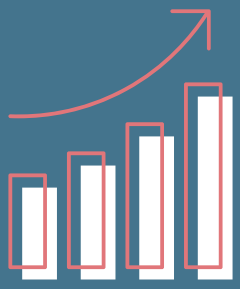
Policy Brief

How a Better Understanding of Scaling Can Enhance Early Childhood Policy and Improve Lives

Center for Early Learning + Public Health

GRIFFIN APPLIED ECONOMICS INCUBATOR



A wealth of literature demonstrates the value of early childhood programs and their potential to change lives.

Often-cited research indicates that high-quality early childhood programs deliver annual returns on investment of 7-13%.[1] And yet, evidence-based early childhood interventions have not yet generated significant population-level change for children or caregivers living in poverty.[2] One reason is that there is a critical missing link in the evidence-based policymaking process: understanding how to scale evidence-based programs (EBPs). The incredible promise of a 13% ROI, not to mention the life-altering effects of participating in a high-quality early childhood program, only hold true if the programs found to produce such results can be scaled up to serve a broader population.

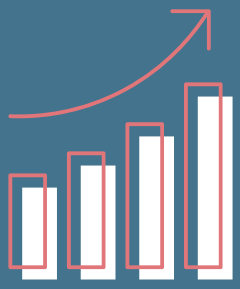
The Promise of High-Quality Early Childhood Programs

The first years of a child's life present the most critical window for supporting and promoting cognitive development. From birth to age 3, babies gain more than a million neural connections every second.[3]

This development fuels the ability to think, speak, learn, reason, and ultimately succeed. It makes intuitive sense, then, that interventions aimed at the early years are especially impactful. And science supports that intuition.

Two programs, in particular, are held up as exemplars of what early childhood programs can achieve: The Perry Preschool Project, which enrolled low-income, 3-and 4-year-olds in the 1960s, and the Carolina Abecedarian Project (ABC), which served disadvantaged children from birth to age 5 in the 1970s. Groundbreaking research led by Nobel-Laureate Professor James Heckman has demonstrated that participation in these programs led to significantly better life outcomes across a wide-range of measures and that the programs generated impressive annual ROIs, as noted above.

That body of research has helped establish a widespread understanding that preschool and early childhood programs have an important role to play in preparing children—particularly children born in poverty—for school and life. With approximately 23 million children under 5 in the U.S., including 4.1 million living in poverty (as of 2019),[4,5] the need for such programs is great, as is their potential promise. The COVID-19 crisis has further underscored the fragile—and essential—nature of the United States' early childhood infrastructure as well as the stark disparities in need and access that fall along racial and socio-economic lines. [6]



Failed to Scale

In 2017, public spending on early child care and education reached $34 billion, while families invested an additional $42 billion.[7] (In 2020-21, the federal government allocated more than $50 billion in relief funding to the struggling industry.[8]) Despite this investment, it is critical to note that not all early childhood programs are created equal—and not all programs are easily scaled. The Perry Preschool and ABC programs were of notably high quality. Perry students received daily classroom instruction as well as a weekly visit from their teacher at home. ABC provided comprehensive resources, including on-site pediatricians, nutritional meals and snacks, and early learning for five years. The effects of these programs, which were developed and conducted as research studies in communities that had few other high-quality child care options, have yet to be replicated at scale.

Understanding why interventions that work well in initial research studies then fail to scale up is critical—and relevant to all policy domains, not just early childhood. Promising interventions in education, medicine, agriculture, energy conservation and beyond have the potential to help billions of people. But when they don't scale effectively? Not only do potential recipients miss out on the benefits of that particular program, but it also makes it harder for policymakers to justify investing in other promising programs in the future.

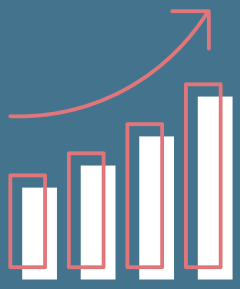
Understanding the Science of Scaling

A new and growing body of research is dedicated to examining how experimental insights can effectively be scaled and to advancing the "science of using science," or the idea that experimental research must be applied in a careful, systematic way in order to reap the benefits found within.

