be clear about the core elements of the program and how they fit in the local context. This realization led the Teaching-Family Model implementers to recommend investment in teams as the unit of active skill development. Teams are better able to incorporate the full range of concerns of local stakeholders and are more likely to build the broad consensus of people in an organization. Teams also work to develop and sustain the infrastructure needed to support implementation of the program at scale. Investing in local teams is both more efficient for initial implementation and more effective for achieving sustained implementation. The emphasis on leadership teams at the state, district, and school levels has become a fundamental component of effective PBIS implementation (Horner et al., 2010).

Focus on Organizational Systems

Among the most underappreciated messages from the Teaching-Family Model developers was that effective practices will endure and scale only if they are combined with adequate organizational systems (Fixsen et al., 2005). This is not a new idea or

message, but it a message often ignored by researchers focusing on the details of a specific practice or implementers focusing on small organizations. Systems are more than the mission and policies of an organization. The organizational systems include operating procedures, hiring, training, evaluation, team development, time allocation, and data tools available to those working in an organization. These systems are captured in the implementation drivers proposed by Fixsen and Blase (this issue) and in previous publications (Fixsen et al., 2013; Fixsen, Blase, & Fixsen, 2017). The systems within an organization establish the contingencies for initial and sustained use of effective practices. As Dean Fixsen often quotes, “. . . systems produce exactly the outcomes they are designed to produce (intentionally or unintentionally).” With a focus on organizational systems in the larger context of education in the United States, we are able to examine the relevant contingencies at play across different levels (i.e., classroom, school, district, state, federal), and then adjust and align our approach accordingly to support effective implementation. If the outcomes are measured and determined to be unacceptable it is seldom sufficient to look only for new practices. The real challenge is to examine the organizational systems. A message taken to heart by PBIS is that unless we define the organizational systems that promote and support the use of effective practices, we will not achieve sustained implementation of core PBIS practices.

Honor the Continuous Improvement Cycle

In efforts to change human organizations, it is highly unusual to “get it right” the first time. It is far more common to get it “partially right.” Any effort to influence a major program of support (e.g., early intervention, school-based behavior support, mental health, community health) will likely benefit from a planned process of implementation, evaluation, adaptation, and reimplementation. Not only is this continuous improvement cycle tremendously helpful for initial implementation efforts, but human service organizations are always in flux. Populations change; laws, rules, and policies change; social norms change; personnel entry skills change. Change in the service system typically requires adaptation in the intervention practices. Not necessarily adaptation of the core features or “kernels” (Embry & Biglan, 2008; Fixsen et al., 2013) of the practice, but likely the way in which those core features are achieved. A major lesson from the Teaching-Family Model is that our job as implementers is not over when initial implementation occurs with high treatment integrity. Rather, we should assume that sustained use of effective practices will require regular (annual or biannual) assessment of both the integrity with which core features are being implemented, and the extent to which valued outcomes are being achieved. Continuous improvement is such an essential feature of systemic change that “improvement cycles” have been identified as one of the six active implementation frameworks proposed by Fixsen and Blase (this issue).

Conclusion

The Teaching-Family Model and PBIS are examples of how the science of ABA can be used to address high-impact social problems at scales of social importance. In this

commentary, we outlined some of the primary lessons gleaned from the Teaching-Family Model and how they informed the scaling-up of PBIS in schools: start with stakeholder values, use the science, expand to larger units of analysis, implement through teams, focus on systems, use data to guide improvement, and be persistent. Like the Teaching-Family Model, behavioral science is responsible for the success of PBIS. Values guide the selection of where behavioral science is targeted, research guides the development of effective practices, and implementation science guides the scaling of these practices to levels of significant social impact.

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