



**SECTION 3, CHAPTER 8**

**AN OVERVIEW OF IMPLEMENTATION  
RESEARCH AND FRAMEWORKS IN EARLY  
CARE AND EDUCATION RESEARCH**

---

JoAnn Hsueh, Ph.D., MDRC

Tamara G. Halle, Ph.D., Child Trends

Michelle Maier, Ph.D., MDRC







Recent years have seen a healthy debate on the effectiveness of early care and education (ECE) programming, which includes home-based care providers, community-based child care centers, and publicly funded programs such as Head Start and prekindergarten. Some exemplary ECE programs have had substantial positive impacts on classroom quality and young children's learning and development at scale (e.g., Gormley, Phillips, & Gayer, 2008; Weiland & Yoshikawa, 2013). Some ECE programs also have the potential to narrow early achievement gaps experienced by children from low-income backgrounds (Gormley, Gayer, Phillips, & Dawson, 2005; Weiland & Yoshikawa, 2013), dual language learning children (Bloom & Weiland, 2015; Bumgarner & Brooks-Gunn, 2015), and children identified as having a racial or ethnic minority background (Currie & Thomas, 1999; Gormley et al., 2005; Weiland & Yoshikawa, 2013).

However, the literature also shows that ECE programs can vary in their overall effectiveness; they can be effective in one set of circumstances but not consistently so in others (Bloom & Weiland, 2015). ECE quality still varies considerably (Burchinal, Magnuson, Powell, & Hong, 2015), and not all efforts to enhance ECE quality ultimately improve children's outcomes, even when they show robust improvements on different dimensions of quality (Bryant et al., 2009; Pianta, 2013; Yoshikawa et al., 2015). Indeed, achievement gaps are substantial and persistent (Reardon & Portilla, 2016) and still emerge before children even step foot in kindergarten classrooms (Halle et al., 2009; von Hippel, Workman, & Downey, 2018).

In light of this promising but inconsistent evidence, increasing access to effective, high-quality ECE programming that reliably narrows achievement gaps is a pressing challenge. Important questions remain regarding how best to bring effective ECE programs to scale so that all children have access to high-quality learning experiences and so that investments in ECE programming ultimately close disparities in school readiness and achievement outcomes, as children move into and through formal schooling (Phillips et al., 2017).

To bring effective ECE programs to scale and ensure better outcomes for all children, an understanding of program implementation—that is, the process or specified set of steps by which a program is put into practice—as well as of variation in program implementation across contexts and populations is required. We also need to attend to internal and external factors that affect the quality of program implementation across contexts and at scale. Therefore, we see evidence that an ECE program is effective as necessary but insufficient to guide successful program scaling that benefits all children.

**Research focused on implementation, particularly variation in implementation, can help address important knowledge gaps and issues in the ECE field.**

Implementation-related activities include designing and articulating the critical components of a program model, identifying the supports needed to implement the model successfully, and understanding what drives variation in implementation across programs and participants and what it takes to transport an effective program to other contexts to meet the needs of diverse populations (Martinez-Beck, 2013). Research focused on implementation, particularly variation in implementation, can help address important knowledge gaps and issues in the ECE field regarding program evaluation, adaptation, expansion, and scale-up, including:

- **How to strengthen program effectiveness:** We need to know more about how effective ECE programs drive improvements in outcomes for children. Implementation research can help identify which program components are most critical for promoting which child outcomes—and for whom. These insights can be used to think about how programs can be optimized to produce reliable, positive impacts for young children and thereby narrow early disparities in achievement. Further, careful attention must be paid to ensuring that design and implementation of investments in ECE programming do not inadvertently reinforce or exacerbate existing inequities in our educational systems, which could have the effect of perpetuating or magnifying disparities in early achievement gaps (Nores, Ch. 12).
- **How to replicate results:** The processes and procedures that made a program successful in its initial context may not be the same for the program to be effective in another context (or for a different population). We need to understand more about how to transport and adapt promising ECE programs to new contexts while maintaining quality and effectiveness.
- **How to scale up:** Few effective ECE programs are operating on a large scale—that is, programming that reaches a broad population or is delivered across multiple contexts. As with replicability, the processes and procedures for taking an effective program and then adapting and expanding it to fit larger systems or to reach broader or more diverse populations are not well understood.
- **How to make programs sustainable:** The field often focuses on establishing systems and infrastructures to ensure the delivery of a program in line with its intended program model. Yet we still do not fully understand what it takes to ensure that a program is maintained in such a way as to allow it to continue to produce positive effects. We also need further study of where investments related to system infrastructure and program improvement should be focused to ensure that the program continues to narrow early disparities in achievement over time.

