Career Pathways in Early Care and Education

Career Pathways Design Study

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Executive Summary

The rapid rise of career pathways strategies, including an emphasis on them in the Workforce Innovation and Opportunity Act, creates a need for more evidence on this approach. **The U.S. Department of Labor (DOL), Chief Evaluation Office contracted with Abt Associates to conduct the Career Pathways Design Study**, **to develop evaluation design options** that could address critical gaps in knowledge related to the approach, implementation, and success of career pathways strategies generally, and in early care and education (ECE) specifically.[1] To inform thinking about evaluation design options, Abt produced reports on (1) research and evaluation relevant to career pathways approaches, (2) the implementation of existing and past career pathways initiatives, and (3) the potential for career pathways approaches in early care and education.

This document is the third of these reports for the project—an analysis of the potential for career pathways approaches in the ECE sector. The primary purpose of this report is to inform the evaluation design options. With that in mind, our analysis summarizes current major reports and initiatives relevant to the development of career pathways approaches for the ECE workforce.[2] We define the ECE field as occupations that involve teaching, providing direct care, or program oversight for children from birth through age 5. We use the term *career pathways approaches* to refer to program- or system-level initiatives that offer articulated education and training steps between occupations in an industry sector, combined with support services, to enable individuals to enter and exit at various levels and to advance over time to higher skills, recognized credentials, and better jobs with higher pay.

In order to explore the potential for career pathways approaches, our analysis also focused on the nature of the ECE workforce and the extent to which workers can obtain additional education and training that corresponds to job opportunities with higher wages. We refer to this series of occupational steps that exist in the labor market (regardless of specific programs or initiatives) as *career trajectories*. In other fields commonly targeted for career pathways approaches, such as healthcare, there are labor market career trajectories that provide substantial opportunities for workers with more training to advance to jobs offering family-sustaining wages. Career pathways approaches build on these opportunities (for example, by helping workers become Certified Nursing Assistants, and then to advance to better paying jobs, such as Licensed Practical Nurses/Licensed Vocational Nurses).

Methodology

For this analysis, we reviewed recent research about the ECE workforce released by federal agencies and prominent organizations engaged in ECE research and held group discussions with 23 experts selected in consultation with DOL to supplement what we were learning about ECE career pathways from the

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[1] Healthcare is also emphasized in the WIOA legislation, but because healthcare is more prevalent in the career pathways field it is not the subject of a stand-alone report in this project. Healthcare is more closely examined in the two other reports on research and evaluation relevant to career pathways and the implementation of career pathways initiatives.

[2] While our analysis does summarize relevant literature, we did not conduct an exhaustive or formal literature review (i.e. with critiques of existing studies' designs, methodologies, data sources, etc.). During this project's knowledge development phase, we looked for but did not identify any experimental evaluations of career pathways approaches for which ECE was a primary sector of focus.

literature. These individuals represented federal and state agencies, Head Start and pre-kindergarten systems and programs, community colleges, leaders from national ECE organizations, and researchers. The literature we reviewed included a range of qualitative and quantitative research about the ECE sector as well as relevant policy analysis and recommendations. As with the two other knowledge development reports from this project, we did not include efforts focused solely on high schools or solely on attainment of four-year degrees.

Findings

This summary provides an overview of our findings from research and discussion with experts on (1) the nature of career trajectories within the ECE field and the extent to which ECE career pathways approaches exist currently; (2) barriers to ECE workforce advancement that may inhibit development of career pathways approaches; (3) promising practices intended to promote ECE workforce advancement (these include strategies to better delineate ECE career trajectories in the labor market as well as a few career pathways program- or system-level initiatives); and (4) implications for future research.

Career trajectories in the ECE field. As noted above, part of our analysis included understanding career trajectories in the ECE field and whether there are opportunities for advancement that correspond to higher wages. The experts we spoke to expressed concern that the field does not include many job opportunities with family-sustaining wages, compared to sectors that are more commonly the focus of career pathways approaches. For example, in a child care center, there are often dozens of child care workers, and a single director. In 2014, the BLS estimated that there were 1,260,000 child care workers and 441,000 preschool teachers, supported by 64,000 preschool and child care center directors. Between 2014 and 2024, the demand for each occupation is projected to increase between five and seven percent.[3] Low wage jobs dominate the field even as educational requirements for the ECE workforce increase.

Existing career pathways approaches. Our review of recent research on the ECE workforce found few national or state initiatives aimed at creating comprehensive ECE career pathways approaches that incorporate many of the program- or system-level elements in the career pathways approach definitions described in Section 1. The comprehensive models we did find that are closer to career pathways approaches include the T.E.A.C.H. Early Childhood® Initiative and Registered Apprenticeship programs (see Section 3). This is consistent with the findings of our *Research and Evaluation Synthesis* report for this project where 8 of 48 studies included career pathways approaches in the education sector, and only five of those (10 percent of total studies) specifically said they included ECE occupations (Schwartz, Strawn, and Sarna, 2017). Similarly, our *Career Pathways Implementation Synthesis* report found that of 109 pathways initiatives for which we could determine the target sectors, just 17 included the education sector and of those, just 12 (11 percent of total initiatives) specifically mentioned including ECE occupations (Sarna and Strawn, 2017).

