Supporting Survey Data Use to Strengthen Organizational Conditions in Early Education

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Abstract

Background:

School climate—driven by the *organizational conditions* of a learning setting—has consistently been found to be related to student outcomes (e.g., Allensworth, Ponisciak, & Mazzeo, 2009; Kraft, Marinell, & Shen-Wei Yee, 2016; Pallas & Buckley, 2012; Sebastian & Allensworth, 2012). Under the newest federal education legislation (Every Student Succeeds Act), districts and states have broadened K-12 school quality definitions to include school climate. Furthermore, research focused on particular organizational aspects of ECE programs—such as strong leadership or trusting working environments—suggests that programs with supportive culture and climate are more likely to exhibit higher instructional quality (e.g., Burchinal, Vandergrift, Pianta, & Mashburn, 2010; Dennis & O'Connor, 2013; Rohacek et al., 2010). Although ECE improvement efforts aimed at supporting structural, program-, and center-level features (e.g., funding, certification requirements, teacher-child ratios) are plentiful, there are few explicitly targeting program climate or organizational *processes* (Barnett et al., 2013; National Association of Child Care Resource and Referral Agencies, 2011; Tout et al., 2010).

In addition to a field-relevant tool measuring organizational conditions, practitioners also need resources to support their ability to use this new data to make changes. Research suggests that practitioners' motivation and success using evidence to inform decision-making is enabled when data are displayed visually and when data review, interpretation, and use are structured by protocols that leaders and staff use together (Heck & Hallinger, 2009; Lachat & Smith, 2005; Leithwood, Anderson, Mascall, & Strauss, 2011; Marsh, Pane, & Hamilton, 2006; McDonald, Mohr, Dichter, & McDonald, 2013; Wayman, 2005).

Purpose:

Applying these research-based principles, the present work seeks to address this gap, by administering a validated tool that measures ECE organizational conditions (deleted for review) and testing new supports designed to promote programs' use of the data from those surveys. The *Early Education Surveys* were developed to measure key organizational conditions, adapted from the 5Essentials K-12 surveys (Bryk et al., 2010). The tool was validated in 2018 and is now beginning to be used in ECE settings. To support the roll-out of the tool, accompanying *Data Use and Improvement Resources* (*Improvement Resources*) were developed to support effective use of those survey data and constructs by practitioners. (See Table 1 for description of the protocols included in the *Improvement Resources*.) Together, the surveys and *Improvement Resources* aim to generate improvements in ECE teaching and learning by strengthening the organizational conditions in which educators work.

This proposed paper presents findings from a year-long early implementation study of practitioners' initial administration of the *Surveys* and use of the *Improvement Resources* to guide their understanding of survey data and incorporate that understanding into their

improvement planning processes. In line with SREE's theme for this year, the goal of this work was to ensure that tools available for use by ECE practitioners are sensitive to the needs of those practitioners and empower them to efficiently integrate data and evidence into their practice.

We studied practitioners' implementation of those resources using observations, video recordings, document review, and interviews, posing the following research questions:
1. How do survey data visualizations promote knowledge of survey constructs, and scores?
2. How do survey data dialogue and root-cause analysis protocols promote understanding and analysis of organizational strengths and weaknesses?
3. How do Plan-Do-Study-Act (PDSA) cycle protocols promote adoption and testing of small changes towards incrementally strengthening organizational conditions?
4. Do the resources increase motivation and confidence to use survey data to inform improvement decision-making and action?

Setting:
This study was conducted in one school district (6 sites) and one community-based organization (4 sites) in two large, Midwestern cities, blending multiple public funding for ECE programming.

Participants:
All sites had 3 or more preschool classrooms and upwards of 15 staff members who worked directly with preschool students and/or families. Across sites, 192 teachers and 752 parents completed surveys. Forty-five data use and improvement planning meetings were held across the sites.

Research Design, Data Collection and Analysis:
Practitioners' implementation of the *Improvement Resources* was studied qualitatively over the course of one school/program year. Using a structured observation protocol, we observed 36 out of 45 data use and improvement planning meetings; recorded 17 hours of video from 12 strategically-selected meetings; and conducted cognitive interviews with leaders who facilitated meetings to analyze their understanding of the protocol phases and aims. Data were iteratively coded to identify refinements to visualizations and protocols.

Findings/Results:
Survey data visualizations support accurate interpretation of survey scores and clarify dimensions of measured constructs. Data dialogue and root-cause analysis protocols support open-minded exploration of colleagues' and parents' perceptions, and analysis of wide-ranging causes of organizational strengths and weaknesses. Survey data visualizations, data dialogue protocols, and root cause analysis built upon each other to incrementally increase practitioners' motivation to attend to and improve organization-level processes. PDSA protocols support high-fidelity implementation of small change, rapid-improvement cycles and build a belief in the possibility and power of incremental change.