Implementation research is an important tool for illuminating what makes ECE programs, practices, and policies (collectively referred to as “programs” in this chapter) effective, what is needed to support program replication, expansion, and sustainability, and how to guide program improvement to help ensure that ECE programs reach their potential for narrowing achievement gaps. This chapter lays the groundwork for ensuing chapters and outlines principles and frameworks from implementation science that undergird implementation research of ECE programming.

## WORKING DEFINITIONS OF IMPLEMENTATION SCIENCE AND IMPLEMENTATION RESEARCH

Implementation science is the set of frameworks and principles that explains the processes by which programs, policies, and individual practices are enacted in real-world settings (e.g., Century & Cassata, 2016; Damschroder et al., 2009; Peters, Adam, Alonge, Agyepong, & Tran, 2013). Implementation research encompasses the application of implementation science frameworks and principles to systematic inquiry into the act of carrying out a program, as well as systematic inquiry into how a program is received and experienced in real-world settings and situations. In its most basic form, implementation research and analysis aim to illuminate *what* is happening, *how* it is happening, *who* is making it happen, *why* a program achieves the outcomes that it does, and *for whom* it works best. Implementation research can take a vertical perspective, looking at how processes across different levels of the supporting system can work in synergistic or countervailing ways to support a program’s implementation, or it can take a horizontal perspective, examining how implementation unfolds across a range of different settings, contexts, and populations (Ryan, Ch. 11; Vavrus & Bartlett, 2006). Accordingly, implementation research can cover a wide range of topics, thereby providing an understanding of ECE programming at different stages of implementation and program development.

**In its most basic form, implementation research and analysis aim to illuminate what is happening, how it is happening, who is making it happen, why a program achieves the outcomes that it does, and for whom it works best.**

## ADOPTING AN INWARD AND OUTWARD FOCUS ON IMPLEMENTATION

---

Implementation frameworks underscore where research can focus and, in turn, generate hypotheses and research questions. A growing set of implementation frameworks have been applied to ECE; one kind focuses inward on program components and structure, and another focuses outward on the contexts and larger infrastructure that support successful implementation of programs and systems. An inward focus articulates key aspects of implementation, such as core program components, implementation drivers, implementation processes, or different stages of implementation and program development (e.g., The National Implementation Research Network). An outward focus conceptualizes which features of larger systems may help expand programs that were previously evaluated on a small scale and considers how such programs may be scaled up with fidelity (Fixsen & Blase, 2008; Supplee & Metz, 2015). Theoretical models of implementation emphasize the interdependency of factors across levels of analysis, that is, at the level of the individual, organization, and larger systems (Aarons, Hurlburt, & Horwitz, 2011; Domitrovich et al., 2008; Fixsen, Blase, Metz, & Van Dyke, 2013). Given this interdependence, implementation researchers differ in their perspectives of what constitutes an inward or an outward focus. Indeed, these distinctions can shift with a researcher's focus of inquiry. For the purposes of this chapter, implementation research that focuses inward addresses a program's theory of change or implementation processes, while implementation research that focuses outward is oriented to the larger context and infrastructure supports that surround a program. These foci highlight potential sources of variation that may account for the effectiveness (or lack thereof) of ECE programs, as well as for how such programs may have varying effects in different contexts and for children with different backgrounds.

### ► Inward focus

Taking an inward focus means conducting a systematic inquiry into the program itself. This inquiry begins by articulating the underlying logic model and theory of change delineating the mechanisms by which the program yields improvements in short- and longer-term outcomes for children. The assumption here is that the program under study has been or can be defined so that its components, staffing, and features are recognizable (and replicable). When such a program is studied, the underlying logic model of the program then begins with the well-articulated, measurable, and recognizable program components and staffing, that is, the program that was planned. From there, the implementation of program components—the program that is offered to participants—can be distinguished from the program components received (or taken up) by participants. Another component of the inward focus on implementation is the role of the implementers, that is, those who carry out the program components within the program itself. Implementers can be a team of individuals or just one person, depending on the program parameters and structure.

Intervention fidelity is the process by which the program as offered and as received is evaluated in comparison to the program as planned (Dunst et al., 2008; Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). It is important to note that intervention fidelity is a multidimensional construct that includes assessment of dosage, adherence, and quality, among others, to varying degrees in the literature (Dane & Schneider, 1998; Durlak & Dupre, 2008).