Instead we found promising practices aimed at addressing various barriers to ECE workforce advancement which may represent possible building blocks for development of comprehensive career pathways strategies in the field. Some of these promising practices provide services to individual workers

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[3] See Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Childcare Workers, Preschool Teachers, Preschool and Childcare Center Directors, 2014-2024 data, https://www.bls.gov/ooh/education-training-and-library/home.htm (visited November 3, 2017).

to enable them to obtain more advanced training and credentials in the field (but do not provide the wide range of supports within a structure that enables individuals to enter and exit at various levels found in career pathways approaches). Other promising practices are aimed at clarifying and formalizing the trajectories in the ECE labor market for career progression, such as by creating nationally portable, industry-recognized credentials. It should be noted that many of the promising practices we identify in this report only target some aspects of what is needed to have strong career pathways programs in the field. For example, while many states have published descriptions of educational steps for advancing in the ECE field which they may term career ladders or lattices, an analysis of these revealed that most of these educational steps lacked direct connections to corresponding labor market opportunities for job advancement (Missouri Department of Social Services, n.d.).

Barriers. ECE professionals seeking to advance along a career trajectory face a number of challenges to professional development, obtaining credentials, and career advancement in the field. Based on the expert interviews and reports reviewed, we identified a number of barriers—both barriers that limit the number of ECE job opportunities with higher wages and barriers that make it difficult for workers to obtain additional training and education to take advantage of the higher paying opportunities that do exist. The barriers to higher wages include the limited opportunities in the ECE field for career advancement, the tension between the labor-intensive nature of ECE work coupled with maintaining child care affordability for families, persistent low wages even as educational requirements increase, and lack of compensation parity among professionals within and across funding streams. Barriers to obtaining additional training and education include varying definitions and professional standards for ECE occupations across settings and states, limited financial support for postsecondary education, challenges in the articulation of credit and prior learning, lack of availability and access to high-quality ECE professional development programs, shortage of supports for lower-skilled adults and English language learners, and a scarcity of counselors who understand the ECE field.

Promising Practices. Based on input from experts and review of research findings we highlight a number of innovative practices aimed at addressing barriers to ECE workforce advancement.[4] While most of the practices we highlight are not career pathways approaches, they may nevertheless offer building blocks for the development of such approaches. We identified promising practices in the following areas:

- **Wage supplements and compensation.** States and local programs have implemented compensation initiatives, most of which modestly supplement the current wages of ECE educators. These initiatives take the form of salary supplements for education level and retention within the program, financial rewards tied to a program's Quality Rating Improvement System (QRIS) rating, and education and retention tax credits. Some states, including Oklahoma, Alaska, and New Jersey, have enacted policies to pay public pre-kindergarten teachers on a district K-12 salary scale.

- **Portable credentials.** National organizations, such as the National Association for the Education of Young Children, National Board for Professional Teaching Standards, Council for Exceptional Children's Division for Early Childhood, and Council for Professional Recognition, have created

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[4] These practices have generally not been rigorously evaluated but rather represent efforts the experts believe to be promising based on their understanding of the field.

occupational standards for ECE professionals and offer professional preparation programs that are recognized in multiple states. Recognition of a common set of standards enables professional preparation programs to implement a sequence of credentials that are portable within and across states.

- **Articulation and credit for prior learning.** Articulation agreements and credit for prior learning can reduce unnecessary duplication of coursework, saving students time and money. Statewide articulation agreements in Connecticut, Indiana, New Mexico, and Pennsylvania allow students to transfer ECE credits from two- to four-year postsecondary programs. Colleges, such as the City University of New York, are recognizing the Child Development Associate (CDA) credential and offering credits toward an associate degree in early childhood education and/or child care. States, including New Jersey and Oregon, have also implemented policies to offer college credit for job experience and professional development.

- **Comprehensive career pathways model.** The T.E.A.C.H. Early Childhood® Initiative, operating in 22 states and the District of Columbia, addresses barriers to advancing along the ECE pathway. The program offers ECE professionals scholarships to pursue a certificate or degree, career and academic counseling, increases in compensation upon completion of educational steps in the pathway, a contract between employers and workers to ensure retention for a period of time after training, and credit hours at a participating postsecondary institution.

- **Registered apprenticeship pathways model.** Apprenticeships combine classroom instruction with paid on-the-job training by employers. West Virginia and Vermont are two states that offer credit for completion of an ECE apprenticeship which can be applied toward an associate degree.

- **Postsecondary education accessibility.** Accessible postsecondary education programs seek to accommodate the work and family schedules of ECE professionals. Indiana, North Carolina, and Tennessee are among the states that offer a common course library and numbering system that enables students to take courses at different community college locations if courses are not offered during a specific semester at the student's home college. States and postsecondary institutions are also expanding online instruction. For example, Pennsylvania, Washington, West Virginia, and Wisconsin are addressing accessibility and affordability issues through online ECE coursework.

- **Supportive services.** Providing supportive services can remove barriers for ECE professionals. These services can take the form of financial support for formal education, career and academic advising, and academic support for lower-skilled and/or non-native English speakers.

- **Workplace policies and supports to promote advancement.** Workplace policies that support participation in education can promote ECE worker advancement. A supportive workplace may include policies for paid professional development time, substitutes to fill in while staff attend training, and a culture that encourages further professional learning.

- **Investments in ECE workforce data collection and analysis.** Some states including Oregon, Washington, and North Carolina collect data on the ECE workforce to inform decisions by policymakers and state agencies about the use of public funds to support early childhood education and measure progress toward state goals around education and training.