Most research studies, even rigorous randomized controlled trials (RCTs), only reveal what an intervention does for a particular population and in a particular context. A promising RCT does not mean that its results can be applied to other children or families or in different communities. It's the "science of using science" that reveals what factors help determine whether an intervention might deliver the same level of impact in a different place, in a different context, and with a different population.

University of Chicago researchers John List and Dana Suskind and colleagues, including Omar Al-Ubaydli, have identified four sources of problems or threats to the research behind evidence-based programs when it comes to scaling:[9]

- Individuals studied in the research setting may not be representative of the population at-large.
- The specifics of the program and the ways in which it is delivered/received in the research setting may not be representative of the broader real-world context.



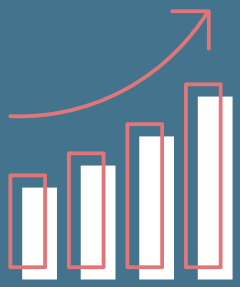
- The initial, promising research results may have been interpreted incorrectly, meaning there is not sufficient evidence to support scaling.
- There may have been spillover effects in the initial study that were not accounted for, meaning the program effects may be stronger (or weaker) at scale but research doesn't measure these effects. For example, the program may have benefitted (or harmed) individuals who were not actually participating in the study.

These researchers and others have turned their attention to examining what can be done to address those threats and to enable successful scaling. A new book edited by List, Suskind and Lauren Supplee offers several proposed solutions. "The Scale-up Effect in Early Childhood and Public Policy: Why Interventions Lose Impact at Scale and What We Can Do About It" provides a roadmap to help legislators and public officials effectively integrate the "science of using science" into the policymaking process, thus mitigating threats to scalability and enhancing policy outcomes. Those recommendations are outlined below. Similar blueprints for other stakeholders, including researchers and philanthropists, are included in the book.

Recommendations

Policymakers can mitigate challenges associated with scaling by considering the degree to which available evidence on an intervention aligns with their situation and by investing in the capacity needed to support intervention implementation. To that end, policymakers should:

- **Compare the context of studies on an intervention to their own context.** Consider available information about the population of study participants, characteristics of the workforce that implemented the intervention, properties of the setting in which the intervention was studied, and potential economies or diseconomies of scale.[10]
- **When possible, look at findings from replication studies prior to implementing or scaling a program.** Replication studies can provide insight on potential challenges to scaling, contexts in which an intervention had weaker effects than suggested by an initial pilot study, and modifications that may need to be made in new contexts.[11]
- **Invest in the workforce needed to sustain a scaled-up intervention.** Assess the strengths, needs, and availability of the existing workforce, as well as the intervention's reliance on certain workforce characteristics, to understand and invest in the support it will need to implement and sustain an intervention.[12]



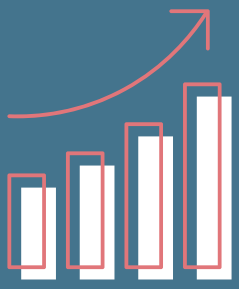
- **Invest in capacity within local, state, or federal implementing agencies to conduct ongoing evaluation.** Building this capacity will facilitate the ability to provide support to and evaluate implementation and outcomes of interventions.[13]
- **Require funding and oversight agencies to collect and share fidelity statistics.** This will help agencies better understanding the degree to which interventions are being implemented with fidelity and understand potential challenges to achieving outcomes. [14]
- **Develop partnerships and co-create agendas with researchers, practitioners, and communities**. Through these partnerships, policy makers can shape research agendas to align with priorities and needs on the ground, identify key questions, and highlight target outcomes for interventions.[15]

Conclusion

It is critical that researchers and policymakers alike understand when and how experimental insights scale to the broader population of people and situations. Failing to do so can lead to a vast waste of resources, a missed opportunity to improve people's lives, and a diminution of the public's trust in science and in public policy.