A focus on intervention fidelity provides a framework for inward examination of a program's theory of change or implementation processes. Such a focus is important because evidence indicates that variation in intervention fidelity influences outcomes (Durlak & DuPre, 2008; Wilson, Lipsey, & Derzon, 2003) and may lead to variation in program effectiveness. Further, in the context of program evaluation, understanding intervention fidelity is essential to interpreting outcomes. Without being able to assess implementation processes and fidelity, it is difficult to account for null or negative program effects. This is because it is not possible to parse whether null effects may be attributed to a lack of program strength (that is, poor intervention fidelity leading to no impacts) or to a poor program theory (that is, strong intervention fidelity but no impacts) (Dusenbury, Brannigan, Falco, & Hansen, 2003). In addition, assessing fidelity can help explain the why behind the causal relationships demonstrated through program impacts, as well as suggesting the effects that modifications to implementation processes and barriers to intervention fidelity may have on outcomes (Munter, Wilhelm, Cobb, & Cordray, 2014).

### ► **Outward focus**

Several conceptual frameworks guiding implementation research draw attention outward and focus on the broader organizational infrastructure, system, and/or contexts that influence implementation of a program model. Collectively, these systems and contexts have the potential to create a hospitable environment that can facilitate a program being carried out as expected (Fixsen et. al., 2005, Fixsen, Blase, Naoom, & Wallace, 2009; Metz, Bartley, Ball, Wilson, Naoom, & Redmond, 2015).

Elements of an outward focus on implementation include the implementation infrastructure (the tools, resources, and supports put in place to deliver the program model and underlying components), the implementation teams (organizations, providers, and individuals that help make successful delivery of the program model possible by supporting the implementers), and the characteristics of participants and contexts. These core elements can be conceptualized as proximal or distal contextual influences that interact dynamically with one another and also with the program itself.

These outward elements can operate in synergistic or countervailing ways to achieve desired outputs (delivery and receipt of program services by participants in line with the program model as planned) and, in turn, short- and longer-term outcomes for children. These contextual, organizational, and systems-level elements that support implementation represent an important source of variation that should be considered when evaluating the effectiveness of a program.

In order to deliver a program effectively as planned, with the ultimate goal of achieving outcomes for children that the early childhood program is designed to address, a strong infrastructure must be put in place to support the individuals who will carry out the underlying components of the program with fidelity. The implementation infrastructure includes organizational resources (both financial and in kind) that will provide for any materials and staff training required to implement the program, organizational policies and procedures that support rather than

work against the effective implementation of the program, external partnerships that will support the program and the organization in which it is embedded, strong leadership at all levels of the organization that will champion the program, and well-trained staff to carry out the program (Metz, Halle, Bartley, & Blasberg, 2013). This implementation infrastructure is sometimes categorized into three interrelated elements (Fixsen et al., 2005; Fixsen & Blase, 2008):

**In order to deliver a program effectively as planned, with the ultimate goal of achieving outcomes for children that the early childhood program is designed to address, a strong infrastructure must be put in place to support the individuals who will carry out the underlying components of the program with fidelity.**

- *competency drivers*, which refer to organizational processes that directly support the development and maintenance of the competency of frontline staff (including the selection, training, and continuous oversight and assessment of staff who are implementing the program), enabling them to carry out the program as planned,
- *organizational drivers*, which refer to the operating organization’s infrastructure and institutional capacity to support staff in implementing programs with fidelity (including policies and practices such as coaching) by using data and technology to monitor the progress of implementation of the program’s components, funding and other resources, and external partnerships that can provide additional resources for the effort, and
- *leadership drivers*, which refer to the individuals who are charged with supporting program implementation (but can—and should—also include those who are charged with direct program implementation) who can address both technical and behavioral/adaptive challenges to implementation.

These elements of the implementation infrastructure are hypothesized to be integrated and compensatory, meaning that if there is weakness in one area (e.g., you have limited control over the staff you can select to carry out the new practice), it may be possible to strengthen another area (e.g., you can offer additional training or coaching to existing staff and institute new organizational policies to support staff in the new practice) without compromising the overall supporting implementation infrastructure.