Implications. Currently, it is not clear that the ECE sector provides the opportunities for worker advancement needed for career pathways approaches to make sense as a strategy to promote career advancement for low-wage providers of early education and child care. Our analysis, based on expert input and our review of the research, points to the need for additional research to understand whether and how the sector can promote opportunities for workers to advance. Though researchers and policymakers have recommended higher skills and competencies for the ECE workforce to improve child outcomes,[5] questions remain about the feasibility of implementing career pathways approaches that address the barriers to educational, career, and economic advancement faced by ECE professionals. Investing in testing career pathways approaches in the ECE sector may be premature until we learn more about the extent to which the structure of the ECE labor market can support such approaches by rewarding skill development with wage gains. In this paper we describe a number of other possible areas for further research:

- Document the implementation and features of existing ECE career pathways approaches.

- Document the outcomes and impacts of existing promising policies and practices.

- Examine the effect of increased education and qualifications on earnings.

- Explore the extent to which there is employer demand for workers with different levels of qualifications and the extent to which ECE employers are involved in defining competencies and credentials workers need to advance to higher paying jobs.

- Investigate the extent to which the goals of improving child care quality and enabling ECE professionals to advance economically are complementary or in tension, including identifying possible strategies that could benefit both children and workers.

This examination of the potential for career pathways in the early care and education sector is one step in the first phase of this project. The other two first phase reports synthesize career pathways research and evaluation, and describe how different career pathways program- and system-level initiatives are defining and implementing career pathways approaches. The areas for further research discussed in these three reports will inform the study's final publication—the career pathways evaluation design options report.

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[5]   See Appendix B: Resources under Science of Early Childhood Development.

1. Introduction

Career pathways approaches to workforce development offer articulated education and training steps between occupations in an industry sector, combined with support services, to enable individuals to enter and exit at various levels and to advance over time to higher skills, recognized credentials, and better jobs with higher pay. Career pathways approaches target jobs in industries of importance to local and regional economies and build strong relationships with employers. [6]

Career pathways approaches evolved as a response to changes in the labor market over the last several decades that caused stagnating wages and high unemployment for individuals with a high school education or less, and which increasingly reward postsecondary credentials (Autor, 2015; Carnevale, Jayasundera, and Gulish, 2016). By emphasizing postsecondary job skills, career pathways approaches seek to deliver bigger and longer lasting results than earlier employment and training strategies—such as low-intensity job search services focused on quick job placement or stand-alone basic education—which research found did not increase employment and earnings over the long run nor help participants escape poverty (Hamilton and Hendra, 2015). Career pathways approaches also seek to build on past research about effective workforce development strategies by bundling together their most promising features.[7]

States and localities across the United States have increasingly adopted career pathways approaches. The rapid rise of career pathways approaches nationally, including an emphasis on them in the Workforce Innovation and Opportunity Act (WIOA), creates a **critical need for sound evidence that shows what works well, why, under what circumstances, and for whom**. The WIOA legislation requires the U.S. Department of Labor (DOL) to "conduct a multistate study to develop, implement, and build upon career advancement models and practices for low-wage healthcare providers or providers of early education and child care" (29 U.S. Code § 3224(b)(4)(I)).

In response, for its Career Pathways Design Study, **DOL contracted with Abt Associates to develop evaluation design options** to meet this requirement and advance the evidence about career pathways approaches. To inform the design options and synthesize what is currently known, DOL asked Abt to produce reports on (1) research and evaluation relevant to career pathways approaches, (2) the implementation of career pathways initiatives, and (3) the potential to expand career pathways approaches in early care and education (ECE).[8]

In this study, we focused on initiatives most likely to target low-wage workers; we did not include initiatives focused solely on high schools or on occupations that generally require more than a bachelor's degree. **This document is the third of the first phase reports—an analysis of the potential for career**

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[6] For a review of how career pathways are defined in practice at the program and system levels, see the *Career Pathways Implementation Synthesis* report from this project (Sarna and Strawn, 2017).

[7] For a comprehensive history of how the career pathways framework evolved, see Office of Career, Technical and Adult Education (2015), http://s3.amazonaws.com/PCRN/docs/Evolution-of-Career-Pathways.pdf (visited February 19, 2017).

[8] The WIOA legislation mentions the healthcare sector in addition to early education and childcare. Because healthcare is more prevalent in the career pathways field it is not the subject of a separate report but is more closely examined in the two other reports on research and evaluation relevant to career pathways approaches and the implementation of career pathways initiatives.

pathways approaches in the ECE sector. Together, these three reports will inform the study's final report—the career pathways evaluation design options report. That final report will examine four groups of research questions and will describe possible research approaches and data sources.

In this report, we describe our findings from research and discussion with experts on (1) the extent to which ECE career pathways approaches exist currently and the nature of career trajectories within the ECE labor market, (2) barriers to ECE workforce advancement that may inhibit development of career pathways approaches, and (3) promising practices intended to promote ECE workforce advancement (these include strategies to better delineate ECE career trajectories in the labor market as well as a few career pathways program- or system-level initiatives). While our analysis does summarize relevant literature, we did not conduct an exhaustive or formal literature review (i.e. with critiques of existing studies' designs, methodologies, data sources, etc.). We conclude with a section on possible research directions to help the fields of workforce development and evaluation, early care and education, and other stakeholders to better understand the potential for career pathways approaches to promote career advancement for low-wage ECE professionals.

