

Using Administrative Data to Understand Workforce Experiences with the STEP Forward with Data Framework

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Introduction

Early learning workforce members are crucial in supporting child development and the economy, yet this importance is not typically reflected in their compensation, employee benefits, or opportunities for professional growth. Generally, elementary and middle school teachers earn nearly two and a half times more than preschool teachers.¹ Less is known about how workforce members experience early learning and care systems and how these experiences impact their well-being and employment stability.² Early learning leaders need comprehensive information about workforce members' experiences to learn how to best support them and identify solutions to challenges they may face. Information obtained about workforce members' experiences may be inconsistently collected or underutilized. However, opportunities to collect or access information about their experiences are still valuable, as these data can be supplemented with information that is housed within different program or regulatory data systems.

Information related to the experiences of the early learning workforce can be found in administrative data sources and through primary data collection methods such as surveys, interviews, and focus groups. Some early learning systems conduct primary data collection as part of regular program operations, and that information is stored within administrative data systems. For example, workforce registry systems may collect information from workforce members to answer questions about their experiences in an exit survey when they indicate a change in employment. Information about workforce members' interest and intention to continue in the early learning field may be collected in initial and renewal applications for licensure.

Analyzing existing administrative or programmatic data (i.e., data they collect as part of program operations), along with non-programmatic information collected from workforce members, can provide context and insight into workforce members' experiences within early childhood systems. In conjunction with the STEP Forward with Data Framework, this resource can be used by early learning leaders to understand what administrative data are already collected and what, if any, additional information would need to be obtained through primary data collection to better understand the experiences of early learning workforce members.

This resource focuses on questions from the STEP Forward with Data Framework (the Framework) that relate to the early learning workforce. It includes Framework questions that could be answered primarily with administrative data and identifies potential opportunities for primary data collection. An additional companion resource to the Framework, *Using Workforce Member Surveys to STEP Forward with Data*,³ provides further guidance on using primary data collection to answer the Framework's workforce questions.

Defining workforce members

Workforce members are staff who work directly with young children. Examples include:

- Classroom lead and assistant teachers in public school systems
- Center-based and home-based providers
- Head Start or state preschool educators
- Family child care providers
- Support staff or paraprofessionals

The resource first provides an overview of the Framework and introduces the essential questions that specifically focus on the needs and experiences of the early learning workforce. It then presents common data sources that house information on the early learning workforce. Lastly, it outlines suggested metrics associated with each essential question and the suggested administrative data sources that can be used to answer them. A step-by-step example of how to answer the Framework's essential questions about the workforce using administrative data can be found in the Appendix.

STEP Forward with Data Framework

The STEP Forward with Data Framework is a tool that can guide early learning system leaders in examining the experiences of children, families, and workforce members in early learning programs. Although the Framework was initially designed for leaders who administer and oversee publicly available preschool programs, the Framework's components are applicable for the broader early learning system. The experiences of focal populations^a affected by early learning policies and practices are central to the Framework and provide a lens through which early learning leaders can examine their systems.⁴ More information about the focal populations can be found on the Framework's web page.⁵ The Framework is organized around six system steps meant to capture the experiences of families, children, and workforce members as they engage with early learning systems. The Framework's system steps are supply, outreach, enrollment, learning experiences, transitions, and administration. The Framework is composed of 20 essential questions that can help early childhood leaders understand children's, families', and workforce members' experiences within each system step.

Workforce member experiences are addressed within five essential questions across the learning experiences and administration system steps of the Framework (see call out box below). The workforce questions of the Framework addressed in this resource focus on aspects of workforce experiences that include professional development, work environment, engagement, and economic well-being. The following sections describe common sources of early learning workforce data and how they align with data elements needed to answer each workforce question.

Workforce experience questions in the STEP Forward with Data Framework

- Do workforce members receive training in supporting the needs of children from focal populations and families?
- Are workforce members engaged in shared leadership?
- Are there funding mechanisms to support equitable experiences for workforce members?
- Is there system-level guidance for how to support equitable experiences for workforce members?
- Are there mechanisms to support equitable experiences for workforce members from focal populations?

^a Populations of children, families, and workforce members that have been shown through history and research to experience inequities in the preschool system. These populations should be identified by preschool system leaders in partnership with their community.

Common Early Childhood Workforce Data Sources

Early learning leaders can leverage many types of administrative data to learn more about the workforce and answer the Framework’s essential questions listed above. Table 1 below describes administrative data sources that are commonly available to early learning leaders and contain information about the early learning workforce. In some cases, different data sources contain similar or overlapping information (see Figure 1). For example, a workforce member’s education level can be found in workforce registries, child care licensing data systems, QRIS data systems, and credentialing data systems.