The people who support those who are implementing a new policy or practice are considered to be members of implementation teams (Halle et al., 2015). They are actors or teams who vary in terms of their power, influence, and proximity to the implementation of key program components. Examples include politicians and elected officials, who are generally further from the program's on-the-ground implementation; key personnel (such as program administrators and early adopters among program staff); and key stakeholders, such as program developers, who see themselves as authorizing an initiative or being responsible for the success of the initiative and take an active role in providing support for delivering the program components. Those who support implementation teams may do so in a variety of ways, such as by training individuals who are tasked with carrying out the new practice, monitoring success in carrying out the new practice, and/or providing feedback to practitioners to continually improve the new practice. Or they may be involved in funding the initiative, setting up and implementing supporting policies and practices within the organization, or creating alliances with partner organizations. With complex initiatives, multiple implementation teams supporting implementation at different levels of a program or system may be involved to provide the necessary leadership support.

An outward focus to implementation also considers the effect of the characteristics of the participants implementing and receiving the program, as well as the larger context in which the program is being implemented, on the success of program implementation. The composition of the participants and the relevant contextual characteristics may vary with regard to geography, reach, and scale of a program.

Whom the program intends to reach, as well as the population that is ultimately recruited, enrolled, and served, can vary. These are important considerations because a program that is effective for one group may not be effective for another. For example, the program may make certain assumptions about the risks, readiness, and capacities of intended participants. If the participants enrolled in the program do not bear out those assumptions, the model as it unfolds in real-world settings may need to be modified.

Similarly, a program that is effective in one set of contextual circumstances may not be effective in other circumstances, necessitating adaptation in key program components or adjustments in the implementation infrastructure. Contextual characteristics—such as political, economic, and social realities and constraints—can inform and shape implementation processes and infrastructures. Examination of context can bring to light other ways the program under study might serve those who are offered and receive it; a program's uptake in a community, and thus its ultimate "reach" and effectiveness, can vary depending on what other experiences are available to potential program participants in the area. In sum, characteristics of both program participants and settings offer critical insights into understanding a program's effectiveness.

While intervention fidelity is an important consideration for an inward focus to implementation, implementation fidelity is important for an outward focus. Implementation fidelity refers to the degree to which the implementation infrastructure and the supports encompassed therein—such as professional development, technical assistance, and other administrative assistance—are provided in a way that is consistent with what was planned. In some instances, resources and delivery of professional development supports may be distributed unevenly across a broad system of ECE programming. For example, the kinds of preparation and qualifications deemed necessary for and received by ECE teachers varies widely across ECE settings (see Pianta and Hamre, Ch. 5).

## INTERSECTION WITH STAGE-BASED FRAMEWORKS OF IMPLEMENTATION AND PROGRAM DEVELOPMENT

---

Areas of exploration and inquiry related to an inward or outward focus on implementation can help specify the who, what, and how of program implementation as well as why, for whom, and under what circumstances a program is effective when delivered in real-world settings (e.g., Fixsen et al., 2005). These insights are critical when programs evolve and progress over time. Yet all too often, systematic inquiry of implementation, particularly from an outward perspective, becomes the focus of research only in later stages of implementation and program development. Such insights, however, can be instrumental even in early stages of implementation and program development; they can help the field understand how programs can ensure the effectiveness and quality of ECE programming for all children by strengthening and adapting themselves. Illuminating the extent to which there is or is not cohesion and alignment across these drivers of implementation can improve the development, scaling, and sustainability of ECE programming with diverse providers and staff and diverse groups of children and families and thereby help reduce disparities in early achievement gaps.

Advancing these efforts requires tying together systematic, stage-based inquiry of implementation and program development. Two often-referenced stage-based frameworks are especially relevant here.

### ► Stages of implementation

Several implementation frameworks identify multiple stages in the implementation process (Aarons, Hurlburt, & Horowitz, 2011; Meyers, Durlak, & Wandersman, 2012). The National Implementation Research Network, for instance, identifies four implementation stages: exploration, installation, initial implementation, and full implementation (Bertram, Blase, & Fixsen, 2015).

During *exploration*, stakeholders are assessing their needs and identifying what will best fit those needs in terms of adopting new programs, policies, or practices. They are also examining the feasibility of taking on a new practice, program, or policy, including assessing buy-in by all those affected by such a decision. During *installation*, the new program is not yet being delivered, but stakeholders are busy making sure that they have the technical, financial,

and human resources to carry it out. This may involve hiring and training new staff or training existing staff (i.e., addressing staff competencies) or making structural and instrumental changes organizationally (i.e., addressing organizational infrastructure) that enable stakeholders to carry out the new program. *Initial implementation* signals the start of service delivery. During this stage, data are regularly gathered and used to assess how well things are going and to make adjustments, as necessary, with the goal of continuously improving implementation. Rapid-cycle problem solving becomes prominent during this stage and continues even when full implementation is achieved. *Full implementation* is characterized by skillful implementation of the new program, with the necessary skilled practitioners, organizational infrastructure, and leadership in place to support its continued reliable use and sustainability.<sup>1</sup> While these stages are presented here in a sequential, linear order, there is consensus in the field of implementation science that the stages are recursive (Saldana, 2014), and that achieving full implementation of a well-defined, evidence-based program can take between two and four years (Bierman et al., 2002; Fixsen, Blase, Timbers, & Wolf, 2001).