1.1 Approach to Identifying Barriers and Promising Features

To inform this report, Abt Associates reviewed current publications about the ECE workforce released by federal agencies and prominent organizations engaged in ECE research (see Appendix A for a bibliography of literature reviewed). The literature we reviewed included a range of descriptive qualitative and quantitative research about the ECE sector as well as relevant policy analysis and recommendations.[9] During this project's knowledge development phase, we looked for but did not identify any experimental evaluations of career pathways approaches for which ECE was a primary sector of focus (Schwartz et al., 2017).

As a supplement to our scan of the current literature, from November 2016 through January 2017, Abt Associates held discussions with 23 experts outside of Abt with experience with ECE workforce development at the local, state, and national levels (see Appendix B for the list of experts). Each discussion took place by phone, lasted approximately 90 minutes, and involved three to four experts. Selected in consultation with DOL, these individuals represented federal and state government agencies, Head Start and pre-kindergarten systems and programs, community colleges, leaders from national ECE organizations, and researchers.

Using WIOA's definition of career pathways[10] as a point of departure, we asked the experts about successes and challenges in implementing ECE career pathways approaches, promising practices in the field, and areas for future research (see Appendix C for the discussion group questions).

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[9] Because there are few existing career pathways approaches we did not focus on evaluations, and included a broader range of literature to inform our analysis of the potential in the field. It was beyond the scope of this project to identify the limitations of the designs and methodologies of the current literature.

[10] The full WIOA definition of career pathway is "a combination of rigorous and high-quality education, training, and other services that—(A) aligns with the skill needs of industries in the economy of the state or regional economy involved; (B) prepares an individual to be successful in any of a full range of secondary or postsecondary education options; (C) includes counseling to support an individual in achieving the individual's education and career goals; (D) includes, as appropriate, education offered concurrently with and in the same context as workforce preparation activities and training for a specific

This paper discusses findings from the research review and the conversations with the experts. It should be noted that a systematic survey of ECE career pathways initiatives was beyond the scope of this project; the promising practices highlighted here are therefore meant to be illustrative and not an exhaustive list.

1.2   Career Pathways in Early Care and Education

Though policymakers and the workforce development field define "career pathways" in a variety of ways, for the purposes of this study, we use the WIOA definition for program-level initiatives and a DOL-developed definition for system-level initiatives (below). We use the term "career pathways approaches" to refer to both program- and system-level initiatives. These key terms, along with others, are defined in more detail below:

- **ECE field**—occupations involving teaching, providing direct care, or program oversight for children from birth through age 5. While there are numerous occupations working with young children, including specialists in areas such as early intervention and special education, in this paper we focus on the occupations that are most numerous and would be relatively accessible to low-wage workers (e.g. occupations that do not typically require more than a bachelor's degree). Exhibit 1 shows the major types of career opportunities available in the ECE field that were the focus of our analysis.

- **Career pathways program**—as detailed in WIOA (footnote 10, p. 9), those providing individualized training and supports that (1) align with the skill demands of the state and local economy; (2) prepare individuals to be successful in a range of secondary and postsecondary education options; (3) include academic and career counseling, as well as non-academic supports; (4) include, as appropriate, concurrent and

Exhibit 1. Career Opportunities within the ECE Field

Providers of home-based services
- o **Potential employers:** family/group child care homes as well as private households.
- o **Recommended education:** Child Development Associate (CDA) credential, associate degree, bachelor's degree
- o **Typical salary range:** $11,500—$35,000

Teachers of young children
- o **Potential employers:** child care centers, private preschool programs, Head Start programs, public pre-kindergarten programs
- o **Recommended education:** Child Development Associate (CDA) credential, associate degree, bachelor's degree
- o **Typical salary range:** $16,430—$49,660

Administrators/Directors of center-based programs
- o **Potential employers:** child care centers, private preschool programs, Head Start programs, public pre-kindergarten programs
- o **Recommended education:** associate degree, bachelor's degree, graduate degree
- o **Typical salary range:** $27,110—$72,220

Source: T.E.A.C.H. Early Childhood® National Center (T.E.A.C.H.) and Child Care Services Association. (2015). Careers in early childhood: A national directory (4th Ed). Chapel Hill, NC: Child Care Services Association.

occupation or occupational cluster; (E) organizes education, training, and other services to meet the particular needs of an individual in a manner that accelerates the educational and career advancement of the individual to the extent practicable; (F) enables an individual to attain a secondary school diploma or its recognized equivalent, and at least one recognized postsecondary credential; and (G) helps an individual enter or advance within a specific occupation or occupational cluster" (29 U.S. Code § 3102 Definitions).

accelerated program designs; and (5) help individuals to enter or advance within a specific occupation or occupational cluster.

- **Career pathways system-level initiative**—those generally addressing the six career pathways systems elements to reduce barriers and create opportunities for individuals to advance within specific fields described by DOL (n.d.) in its *Career Pathways Toolkit*: (1) build cross-agency partnerships and clarify roles, (2) identify industry sectors and engage employers, (3) design education and training programs, (4) identify funding needs and sources, (5) align policies and programs, and (6) measure systems change and performance.