Table 1. Description of early childhood workforce data sources

Data Source	Description
Workforce registries	Workforce registries track early learning workforce demographics, education, credentials, employment, career progression, and professional development at the local, regional, or state level. They may also include information on current and past employers. When linked to individual data, program-level details (e.g., organization type, setting, licensing, quality rating, and accreditation) can illuminate workforce experiences and their relationship to program outcomes.
Child care licensing data systems	Child care licensing data systems capture health and safety standards and monitor compliance through inspections. Licensing rules and data vary by state, but systems generally include basic information on provider roles, qualifications, assigned classroom and age group, work experience, and program information such as licensing status, organization type, capacity, and inspection results. When linked with other workforce data, these details help assess the conditions under which early learning professionals work.
Head Start Program Information Report (PIR)	Head Start PIRs collect workforce and program data as required by the Head Start Program Performance Standards, including staff education, salary, race, ethnicity, and languages spoken. Aggregated workforce data are available by program, region, grant, state, or nationally through the Head Start Enterprise System. Individual-level data are only accessible within programs. Program-level data, such as staff turnover, can support analysis when linked with workforce data.
Quality Rating and Improvement Systems (QRIS) data systems	QRIS assess program quality, such as staff qualifications, certifications, classroom environment assessments, and supports like coaching and technical assistance. Linking QRIS data with workforce data can help early learning leaders explore how workforce supports relate to program quality.
Credentialing/licensure data systems	Public school credential systems issue licenses for preschool teachers in public school programs, typically through state education departments or licensure boards. These systems collect data on formal education, teaching experience, and teacher preparation program accreditation, along with basic identifying and renewal information. This information is most relevant when early learning systems include public school programs.
Workforce member surveys or other documentation	As recommended in the Framework, workforce member surveys or other documentation can fill gaps not found in administrative data sources. For example, surveys capture perceptions, experiences, and engagement. Human resource systems can track staff details, benefits, employment dates, and role changes. Early learning policies can document workforce-related policies, like access to paid professional development and benefits. The Framework web page ⁶ has helpful information on development and use of program documentation and primary data collection.

Figure 1. Summary of types of data commonly collected in workforce data systems

	Workforce Registries	Child Care Licensing	Head Start PIR	QRIS	Public School Teacher Credentialing	Other Documentation
Identification (Name, address, ID #, etc.)	●	●	●	●	●	●
Demographics	●	●	●	●	●	
Education	●	●	●	●	●	
Employment	●	●	●	●	●	●
Wages	●		●			●
Benefits	●					●
Training/ Professional Development	●	●		●	●	
Certifications	●	●	●	●	●	●
Credential/Licensure	●	●		●	●	
Assessments				●	●	●

Answering Framework Questions About Workforce Experiences Using Administrative Data Sources

The five essential questions about workforce member experiences in the Framework focus on professional development opportunities, employee compensation and benefits, retention, and involvement in decision-making activities. However, the Framework acknowledges that input from workforce members is also critical to understanding the experiences of children and families in the early learning system across other essential questions.⁷

Table 2 offers an overview of the essential questions focused on workforce members' experiences along with related metrics and suggested data sources needed to answer the questions. Suggested data sources include administrative data (e.g., data from a workforce registry) and other sources of data (e.g., surveys to

workforce members or documents for review),^b but early learning leaders should determine which sources are most feasible depending on what they have available, what is most appropriate, and what is at the necessary data quality level to allow for informative analysis. The appendix of this resource includes a step-by-step example that answers essential question nine, “Do workforce members receive training in supporting the needs of children from focal populations and families?” using some of the suggested data sources from Table 2.

Table 2. Workforce metrics and suggested data sources, by Framework question

Framework Question	Recommended Metric	Suggested Data Sources
Learning Experiences		
9. Do workforce members receive training in supporting the needs of children from focal populations and families?	Percentage of workforce members who receive training in culturally responsive instruction, especially to understand a child’s developmental progress to inform instruction	Workforce member survey Workforce registry
	Percentage of workforce members who receive training on trauma-informed care or responsiveness	Workforce member survey Workforce registry
	Percentage of workforce members who receive training on reducing or eliminating bias in their work	Workforce member survey Workforce registry
Administration		
17. Are families from focal populations and workforce members engaged in shared leadership?	Percentage of workforce members from focal populations who report that they are consulted, involved, collaborate, or are a co-creator in the early learning system	Workforce member survey
18. Are there funding mechanisms to support equitable experiences for children, families, and workforce members?	Percentage of system-level funding that is allocated to equity-focused activities targeted for children, families, and/or workforce members from focal populations	Program documentation
	Percentage of programs that have a funding mechanism for allocating funds to be spent on identified needs for children, families, and workforce members from focal populations	
19. Is there system-level guidance for how to support equitable experiences for children, families, and workforce members?	Percentage of families and workforce members reporting positive relationship quality with one another	Workforce member survey

^b Surveys described in this resource include those that are already being used in the field by early learning leaders, as well as those that could be developed to complement existing data. Companion resources on the use of administrative data, program documentation, and workforce survey development to answer the Framework’s essential questions can be found on the Framework website (<https://www.childtrends.org/publications/using-system-transformation-equitable-preschools-framework>).