### ► Stages of program development

Those involved in program development also use a stage-based framework to describe the process. This framework begins at an *early* or *developing* stage (before scale-up) with a program model that is new or recently developed. The program is often piloted on a smaller scale or in a relatively controlled setting (for example, under the direct supervision of its developers and with eager volunteer participants) with the aim of clarifying and, if necessary, refining the program goals, target population, and key activities and components as they are being implemented.

As a program matures, it may move through the stages of *promising* to *effective*, if early efficacy trials establish evidence of effectiveness when the program is delivered on a relatively small scale. At this stage, efforts typically focus on replicating prior results and/or expanding the program, that is, scaling up in a limited way, so that it can be tested in more diverse populations and contexts; this is called “horizontal scaling” (Dunst, Bruder, Trivette, & Hamby, 2006; Hartmann & Linn, 2008). Goals for program development may thus move on to tasks aimed at understanding whether, when, how, and for whom—meaning under what conditions, across what contexts, and with what populations—the program can be expanded or successfully replicated, while seeking to further test the program’s effectiveness.

---

<sup>1</sup> Some implementation science researchers identify *Sustainability* as a distinct, fifth stage or “phase” of implementation (Saldana, 2014). Similarly, a well-established implementation framework in health science research, RE-AIM, identifies *Maintenance* as the final component of implementation (Damschroder et al., 2009).

As the program matures further, it often moves to a *scaling* stage of program development, whereby it is scaled more extensively with the explicit goal of building the level of effectiveness evidence for institutionalizing the program into an existing system to ensure longer-term sustainability; this is called “vertical scaling” (Dunst et al., 2006; Hartmann & Linn, 2008).

At different stages of implementation and program development, insights gained from implementation research can help the field understand how programs can continue to strengthen and evolve, helping them ensure that effective, high-quality ECE programming is being delivered across localities and on a broad scale in an effort to narrow achievement gaps. For example, during an initial implementation stage, the goal is to monitor and continuously improve implementation and refine and strengthen program design. At this stage of implementation, implementation research focusing inward may gather data to assess how well the program is being implemented and how the experiences of children with different backgrounds or experiences might vary, which can then be used to identify areas in which implementation processes and/or the program model can be adjusted, as necessary. Implementation research that focuses outward at this implementation stage, in contrast, may gather data to assess how well the infrastructure system and implementation teams are supporting implementation and how these experiences might be influenced by the characteristics of staff, information that can then be used to make adjustments to those supports, as necessary. In turn, this information could be used to ensure that the program delivery does not inadvertently reinforce processes that contribute to disparities in early achievement skills.

Similarly, in early or developing stages, key aims are to refine the program goals, model, and target population. Feasibility studies, demonstrations, pilot assessments, and early efficacy tests are aligned with these goals and may help challenge assumptions about elements of the program that are essential as designed or encourage exploration of alternative approaches and strategies that could strengthen the program’s overall effectiveness. Implementation research in these earlier stages of program development may thus focus inward to assess intervention fidelity and explore how it may change with adjustments to the program model or characteristics of the population being served. Meanwhile, implementation research with an outward focus may begin to describe the intersectionality of setting characteristics, the implementation teams, and children being served with a goal of improving how resources or supports can be allocated and tailored to ensure high-quality learning experiences for all children as the program moves into different stages of development.

Later stages of program development may use similar types of tests (e.g., efficacy or effectiveness studies), but they have a different goal in mind. For example, at a scaling stage of program development, the foci of research may turn outward toward testing and mapping multiple levels of system, infrastructure, and institutional supports and describing tensions and alignment of these components that support ECE programming. Research may also focus on the variation in implementation and on illuminating variation in program impacts across contexts, populations, and conditions using a variety of qualitative and quantitative methodological approaches. Thus, blending implementation



research from both inward and outward perspectives, while situating a program along different stages of implementation and program development, can help to identify sets of research questions and evidence-building research activities that can be used to build ECE programming on a large scale that moves toward the ultimate aim of reducing disparities in early academic achievement.