- **Career pathways approaches**—includes both program- and system-level initiatives described above, which offer articulated education and training steps in an industry sector, combined with support services, to enable individuals to enter and exit at various levels and to advance over time to higher skills, recognized credentials, and better jobs.

- **Career trajectories**—occupational steps within a field that correspond to job opportunities with higher wages. Career trajectories exist in the labor market independent of particular program- or system-level career pathway initiatives.

As noted above, the WIOA legislation calls for a study of career advancement models and practices for low-wage healthcare providers or providers of early education and child care. Within the career pathways field, there are many initiatives in the healthcare sector, and they are frequently included in career pathways research (Schwartz et al., 2017). In contrast, less is known about career trajectories followed in the labor market by ECE providers currently or about the potential for, implementation of, or effectiveness of ECE career pathways approaches to affect those trajectories. This report addresses that gap by scanning current knowledge and exploring promising practices that are addressing barriers to ECE workforce advancement and which may provide a basis for development of career pathways approaches.

Our review of principal recent research on the ECE workforce found few national or state initiatives aimed at creating comprehensive ECE career pathways programs or models that incorporate many of the program- or system-level elements in the career pathways definitions described above. The comprehensive models we did find include the T.E.A.C.H. Early Childhood® Initiative and Registered Apprenticeship programs (see Section 3). This is consistent with the findings of our *Research and Evaluation Synthesis* report for this project where 8 of 48 studies included career pathways initiatives in the education sector, and only five of those (10 percent of total studies) specifically said they included ECE occupations (Schwartz et al., 2017). Similarly our *Career Pathways Implementation Synthesis* report found that of 109 career pathways initiatives for which we could determine the target sectors, just 17 included the education sector and of those, just 12 (11 percent of total initiatives) specifically mentioned including ECE occupations (Sarna and Strawn, 2017).[11]

Instead, we found promising practices aimed at addressing various barriers to ECE workforce advancement which could clarify and formalize possible career trajectories in the field, and subsequently form some of the building blocks for creating career pathways approaches. It should be noted that many

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[11] In contrast, healthcare (the other sector noted in the WIOA legislation) was the most commonly targeted sector in both of those syntheses.

of the promising practices we identify in this report only partly address these barriers. For example, while many states have published descriptions of educational steps for advancing in the ECE field, which they may term career ladders or lattices, an analysis of these descriptions revealed that most of the educational steps lacked direct connections to corresponding opportunities for job advancement (Missouri Department of Social Services, n.d.). Moreover, the educational and employment steps for career advancement in the ECE field vary across child care and early education settings (described in more detail in the next section), funding streams, and political jurisdictions, hindering the creation of transparent ECE career trajectories with portable credentials linked to specific occupational steps. Some current initiatives which we describe later, such as *Power to the Profession*, are seeking to harmonize professional qualifications to address this issue.

As described in the next section, ECE is a large and growing sector with fairly low wages. A number of reports have highlighted the importance of a well-educated workforce for providing quality child care, and some important efforts exist regarding professional development and career advancement with that goal in mind. These efforts may create opportunities for ECE professionals to increase their skills and educational attainment, and for some to advance to higher level jobs. It is less clear, however, whether such initiatives can improve wages for those professionals (Whitebook, Phillips, and Howes, 2014) without further action or whether there are sufficient opportunities in the ECE sector for advancement (ELCPI, 2016).

A theory of change proposed for career pathways approaches notes that their primary objective is to "foster completion of training and credentials leading to jobs providing good pay, benefits, and advancement opportunities" (Fein, 2012). Therefore, a discussion of the potential for career pathways approaches in ECE should examine the capacity of the ECE labor market to offer family-sustaining wages that increase as ECE professionals obtain higher-level credentials. It should also consider whether there are available programs to provide the coursework needed for career advancement, and access to financial aid and support services for ECE professionals to obtain higher credentials. Promising practices that seek to address these issues are discussed in Section 3, though a full examination is beyond the scope of this paper.

1.3   Early Care and Education Terminology and Settings

For this report, we use the term *ECE professionals, ECE workers,* or *ECE workforce* to describe individuals working in the ECE field (i.e., occupations that involved teaching, providing direct care, or program oversight for children from birth through age 5). When citing specific data from research, we use the terminology the data source used. When we reference particular ECE settings, we use these definitions[12], which include center- and home-based settings[13]:

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[12]   Settings from T.E.A.C.H. Early Childhood® National Center. (2015). Careers in early childhood education: A national directory.

[13]   Early intervention and special education services are also an important part of the ECE landscape and are provided in the various settings described here. IDEA Part C and Part B, section 619 programs provide early intervention services for infants and toddlers with disabilities ages birth through two and special education and related services for preschool children ages 3 through 5. Services are typically provided in the natural environment, community-based early childhood programs such as child care, Head Start, and public and private preschools. Providers of these services make up a small proportion of the ECE workforce overall so these job opportunities were not a major focus of our analysis.

- **Public pre-kindergarten programs.** Provide education to children ages 3 to 5; may target specific children. Housed in public schools, nonprofit centers, or for-profit private facilities. May receive funding from the local, state, or federal government. Parents pay no fee or a fee adjusted to their income. (Research distinguishes school-sponsored pre-kindergarten programs overseen by a public school district from non-school sponsored programs.)