Framework Question	Recommended Metric	Suggested Data Sources
20. Are there mechanisms to support equitable experiences for workforce members from focal populations?	Whether the early learning system provides guidance on professional development activities that represent, reflect, and uniquely support workforce members from diverse backgrounds, including those from focal populations	Written system guidance or policies
	Number of professional development opportunities the early learning system offers that are intentionally tailored to workforce members from focal populations to support their unique needs	Workforce member survey Workforce registry Other documentation (i.e., List of professional development opportunities paid for or coordinated by the early learning system or early learning programs)
	Number of career pathway supports the early learning system offers that are intentionally tailored to workforce members from focal populations to support their unique needs	Career pathway program descriptions and eligibility requirements Career support line items in system budget Workforce member survey
	Whether workforce members from focal populations earn wages comparable to the overall population of early learning workforce members	Head Start Program Information Report QRIS system Program administrative data (human resources, etc.) Workforce member survey Workforce registry
	Whether workforce members from focal populations have retention rates comparable to the overall population of early learning workforce members	Head Start Program Information Report Program administrative data (human resources, etc.) Workforce member survey Workforce registry
	Percentage of workforce members from focal populations who receive benefits comparable to those of the overall early learning workforce population	Program administrative data (human resources, etc.) Workforce member survey Workforce registry

Other workforce data resources

In addition to this data collected about individuals, aggregated state-level information on the workforce is available from national organizations.

1. The Center for the Study of Child Care Employment at the University of California, Berkeley produces its Early Childhood Workforce Index⁸ annually. This index includes state-level information on demographics, employment, education, wages, workforce data collection limitations, and policies that impact the early childhood workforce.
2. The National Institute for Early Education Research (NIEER) produces the State of Preschool Yearbook⁹ which provides aggregated information on workforce members in state-funded preschool programs.
3. The National Workforce Registry Alliance (NWRA) partners with local and state early childhood workforce registries to improve the quality of data collected in registry systems by establishing data standards and best practices in workforce data management. Through the Partners in Employment Reporting (PER), NWRA established its core data elements¹⁰ to capture advances in workforce policy and data collection. The data elements cover data on early childhood workforce demographics, career-related data, and data on workforce preparation and qualifications.

Conclusion

Early learning leaders can use available administrative data sources paired with information collected from workforce members to answer essential questions about their experiences within early learning systems as outlined by the STEP Forward with Data Framework. Each early learning system will have a different capacity to answer questions depending on the data sources they can access, the type of data elements collected, and how workforce data are connected to programmatic data. An important first step is to look across data systems and understand what is already being collected and identify any additional data collection needed to have sufficient information on the early learning workforce to address the essential questions and metrics of the STEP Forward with Data Framework. Despite potential challenges in accessing and/or obtaining data, analysis of the early learning workforce experience is critical to making well-informed system improvements to support workforce members, children and families.

Privacy considerations in workforce data analysis

Regardless of which essential question related to workforce experiences early learning system leaders are interested in answering, they should work with experts in the data sources they plan to use to carefully understand and abide by data privacy and security policies and regulations. In some cases, workforce members sign waivers that allow early learning system leaders to access their information for research or evaluation purposes when their data are entered into a database system. If waivers are not in place, leaders should seek authorization to use data from individual workforce members. In any case, early learning system leaders should take steps to ensure that the privacy of workforce members' data is not compromised or shared outside of the analysis team and that all data privacy and security policies are followed.

Additionally, early learning system leaders should work with a team that includes at least one early learning workforce member to ensure that data resulting from this type of analysis is presented in a way that is representative of workforce experiences and includes necessary contextual information but does not promulgate stereotypes.

The National Institute for Standards and Technology¹¹ produces resources specific to data privacy and security that may be helpful to preschool systems as they plan for data collection and analysis. The Administration for Children and Families also published a confidentially toolkit¹² focusing on data sharing and data security within human service programs.