## CONCLUSION

---

The implementation frameworks we've presented illustrate where implementation research in ECE can continue to push forward in the coming years. By taking both an inward and outward perspective on implementation processes, research can point out how diversity in context, populations, resources, and systems intersect to affect the quality of ECE programming and in turn can broaden our knowledge of the influences that shape the lives and trajectories of children and that contribute to noted disparities in achievement as children progress through schooling. Research to date has provided some insights into the sources of variation in the effectiveness of different ECE programs. But many of the contextual influences that may lead to variation in an ECE program's effectiveness, particularly when delivered on a large scale, remain to be studied.

Implementation frameworks serve as organizing tools that help highlight underexplored areas and point to ways to improve ECE program effectiveness for narrowing achievement gaps. These frameworks suggest the need for more systematic collection of data early on about factors that constitute the supports for implementation and for a broadening of the conceptualization of measures and research designs that aim to address questions at different stages of implementation and program development.

Further, stage-based approaches to implementation research can be incorporated into the development, implementation, and scaling of effective early childhood programs, practices, and policies, with the research feeding back into ongoing improvement, sustainability, and scaling activities. By embedding the study of ECE programs within these frameworks, we can begin to broaden our knowledge of the influences that shape the lives and trajectories of young children, particularly those from low-income and racial, ethnic, and immigrant minority backgrounds.

**By embedding the study of ECE programs within these frameworks, we can begin to broaden our knowledge of the influences that shape the lives and trajectories of young children, particularly those from low-income and racial, ethnic, and immigrant minority backgrounds.**

Succeeding chapters build on the implementation frameworks introduced here and extend the conversation beyond the immediate impacts of ECE programming to more in-depth discussions and illustrations of how implementation research can be applied in innovative ways to guide and strengthen ECE programming and practices for all children.

“Designing Implementation Research to Guide the Scale-Up of Effective Early Care and Education Across Settings,” by Michelle Maier and JoAnn Hsueh, describes a framework that can help guide the empirical study of program implementation within an evidence-building context and discusses potential methodological and measurement considerations researchers should bear in mind when adopting an inward and outward focus to implementation research as a means of understanding variation in the impacts of ECE programming across diverse populations, contexts, and conditions.

In her chapter, “How Implementation Science and Improvement Science Can Work Together to Improve Early Care and Education,” Tamara G. Halle outlines the similarities and distinctions between implementation science and improvement science. The chapter provides concrete examples of these approaches as they have been applied to the study of home visiting models as a form of early childhood intervention aimed at improving outcomes for children and families. It concludes by considering how integrating implementation science, improvement science, and traditional program evaluation can further support the effectiveness and sustainability of early childhood interventions, especially those targeted to ECE settings.

Sharon Ryan’s chapter, “The Contributions of Qualitative Research to Understanding Implementation of Early Childhood Policies and Programs,” discusses qualitative methods that researchers can draw on to understand how processes of implementation are constructed and adapted. It underscores the value of moving beyond children’s immediate experiences in the classrooms, to take into account the perspectives of local actors, conditions, and contexts, and to begin to theorize how ECE policies, systems, and programs can be improved to address the needs of children with diverse backgrounds.

Milagros Nores’s chapter, “Equity as a Perspective for Implementation Research in the Early Childhood Field,” underscores that researchers must tackle biases and cultural limitations introduced by their own research methods; doing so will enable them to appropriately and fully understand how programs are operated and implemented across settings, contexts, and populations with diverse histories and backgrounds. This information can be used to assess the degree to which ECE programming meets equity goals of reducing inequity in young children’s learning opportunities and experiences.