- **Head Start.** Serves low-income children ages 3 to 5. Housed in center-based and home-based settings. Early Head Start serves infants and toddlers. May be operated by public schools or nonprofit community organizations. In addition to education, programs are required to provide health, nutrition, and family support services, and collaborate with Individuals with Disabilities Education Act (IDEA) programs to ensure that young children with disabilities receive early intervention and early childhood special education services. Parents pay no fees. The federal government funds both Head Start and Early Head Start; grantees must provide a local 20 percent match in cash, in-kind, or through a combination of the two.

- **Child care centers.** Provide education and care to children from birth to age 5. May also provide before- and after-school care, as well as summer care, including for preschool or school-age children. May be operated by nonprofit organizations, for-profit companies, or government agencies. Parents pay fees; some use child care subsidies.

- **Private preschool programs.** Provide education and care to children ages 2 to 5. May be operated in a center or in the community and children can attend full or part-time between two to five days per week. Parents pay fees.

- **Family child care homes.** Provide care in smaller, in-home settings. Often licensed by government agencies. Parents pay fees; some use child care subsidies. These homes also sometimes receive public funds directly from public pre-K and/or Head Start programs, such as the Early Head Start-Child Care Partnerships program.

- **In-home care.** Provide care to the children of a single family in the family's home. Providers may live with the family and may be related to the family. Parents pay fees.

The next section highlights how different funding streams and financial models—more than professional qualifications—drive the differences in wages and investments in professional development and career advancement for the ECE workforce in each setting (Whitebook, McLean, and Austin, 2016). The fragmentation of the ECE field has implications for the development of more standardized career trajectories and corresponding career pathways approaches for ECE professionals.

2. The Early Care and Education Workforce

Policymakers and ECE researchers and practitioners have increasingly focused on workforce quality in recent years in response to research linking caregiver educational attainment and training to quality of care. In 2000, the National Research Council and Institute of Medicine's formative study *From Neurons to Neighborhoods: The Science of Early Childhood Development* called for recognition of the significant impact of stable and quality child care on early childhood development and for adequate compensation for child care workers. A year later, the National Research Council (2001) released *Eager to Learn: Educating Our Preschoolers* linking the professional development of teachers to the quality of early childhood programs, which predicts developmental outcomes for children.

In 2012, the Committee on Early Childhood Care and Education Workforce of the National Academies of Science, Engineering and Medicine convened a workshop to define the ECE workforce, examine workforce characteristics that affect children, and discuss how to build the profession. A summary of the presentation and discussions during the workshop were captured in *The Early Childhood Care and Education Workforce: Challenges and Opportunities: A Workshop Report,* by the Institute of Medicine and National Research Council (2012). More recently, their 2015 report, *Transforming the Workforce for Children Birth through Age 8*, underscored the critical period between birth and kindergarten and the importance of relationships, knowledge, and competencies of child care workers on child development. The study recommended that all lead teachers of children from birth through age 8 hold a bachelor's degree in early childhood education as the necessary knowledge foundation on which to build and improve ECE skills and practice.

2.1 Workforce Demographics and Compensation

The ECE workforce is large and growing. Of the 20 million children under the age of 5,[14] it is estimated that 12 million receive care and education in home- and center-based settings[15], provided by more than two million ECE professionals (Whitebook et al., 2016).[16] The Bureau of Labor Statistics estimates an increase of 600,000 ECE positions (441,300 child care workers and 158,700 preschool teachers) between 2014 and 2024 as a result of workforce turnover and expansion (Limardo, Hill, Stadd, and Zimmer, 2016).

ECE professionals are predominantly women (96 percent) and almost three-quarters are younger than 50 (71 percent); 20 percent are Hispanic, 14 percent are Black, non-Hispanic, and 19 percent are foreign born (Gould, 2015). The ECE workforce is notable in its linguistic diversity. A little over one-fifth of ECE workers speak a language other than English (23 percent); 16 percent speak Spanish. The majority of that diversity comes from immigrant workers (Park, McHugh, Batalova, and Zong, 2015). For example, in Montgomery County, Maryland, the ECE professional community speaks 58 home languages (Calderon et al., 2016).

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[14] See U.S. Census Bureau, Quick Facts, http://www.census.gov/quickfacts/table/PST045216/00 (visited February 19, 2017).

[15] Center-based care includes child care centers, school-based care, and Head Start programs.

[16] The NSECE (2013) estimates an additional 2.7 million unpaid, home-based teachers and caregivers who regularly provide care for young children not their own for at least five hours a week. Unlisted, unpaid providers are not included in the scope of this paper.

Educational attainment of ECE professionals varies by setting and age of children served. Exhibit 2 shows the educational attainment of center- and home-based teachers and caregivers. Center-based teachers and caregivers generally have higher levels of educational attainment than those in home-based settings. And as the age of the children increases, educational attainment of these staff also rises.

Exhibit 2. Educational Attainment of Center- and Home-Based Teachers and Caregivers, 2012

ECE Occupation by Setting	High School or Less	Some College, No Degree	Associate Degree	Bachelor's Degree or Higher
Center-Based Teachers and Caregivers				
Age 0-3 years only	28%	36%	17%	19%
Age 3 through 5 years only	13%	24%	17%	45%
Home-Based Teachers and Caregivers				
Listed home-based providers[a]	34%	34%	16%	15%
Unlisted home-based providers[b]	52%	24%	9%	15%

Due to rounding, rows may not add up to 100.

