Effective implementation capacity is essential to improving education. The State Implementation & Scaling-up of Evidence-based Practices Center supports education systems in creating implementation capacity for evidence-based practices benefitting students, especially those with disabilities.

Creating Meaningful Change in Education: A Cascading Logic Model

Creating meaningful change in a state's education system from the capitol to the classroom is complex and challenging work. Over the past several decades, considerable research, policy, and funding have focused on the use of evidence-based programs (EBP) in schools. However, these practices only are effective when fully and effectively implemented by teachers in the classroom, so all students can benefit (Aladjem & Borman, 2006; Vernez, Karam, Mariano, & DeMartini, 2006).

So one may ask, how can a State Education Agency (SEA) actively promote and support organizational and systems change and assess the effects of change on a large scale? The answer may lie in a logic model informed by implementation science — and characterized by multi-level supports that interact (Fixsen, Blase, Metz, VanDyke, 2013; Huang, Drewnowski, Kumanyika, & Glass, 2009; Panzano & Roth, 2006; Weiner, 2009).

The Cascading Logic Model

Root cause analysis encourages asking why five times (Ohno, 1988) to get at the underlying reasons for successes, accidents, and failures. *Implementation science* encourages asking *how* five times to plan for the SEA, Regional, District, and School capacity needed to achieve the promised outcomes of an evidence based practice (EBP) in the classroom. The Cascading Logic Model helps states define and operationalize the infrastructure needed for effective statewide implementation of EBPs. In a Cascading Logic Model, each independent variable (input) is a dependent variable (output) at the next level.

How can EBPs lead to significant changes in educational contexts and produce educational outcomes at scale? Improving education is a complex undertaking. About 6 million teachers and staff provide education to over 55 million students in 58 federal jurisdictions in over 15,000 districts, and 90,000 schools. Students can only benefit from effective innovations they experience in their education settings. This means teachers have to use those innovations with fidelity and good outcomes in each classroom. So, what can a State do to create the infrastructure and capacity to impact all the students in all the schools in the State?

The following table outlines a Cascading Logic Model approach to analyzing and planning for the infrastructure and supports needed. Asking *how* five times focuses attention on operationalizing the processes needed at each level of the education system to establish and sustain *new* practices in *existing* systems. Thus, capacity development is not just a label or a big idea. Capacity development is a specific set of supports, communication links, and competencies embedded in State education systems to support the achievement of desired outcomes. Capacity is the ability to do what is needed to produce intended outcomes at each level resulting in reliable outcomes from one teacher to the next, one school to the next, one district to the next, one State to the next, and one year to the next.

Cascading Logic Model (Ask "*How*" Five Times)

Input / How	Desired Output
1. *How will students benefit?* Teachers' consistent use of effective innovations with high fidelity to the innovation-as-intended	*Improved student outcomes in academics and behavior —the ultimate goal!*
2. *How will teachers be supported?* District and school implementation teams support teachers' using innovations effectively	Teachers' consistent use of effective innovations with high fidelity to the innovation-as-intended
3. *How will District and school implementation teams be developed & supported?* Regional implementation teams develop, support and sustain district implementation teams	Effective district and school implementation teams are created to support teachers' using innovations effectively
4. *How will Regional supports be developed to support District and school implementation teams?* State Transformation Specialists and State Capacity Building Workgroups develop and sustain regional implementation teams	Regional supports are created for developing and sustaining district implementation teams who support building level teams
5. *How will State Transformation Specialists and the State Capacity Building Workgroup be developed?* The OSEP and the SISEP Center support the development of state infrastructures for implementation and facilitate system change needed to expand and sustain capacity in States, regions, districts, and schools	Skills and abilities of State Transformation Specialists and State Capacity Building Workgroups are developed for creating and sustaining regional implementation teams

Implications for Organizational and Systems Change

Education systems and the units within those systems are highly variable. An implementation infrastructure in the form of Implementation Teams at each level can be developed to accommodate the variability. Implementation Teams can make use of cutting edge knowledge to conduct implementation-informed work in regions, districts, and schools so that teachers have adequate support for effective instruction when interacting with students in the classroom. Existing teams and structures can be modified and repurposed to produce greatly improved and predictable outcomes for students.

References

Aladjem, D. K., & Borman, K. M. (Eds.). (2006). Examining comprehensive school reform. The Urban Insitute.

Fixsen, D., Blase, K., Metz, A., & Van Dyke, M. (2013). Statewide implementation of evidence-based programs. Exceptional Children, 79(2), 213-230.

Huang, T. T., Drewnowski, A., Kumanyika, S. K., & Glass, T. A. (2009). A systems-oriented multilevel framework for addressing obesity in the 21st century. Preventing Chronic Disease, 6(3).

Ōno, T. (1988). Toyota production system: beyond large-scale production. Productivity press.

Panzano, P. C., Seffrin, B., Chaney-Jones, S., Roth, D., Crane-Ross, D., Massatti, R., & Carstens, C. (2004). The innovation diffusion and adoption research project (IDARP). In D. Roth & W. Lutz (Eds.), New Research in Mental Health (Vol. 16, pp. 78-89). Columbus, OH: Ohio Department of Mental Health Office of Program Evaluation and Research.

Vernez, G., Karam, R., Mariano, L. T., & DeMartini, C. (2006). Evaluating Comprehensive School Reform Models at Scale: Focus on Implementation. RAND Corporation.

Weiner, B. (2009). A theory of organizational readiness for change. Implementation Science, 4(1), 67.

About SISEP

Effective implementation capacity is essential to improving education. The State Implementation & Scaling-up of Evidence-based Practices Center supports education systems in creating implementation capacity for evidence-based practices benefitting students, especially those with disabilities. For more Information visit us on the web at: http://www.scalingup.org