Notes

1. Zhou, J., Baulos, A., Heckman, J.K., & Liu, B. (2021). Importance of Understanding the Science of Scaling. In List, J., Suskind, D., & Supplee, L. (Eds.), The scale-up effect in early childhood & public policy: Why interventions lose impact at scale and what we can do about it. Routledge.
2. See Fagan, A.A., Bumbarger, B.K., Barth, R.P. et al. Scaling up Evidence-Based Interventions in US Public Systems to Prevent Behavioral Health Problems: Challenges and Opportunities. Prev Sci 20, 1147–1168 (2019). https://doi.org/10.1007/s11121-019-01048-8
3. Center on the Developing Child. (2007). The Science of Early Childhood Development (InBrief). Retrieved from www.developingchild.harvard.edu.
4. Federal Interagency Forum on Child and Family Statistics. (2018). POP1 Child Population: Number of Children (In Millions) Ages 0-17 in the United States by Age, 1950-2019 and Projected 2020-2050. Retrieved from https://www.childstats.gov/americaschildren/tables/pop1.asp.
5. The Annie E. Casey Foundation Kids Count Data Center. (2019). Children in poverty by age group in the United States, 2019. Retrieved from https://datacenter.kidscount.org/data/tables/5650-children-in-poverty-by-age-group?loc=1&loct=1#detailed/1/any/false/1729,37,871,870,573,869,36,868,867,133/17,18,36/12263,12264



6. Malik, R. Hamm, K., Lee, W.F., Davis, E.E., & Sojourner, A. (2020). The Coronavirus Will Make Child Care Deserts Worse and Exacerbate Inequality. Center for American Progress. Retrieved from https://www.americanprogress.org/issues/early-childhood/reports/2020/06/22/486433/coronavirus-will-make-child-care-deserts-worse-exacerbate-inequality/
7. Gould, E., & Blair, H. (2020). Who's paying now? Economic Policy Institute. Retrieved from https://files.epi.org/pdf/181729.pdf
8. Robbins, K. G. & Hardy, A. (2021, March 10). Child Care Relief Funding in American Rescue Plan: State-by-State Estimates. The Center for Law and Social Policy (CLASP). Retrieved from https://www.clasp.org/publications/fact-sheet/child-care-estimates-american-rescue-plan
9. Al-Ubaydli, O., Lee, M. S., List, J. A., & Suskind, D. (2021). The science of using science: A new framework for understanding the threats to scaling evidence-based policies. In J. List, D. Suskind, and L. Supplee (Eds.), The scale-up effect in early childhood & public policy: Why interventions lose impact at scale and what we can do about it. Routledge.
10. See: Chapter 4, Chapter 7, Chapter 8, Chapter 9, Chapter 10, Chapter 11, Chapter 14 of "The Scale-Up Effect in Early Childhood & Public Policy."
11. See: Chapter 7, Chapter 11 of "The Scale-Up Effect in Early Childhood & Public Policy."
12. See: Chapter 9, Chapter 11, Chapter 18, Chapter 20 of "The Scale-Up Effect in Early Childhood & Public Policy."
13. See: Chapter 19 of "The Scale-Up Effect in Early Childhood & Public Policy."
14. See: Chapter 9 of "The Scale-Up Effect in Early Childhood & Public Policy."
15. See: Chapter 12, Chapter 19, Chapter 21 of "The Scale-Up Effect in Early Childhood & Public Policy."

The TMW Center for Early Learning + Public Health is an interdisciplinary research institute at the University of Chicago that advances a novel public health approach to prevent early cognitive disparities and achieve impact at scale. Learn more at https://tmwcenter.uchicago.edu/.

The Kenneth C. Griffin Applied Economics Incubator at the University of Chicago is a hub for generating initiatives that drive broad-based thought and policy changes.