[a] Listed home-based providers include licensed, regulated, registered, license-exempt, or Early Head Start providers that appear on state and national lists.

[b] Unlisted home-based providers receive payment for care of a child not his/her own but do not appear on state and national lists for licensed, regulated, registered, license-exempt, or Early Head Start providers.

Source: NSECE (2013); Whitebook, et al. (2016)

Despite recognition of the importance of workforce quality to the quality of child care and early education, ECE workforce compensation—salaries and benefits—remains low, especially in child care (Exhibit 3). The Bureau of Labor Statistics reported that in May 2015, across all settings, the median hourly wage was $9.77 for child care workers and $13.74 for preschool teachers, well below the median wage of $17.40 for all occupations.[17] As noted in the prior section, career pathways approaches support workers as they obtain the education and training needed for better paying jobs—the ability of career pathways approaches to improve well-being for workers depends on the existence of better paying job opportunities within the targeted sector. With affordability already an issue for child care settings, it is not clear whether the sector can support higher wages for the majority of workers (Gould and Cooke, 2015).

Exhibit 3. Median Hourly Wages by Occupation, 2015

Child Care, All Settings	Self-Employed Home Care Providers[a]	Preschool Teachers, All Settings	All Occupations	Preschool Teachers in Schools Only	Kindergarten Teachers	Elementary School Teachers
$9.77	$12.44	$13.74	$17.40	$20.62	$24.83	$26.39

[a] The Census Bureau measures wages from unincorporated (93 percent) and incorporated (7 percent) self-employed home-based child care providers. Unincorporated providers, who comprise the majority of self-employed home child care providers, earn an average hourly wage of $12.44; incorporated providers earn $29.65.

Note: Hourly wages were calculated by dividing the annual salary by 40 hours per week, 52 weeks per year.

Source: Whitebook et al. (2016)

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[17] See Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Preschool Teachers, 2014-2024 data, https://www.bls.gov/ooh/education-training-and-library/preschool-teachers.htm (visited February 19, 2017).

ECE professionals who work in school-sponsored settings earn the most, followed by Head Start and public pre-kindergarten workers. Those with more advanced training, such as early care special education (ECSE) teachers, also earn higher than average wages for the field but ECSE positions represent less than one percent of employment in the ECE field across settings, so few entry level workers can hope to advance to those positions.[18] When the median hourly wage data for ECE professionals is disaggregated by educational attainment and funding source, we observe that, generally, individuals with higher credentials earn more than their colleagues who are less credentialed, and the funding source contributes to the wide variation in wages within the field (Exhibit 4). The exception to this is that in school-sponsored settings, earning an associate degree does not seem to make a difference in the median hourly wage; only after obtaining a bachelor's degree do individuals experience an increase in median hourly wage.

Exhibit 4. Median Hourly Wages of Center-Based ECE Professionals by Educational Attainment and Funding Source, 2012

Highest Degree Received	High School or Less	Some College, No Degree	Associate Degree	Bachelor's Degree or Higher
Funding Source				
School-sponsored	$11.80a	$13.80	$13.30	$20.60
Head Start (funded, not school-sponsored)	$10.00	$10.20	$12.20	$14.80
Public pre-kindergarten (funded, not school-sponsored or Head Start funded)	$8.50	$9.40	$9.80	$15.00
All other ECE centers	$8.70	$9.00	$10.70	$13.50

a Interpret data with caution due to small *n* value.
Note: All other ECE includes other center-based care, which accounts for the majority (59 percent) of the center-based ECE workforce.
Source: Whitebook et al. (2016)

Moreover, there exists a significant wage disparity between ECE professionals and other professionals in similar fields, as well as the overall U.S. workforce (Exhibit 5). ECE professionals with a bachelor's degree or higher earn substantially less than similarly educated public K-5 teachers and others in the civilian labor force. For ECE professionals working with children age birth to 3, this gap is especially wide—for example, other women with comparable education in the civilian labor force earn more than twice as much. An exception to the wage disparity is preschool special education teachers; the BLS reports that the 2016 median salary for preschool special education teachers is $52,460. However, as noted above, preschool special education teachers comprise less than one percent of employment in child care and K-12 settings.[19]

Variations in wages within ECE settings and compared with educators in public kindergarten and elementary schools contribute to the high turnover rate among ECE professionals. Within centers that experienced any turnover in 2012, the turnover rate was 25 percent (Whitebook et al., 2014). The National Head Start Association reported that within Head Start and Early Head Start, between 2014 and

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[18]   Bureau of Labor Statistics, https://www.bls.gov/oes/current/oes252051.htm (visited November 3, 2017).

[19]   Ibid.

2015, one-third and one-quarter of teachers, respectively, left reportedly due to salary.[20] Though center-based ECE professionals stay in the field for a decade, on average (NSECE, 2013), high rates of turnover from one setting to another—such as from child care to Head Start or school-sponsored programs—still undermine the quality and continuity of care critical to a child's development during their early years (Whitebook, McLean, and Austin, 2016).