## References

---

- Aarons, G. A., Hurlburt, M., & Horwitz, S. M. (2011). Advancing a conceptual model of evidence-based practice implementation in public service sectors. *Administration and Policy in Mental Health and Mental Health Services Research, 38*(1), 4-23.
- Bertram, R. M., Blase, K. A., & Fixsen, D. L. (2015). Improving programs and outcomes: Implementation frameworks and organization change. *Research on Social Work Practice, 25*(4), 477-487.
- Bierman, K. L., Coie, J. D., Dodge, K. A., Greenberg, M. T., Lochman, J. E., McMahon, R. J., & Pinderhughes, E. (2002). The implementation of the Fast Track program: An example of a large-scale prevention science efficacy trial. *Journal of Abnormal Child Psychology, 30*(1), 1-17.
- Bloom, H. S., & Weiland, C. (2015). *Quantifying variation in Head Start effects on young children's cognitive and social-emotional skills using data from the National Head Start Impact Study*. New York, NY: MDRC.
- Bryant, D. M., Wesley, P. W., Burchinal, M., Sideris, J., Taylor, K., Fenson, C., & Iruka, I. U. (2009). *The QUINCE-PFI Study: An evaluation of a promising model for child care provider training: Final report*. Chapel Hill, NC: Frank Porter Graham Child Development Institute, University of North Carolina.
- Bumgarner, E., & Brooks-Gunn, J. (2015). The association between early care arrangements, quality, and emergent bilingual Latino American children's math and literacy skills in English. *Early Childhood Research Quarterly, 30*(1), 32-44.
- Burchinal, M., Magnuson, K., Powell, D., & Hong, S. S. (2015). Early childcare and education. *Handbook of Child Psychology and Developmental Science, 4*(6), 1-45.
- Century, J., & Cassata, A. (2016). Implementation research: Finding common ground on what, how, why, where, and who. *Review of Research in Education, 40*(1), 169-215.
- Currie, J., & Thomas, D. (1999). *Early test scores, socioeconomic status and future outcomes* (No. w6943). National Bureau of Economic Research.
- Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science, 4*(50).
- Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: Are implementation effects out of control?. *Clinical Psychology Review, 18*(1), 23-45.
- Domitrovich, C. E., Bradshaw, C. P., Poduska, J. M., Hoagwood, K., Buckley, J. A., Olin, S., . . . & Jalongo, N. S. (2008). Maximizing the implementation quality of evidence-based preventive interventions in schools: A conceptual framework. *Advances in School Mental Health Promotion, 1*(3), 6-28.
- Dunst, C. J., Bruder, M. B., Trivette, C. M., & Hamby, D. W. (2006). Everyday activity settings, natural learning environments, and early intervention practices. *Journal of Policy and Practice in Intellectual Disabilities, 3*(1), 3-10.
- Dunst, C. J., Trivette, C. M., McInerney, M., Holland-Coviello, R., Masiello, T., Helsel, F.K., & Robyak, A. (2008). Measuring training and practice fidelity in capacity-building scaling-up initiatives. *CELLpapers, 3*(1). Retrieved from: [http://www.earlyliteracylearning.org/cellpapers/cellpapers\\_v3\\_n1.pdf](http://www.earlyliteracylearning.org/cellpapers/cellpapers_v3_n1.pdf)
- Durlak, J. A., & DuPre, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology, 41*(3-4), 327-350.
- Dusenbury, L., Brannigan, R., Falco, M., & Hansen, W. B. (2003). A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research, 18*(2), 237-256.
- Fixsen, D. L., & Blase, K. A. (2008). *Drivers framework*. Chapel Hill, NC: The National Implementation Research Network, Frank Porter Graham Child Development Institute, University of North Carolina.