All sites experienced the same challenge: scheduling and consistently protecting time for staff to meet together to engage with these *Improvement Resources*. When staff were unable to consistently attend these meetings or meetings were scheduled too far apart, sites were limited in

their ability to realize all of the successes described. Protocols were designed to build on one another, and we observed that interruptions to this process lessened the benefits to sites. Learnings from this initial implementation year are being used to further refine the guidance and to conceptualize additional supports for programs implementing these *Improvement Resources* in the future. See Table 1 for illustrative quotes of findings by protocol.

Conclusions:
The current project presents findings from an initial implementation of *Data Use and Improvement Resources* designed to enable practitioners' efficient and effective use of *Early Education Surveys* data. Findings indicate that the resources may be helpful with practitioners' integrating survey results into their practice. In particular, the protocols teaching practitioners how to engage in root cause analysis and rapid-cycles of improvement appeared to deepen their confidence with diagnosing strengths and weaknesses and brainstorming small, low-energy change ideas, which ultimately we expect will better serve practitioners who will use the surveys and data use tools in the future. Simultaneously, common challenges identified during the early implementation study are informing further refinements to the resources. We are currently working with state and local education agencies on findings from both studies of validation and data use to influence systems-level policies and supports for programs and practitioners.

References

Aikens, N., Klein, A. K., Tarullo, L., & West, J. (2013). *Getting ready for kindergarten: Children's progress during Head Start. FACES 2009 report (OPRE Report 2013-21a).* Washington, DC: Office of Planning, Research & Evaluation, Administration for Children & Families, U.S. Department of Health

Allensworth, E., Ponisciak, S., & Mazzeo, C. (2009). *The schools teachers leave: Teacher mobility in Chicago Public Schools.* Chicago, IL: Consortium on Chicago School Research.

Barnett, W. S., Carolan, M. E., Squires, J. H., & Clarke Brown, K. (2013). *The state of preschool 2013: state preschool yearbook.* New Brunswick, NJ: National Institute for Early Education Research.

Burchinal, M., Vandergrift, N., Pianta, R. C., & Mashburn, A. (2010). Threshold analysis of association between child care quality and child outcomes for low-income children in prekindergarten programs. *Early Childhood Research Quarterly, 25*, 166-176.

Dennis, S. E., & O'Connor, E. (2013). Reexamining quality in early childhood education: Exploring the relationship between the organizational climate and the classroom. *Journal of Research in Childhood Education*, *27*(1), 74-92.

Early, D. M., Maxwell, K. L., Burchinal, M., Alva, S., Bender, R. H., Bryant, D., & Henry, G. T. (2007). Teachers' education, classroom quality, and young children's academic skills: Results from seven studies of preschool programs. *Child Development, 78*(2), 558-580.

Ehrlich, S.B., Pacchiano, D.M., Stein, A.G., Wagner, M.R., Luppescu, S., Park, S., Frank, E., Lewandowski, H., & Young, C. (2018). *Organizing early education for improvement: Testing a new survey tool.* Chicago, IL: University of Chicago Consortium on School Research and the Ounce of Prevention Fund.

Heck, R. H., & Hallinger, P. (2009). Assessing the contribution of distributed leadership to school improvement and growth in math achievement. *American Educational Research Journal, 46*(3), 659.

Kraft, M. A., Marinell, W. H., & Shen-Wei Yee, D. (2016). School organizational contexts, teacher turnover, and student achievement: Evidence from panel data. *American Educational Research Journal, 53*(5), 1411-1449.

Lachat, M. A., & Smith, S. (2005). Practices that support data use in urban high schools. *Journal of Education for Students Placed at Risk*, *10*(3), 333-349.

Leithwood, K. A., Anderson, S. E., Mascall, B., & Strauss, T. (2011). School leaders' influences on student learning: The four paths. In T. Bush, & D. Middlewood (Eds.), *The principles of educational leadership and management.* London: Sage Publishers.

Marsh, J. A., Pane, J. F., & Hamilton, L. S. (2006). Making sense of data-driven decision making in education. RAND:

McDonald, J. P., Mohr, N., Dichter, A., & McDonald, E. C. (2013). *The power of protocols: An educator's guide to better practice*. Teachers College Press.

National Association of Child Care Resource & Referral Agencies (NACCRRA). (2011). We can do better: 2011 update. NACCRRA's ranking of state child care regulation and oversight. Arlington, VA: NACCRRA.

Pacchiano, D.M., Wagner, M.R., & Lewandowski, H. with Ehrlich, S.B. & Stein, A.G. (2018). *Poised for improvement: Illustrations of essential organizational support structures and practices in early education sites.* Chicago, IL: The Ounce of Prevention Fund and the University of Chicago Consortium on School Research.