Suggested citation: Hackett, S.E. (2026). Using administrative data to understand workforce experiences with the STEP Forward with Data Framework. DOI: 10.56417/3046e9673y

Appendix: Example of How to Answer the Framework’s Essential Questions About the Workforce

Below is an example of how a Framework question related to the experiences of workforce members can be answered using administrative workforce data. Information about data sources, data elements and ways to calculate the data is provided below.

Essential Question #9: Do workforce members receive training in supporting the needs of children from focal populations and families?

This Framework question has three recommended metrics which pertain to completion of trainings for specific topics (i.e., culturally responsive instruction, trauma-informed care, and bias). Early learning leaders can answer this question using one or more of these metrics or by creating their own metrics (see Table A1). This example walks through how to use workforce registry data to answer this question. Specific examples of questions that can be included in a survey of workforce members can be found in our data source guidance documents.¹³

Table A1. Data sources to answer STEP Forward with Data Framework Essential Question #9

Workforce Data Source	Recommended Metric	Data Elements
Workforce registry	Percentage of workforce members who receive training in culturally responsive instruction, especially to understand a child’s developmental progress to inform instruction	<ul style="list-style-type: none"> • Workforce member identifier • Workforce member name • Ages served • Training completion date • Training identifier • Training name • Training core knowledge content area • Organization providing training
Workforce member survey	Percentage of workforce members who receive training on trauma-informed care or responsiveness	
	Percentage of workforce members who receive training on reducing or eliminating bias in their work	

How to calculate

To answer this metric, early learning leaders need to identify two points of data:

1. The total number of workforce members in the early learning system (the denominator), and
2. The number of workforce members who received the specified training (the numerator).

Step 1. Calculate the total number of workforce members from workforce registry data. Early learning system leaders can use the total number of active individuals in the workforce registry as the denominator.^c First, leaders will want to determine which age range of children that workforce members serve (e.g., infant/toddlers, preschool-aged, school-age). Second, they will want to determine whether they want to include all workforce members who are eligible to serve these age groups or just those who are currently

^c If participation in the workforce registry is voluntary, leaders may need to use the information from a state child care licensing or public-school credentialing database to accurately estimate the total number of workforce members for the denominator.

serving these age groups. Using these two filters, they can identify the total number of workforce members in their system.

Step 2. Calculate the number of workforce members who received the specified training from workforce registry data. Early learning system leaders can use information on training completion from a workforce registry data (example in Table A2).

Table A2. Example workforce registry training data

Workforce Member Identifier/Name	Training Identifier/Name/Content Area	Training Completion Date
Person A	Introduction to Trauma-Informed Care	12/17/2017
		04/03/2020
		06/26/2024
Person A	Applying Trauma-Informed Care Concepts in Early Childhood Settings	8/25/2024
Person B	Eliminating Bias in Classroom Interactions	02/06/2024
Person C	Culturally Responsive Instruction in Early Childhood Settings	07/23/2020
		05/14/2023
Person C	Introduction to Trauma-Informed Care	6/26/2024
Person D	Classroom Management Strategies in Early Childhood Settings	1/15/2024

Table A2 shows each workforce member’s completed trainings for each of the specified topic areas (i.e., trauma-informed care, eliminating bias, and culturally responsive instruction). Early learning leaders can decide if they need to analyze the training data per topic area to answer each metric individually (i.e., two people completed trauma-informed care trainings, one person completed training on eliminating bias) or to determine how many workforce members completed trainings in any of the topic areas. For example, a total of four people completed trainings on culturally responsive instruction, trauma-informed care, or eliminating bias.

Step 3. Calculate the final metric. Divide the numerator by the denominator to calculate the percentage of workforce members who completed the trainings of interest. For example, there might be 120 workforce members who took the trainings related to any of the training topic areas and 2,000 active workforce members, so the percentage of workforce members who completed the trainings of interest is six percent. Early learning leaders can use this metric to track whether these percentages change across years as efforts to increase participation in these training topics are implemented.

Step 4. Disaggregate the measure for the final metric. Following the process in the previous steps, early learning leaders can examine differences in the training completion rates by subgroups of workforce members (e.g., setting type, race/ethnicity, education level). Disaggregation can help leaders identify where there may be gaps in opportunities to participate in these types of trainings.

Next steps: After analyzing information yielded by these metrics, early learning leaders will have a better understanding of the reach and participation of existing training efforts on these particular topics. With this understanding, early learning leaders can set goals or benchmarks for improvement in participation. Although it can be helpful to track participation over time, it will not provide information on interest, engagement, or specific barriers to participation workforce members experience. To obtain this type of information, early learning leaders can look to examples of workforce survey questions which can be found within the STEP Framework’s implementation tools.

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