## CHAPTER 8 AN OVERVIEW OF IMPLEMENTATION RESEARCH AND FRAMEWORKS IN EARLY CARE AND EDUCATION RESEARCH

- Fixsen, D., Blase, K., Metz, A., & Van Dyke, M. (2013). Statewide implementation of evidence-based programs. *Exceptional Children, 79*(2), 213-230.
- Fixsen, D. L., Blase, K. A., Naoom, S. F., & Wallace, F. (2009). Core Implementation Components. *Research on Social Work Practice, 19*(5), 531-540.
- Fixsen, D. L., Blase, K. A., Timbers, G. D., & Wolf, M. M. (2001). In search of program implementation: 792 replications of the Teaching-Family Model. In G. A. Bernfeld, D. P. Farrington, & A. W. Leschied (Eds.), *Offender rehabilitation in practice: Implementing and evaluating effective programs* (pp. 149-166). New York: Wiley.
- Fixsen, D., Naoom, S., Blase, K., Friedman, R., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. Tampa: Louis de la Parte Florida Mental Health Institute, National Implementation Research Network, University of South Florida.
- Gormley, W. T., Jr., Gayer, T., Phillips, D., & Dawson, B. (2005). The effects of universal pre-K on cognitive development. *Developmental Psychology, 41*(6), 872-884.
- Gormley, W. T., Jr., Phillips, D., & Gayer, T. (2008). Preschool programs can boost school readiness. *Science, 320*(5884), 1723-1724.
- Halle, T. G., Forry, N., Hair, E., Perper, K., Wandner, L., & Vick, J. (2009). *Disparities in early learning and development: Lessons from the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B)* [Research brief]. Child Trends.
- Halle, T. G., Paulsell, D., Daily, S., Douglass, A., Moodie, S., & Metz, A. (2015). *Implementing parenting interventions in early care and education settings: A guidebook for implementation* (OPRE Report 2015-94). Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.
- Hartmann, A., & Linn, J. F. (2008). *Scaling Up: A framework and lessons For development effectiveness from literature and practice* (Working paper 5). Wolfensohn Center for Development at Brookings.
- Martinez-Beck, I. (2013). Introduction: Where is the new frontier of implementation science in early care and education research and practice?. In T. Halle, A. Metz, & I. Martinez-Beck (Eds.), *Applying Implementation Science in Early Childhood Programs and Systems* (pp. xix-xxx). Baltimore, MD: Brookes Publishing.
- Metz, A., Bartley, L., Ball, H., Wilson, D., Naoom, S., & Redmond, P. (2015). Active implementation frameworks (AIF) for successful service delivery: Catawba County child wellbeing project. *Research on Social Work Practice, 25*(4), 415-422.
- Metz, A., Halle, T. G., Bartley, L., & Blasberg, A. (2013). The key components of successful implementation. In T. Halle, A. Metz, & I. Martinez-Beck (Eds.), *Applying Implementation Science in Early Childhood Programs and Systems* (pp. 21-42). Baltimore, MD: Brookes Publishing.
- Meyers, D. C., Durlak, J. A., & Wandersman, A. (2012). The quality implementation framework: A synthesis of critical steps in the implementation process. *American Journal of Community Psychology, 50*(3-4), 462-480.
- Munter, C., Wilhelm, A. G., Cobb, P., & Cordray, D. S. (2014). Assessing fidelity of implementation of an unprescribed, diagnostic mathematics intervention. *Journal of Research on Educational Effectiveness, 7*(1), 83-113.
- Peters, D. H., Adam, T., Alonge, O., Agyepong, I. A., & Tran, N. (2013). Implementation research: What it is and how to do it. *BMJ, 347*(f6753). <https://www.bmj.com/content/bmj/347/bmj.f6753.full.pdf>
- Phillips, D., Lipsey, M. W., Dodge, K. A., Haskins, R., Bassok, D., Burchinal, M. R., & Weiland, C. (2017). Puzzling it out: The current state of scientific knowledge on pre-kindergarten effects. A consensus statement. In K. Dodge (Ed.), *Issues in Pre-Kindergarten Programs and Policy* (pp. 19-30). Washington, DC: The Brookings Institution.



- Pianta, R. C. (2013). Classroom management and relationships between children and teachers: Implications for research and practice. In C. M. Evertson & C. S. Weinstein (Eds.), *Handbook of Classroom Management: Research, Practice, and Contemporary Issues* (pp. 695-720). Abingdon, UK: Routledge.
- Reardon, S. F., & Portilla, X. A. (2016). Recent trends in income, racial, and ethnic school readiness gaps at kindergarten entry. *AERA Open*, 2(3), 1-18.
- Saldana, L. (2014). The stages of implementation completion for evidence-based practice: protocol for a mixed methods study. *Implementation Science*, 9(43). <https://implementationscience.biomedcentral.com/track/pdf/10.1186/1748-5908-9-43>
- Supplee, L. H., & Metz, A. (2015). Opportunities and challenges in evidence-based social policy. *Social Policy Report*, 28(4), 1-16.
- Vavrus, F., & Bartlett, L. (2006). Comparatively knowing: Making a case for the vertical case study. *Current Issues in Comparative Education*, 8(2), 95-103.
- von Hippel, P. T., Workman, J., & Downey, D. B. (2018). Inequality in reading and math skills forms mainly before kindergarten: A replication, and partial correction, of "Are schools the great equalizer?" *Sociology of Education*, 91(4), 323-357.
- Weiland, C., & Yoshikawa, H. (2013). Impacts of a prekindergarten program on children's mathematics, language, literacy, executive function, and emotional skills. *Child Development*, 84(6), 2112-2130.
- Wilson, S. J., Lipsey, M. W., & Derzon, J. H. (2003). The effects of school-based intervention programs on aggressive behavior: A meta-analysis. *Journal of Consulting and Clinical Psychology*, 71(1), 136-149.
- Yoshikawa, H., Leyva, D., Snow, C. E., Treviño, E., Barata, M., Weiland, C., . . . & Arbour, M. C. (2015). Experimental impacts of a teacher professional development program in Chile on preschool classroom quality and child outcomes. *Developmental Psychology*, 51(3), 309-322.