Pallas, A. M., & Buckley, C. K. (2012). *Thoughts of leaving: An exploration of why New York City middle school teachers consider leaving their classrooms.* New York: Research Alliance for New York City Schools.

Pianta, R. C., La Paro, K. M., & Hamre, B. K. (2008). *Classroom Assessment Scoring System (CLASS).* Baltimore, MD: Paul H. Brookes Publishing Co.

Rohacek, M. Adams, G. C., Kisker, E. E., Danziger, A., Derrick-Mills, T., & Johnson, H. (2010). *Understanding quality in context: Child care centers, communities, markets, and public policy.* Retrieved from Urban Institute website: http://urban.org/UploadedPDF/412191-understand-quality.pdf

Ross, C., Moiduddin, E., Meagher, C., & Carlson, B. (2008). *The Chicago program evaluation project: A picture of early childhood programs, teachers, and preschool-age children in Chicago, Final External Report.* Princeton, NJ: Mathematica Policy Research, Inc.

Sebastian, J., & Allensworth, E. (2012). The influence of principal leadership on classroom instruction and student learning a study of mediated pathways to learning. *Educational Administration Quarterly*, *48*(4), 626-663.

Tout, K., Starr, R., Soli, M., Moodie, S., Kirby, G., & Boller, K. (2010). Compendium of quality rating systems and evaluations. Washington, DC: Child Trends.Wayman, J. C. (2005). Involving teachers in data-driven decision making: Using computer data systems to support teacher inquiry and reflection. *Journal of education for students placed at risk*, *10*(3), 295-308.

Table 1. *Overview of Early Education Surveys Data Use and Improvement Planning Resources*

Data Use & Improvement Planning Protocol	Session Length	Session Aim
Session 1: Getting to Know the Early Education Essentials: Leadership Reflection & Data Dialogue	2.5 hours to complete the entire protocol; or 90 minutes each to divide the protocols into reflection and data dialogue sections	This session aims to create shared understanding of essential organizational climate and conditions for improvement in early education settings, and to provide protected time for leaders to collectively review and digest survey response data in advance of the staff session.

Observation/Interview Data Illustrating Practitioners' Experience:
"All the six essentials emphasize all of us working together – that everyone needs to work together in order for real change and great outcomes." (School-district administrator)
"We don't get to often have conversations at that level. That was uber professional. I loved it." (Community-based Center Director)

Session 2: Getting to Know the Early Education Essentials: Staff Reflection & Data Dialogue	2.5 hours if reflection and data dialogue are combined; or 90 minutes each for reflection and data dialogue	This session aims to create shared understanding of essential organizational climate and conditions for improvement in early education settings, and to provide protected time for staff to collectively review and digest survey response data.

Observation/Interview Data Illustrating Practitioners' Experience:
"I wasn't expecting to see under "Parent Voice" the parents anything about how we how teachers communicate. That essential seems more difficult than the others because it's really about developing a relationship and on an individual basis. Our parents are super in a hurry. We need creative solutions."
(Community-based ECE teacher)

Session 3: Early Education Essentials Root Cause Analysis & Plan-Do-Study-Act (PDSA) Planning	2 hours; or 60 minutes each if root cause analysis and Plan-Do-Study-Act Planning is divided	This session aims to establish shared understanding of the root causes of organizational weaknesses; collectively design small change(s) that address root causes but should involve minimal effort; plan implementation of the small change(s); and implement and track those small change(s) over a 30-day period.

Observation/Interview Data Illustrating Practitioners' Experience:
"The fishbone activity has us figuring out what we need to do together to improve. We got our magnifying glass and flashlights to look at the dimensions of these things to see what we could do." (School Principal)
"We can continue complaining about the violence and other things these young kids are seeing in their homes and in the community…or I can adjust my perspective and bring up compassion for these children." (School District ECE teacher)

PDSA Cycle Check-In & Recycle	45-minutes	This session aims for leaders and staff to study their 30-day implementation of a small change(s); assess how the test went, what was learned, revise their understanding of root causes of organizational strength and weaknesses; and determine how to Act -- Abandon, Adapt, Expand, or Adopt the small change(s).

Observation/Interview Data Illustrating Practitioners' Experience:

"By making the little extra effort to communicate, there's a better sense of community, contribution, attendance and participation at extracurricular events." (Community-based ECE teacher)

"I feel like it did go as expected in some ways, but I think I expected to reach more parents so I still feel like there's a big chunk missing…I still want to continue what we're doing, I think it worked great, but I want to be able to reach more parents." (School district ECE teacher)

This kind of made us want to blossom.… we saw that this is what happens with this minimal effort and to think what could we do if we expanded this…if we did this all year long." (School district ECE teacher)