Exhibit 5. Mean Annual Salary of Teachers with a Bachelor's or Higher Degree by Occupation and for the Civilian Labor Force, 2012

All Other ECE Teachers Working with Age 0-3	All Other ECE Teachers Working with Age 3-5	Head Start Teachers	Other Public Pre-K Teachers	School-Sponsored Pre-K Teachers	Kindergarten Teachers	Elementary School Teachers	Civilian Labor Force, Women	Civilian Labor Force, Men
$27,248	$28,912	$33,072	$33,696	$42,848	$53,030	$56,130	$56,174	$88,509

Note: All other ECE teachers includes those working in other center-based care.
Source: Whitebook et al. (2016)

As a result of low wages, 15 percent of ECE professionals live below the poverty line (Gould, 2015), and between 2009 and 2013, some 46 percent of child care workers and 34 percent of preschool and kindergarten teachers belonged to families enrolled in at least one of four public support programs: Federal Earned Income Tax Credit, Medicaid and the Children's Health Insurance Program (CHIP), Supplemental Nutrition Assistance Program, and Temporary Assistance for Needy Families (Whitebook et al., 2016).

Though three-fourths of the center- and home-based ECE workforce reported having some form of health insurance from their employer, spouse/partner's employer, Medicare, Medicaid, or military benefits (NSECE, 2013), one study reported in 2014 that only 15 percent of all ECE professionals received employer-sponsored health insurance coverage, compared with 50 percent of employees in all other occupations (Gould, 2015). Wage supplements and a handful of efforts creating comparable wages between ECE and public school teachers do exist, but these efforts are fairly rare and do not apply to ECE professionals in all settings and at all degree levels.

The generally low wages of ECE professionals, variation in wages by ECE setting, and lack of employer benefits threaten the stability of the workforce and quality of early care and education for children. Such conditions also are a barrier to developing viable career pathways approaches for the ECE field that result in jobs with higher pay for workers. Despite these challenges, however, there have been increasing federal, state, and national efforts to improve ECE workforce quality according to the recommendations set forth by the Institute of Medicine and National Research Council, which we cover in the next section.

2.2   Federal, State, and National Efforts to Increase ECE Workforce Quality

Several federal investments have sought in recent years to improve the quality of ECE by developing a high-quality workforce through increased minimum credentialing requirements and adoption of common professional standards. What is unknown so far is the extent to which efforts to raise ECE quality can drive not just increased educational requirements for the workforce but also increased wages.

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[20]   National Head Start Association, https://www.nhsa.org/files/resources/2015_national_head_start_fact_sheet.pdf (visited February 19, 2017).

The **Federal Head Start Act of 2007** raised the minimum qualifications for teachers in Early Head Start infant-toddler programs and the Head Start preschool program. By 2013, 50 percent of Head Start teachers nationwide were required to hold a minimum of a bachelor's degree with specialization in early childhood education or equivalent with preschool-age teaching experience.[21] **State Early Care and Learning Advisory Councils** were authorized in that Federal Head Start Act. These councils examine postsecondary education efforts and capacity to develop early childhood educators and provide recommendations on state professional development plans for ECE professionals.

In 2011, the U.S. Departments of Education and Health and Human Services launched the **Race to the Top–Early Learning Challenge (RTT-ELC)**, an initiative to support states to create a coherent, high-quality system to serve children from birth to age 5, particularly targeting young children from lower income and disadvantaged populations. Twenty states,[22] funded in three phases, focused on aligning and coordinating programs across agencies to ensure a comprehensive systems approach to early learning and development; defining "high quality" by establishing a common Quality Ratings Improvement System (QRIS) used within the state to provide transparency on program quality; promoting standard outcomes for children; strengthening career pathways for the workforce; and measuring outcomes and progress.[23]

The **Preschool Development Grants**, awarded to 18 states in 2014 and 2015,[24] also required preschool teachers to hold a bachelor's degree in early child education. That same year, the **Child Care and Development Block Grant Act of 2014** required states to develop a progression of professional development as part of their plan for the grant funding. Additionally, the Federal government has funded a variety of federal technical assistance centers to provide high-quality professional development to ECE professionals at the regional, state, and local levels.[25] The **Elementary and Secondary Education Act,** reauthorized in 2015 as the **Every Student Succeeds Act,** also includes opportunities to advance the ECE workforce.[26]

Among the initiatives to document current state credentialing efforts, the **Early Learning Career Pathways Initiative** funded by the U.S. Departments of Education and Health and Human Services conducted an inventory of the credentialing requirements for ECE professionals across the 50 states, the

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[21] U.S. Department of Health and Human Services, https://eclkc.ohs.acf.hhs.gov/archive/policy/im/acf-im-hs-08-12-attachment (visited February 19, 2017).

[22] Phase One (2011): California, Delaware, Maryland, Massachusetts, Minnesota, North Carolina, Ohio, Rhode Island, Washington; Phase Two (2012): Colorado, Illinois, New Mexico, Oregon, Wisconsin; and Phase Three (2013): Georgia, Kentucky, Michigan, New Jersey, Pennsylvania, Vermont.

[23] U.S. Department of Education, https://www.acf.hhs.gov/ecd/early-learning/race-to-the-top (visited February 19, 2017).

[24] The 18 Preschool Development Grant states fall into two categories: 1) Development Grants, awarded to Alabama, Arizona, Hawaii, Montana, and Nevada, and 2) Expansion Grants, awarded to Arkansas, Connecticut, Illinois, Louisiana, Maine, Maryland, Massachusetts, New Jersey, New York, Rhode Island, Tennessee, Vermont, and Virginia.

[25] U.S. Department of Education, https://www.ed.gov/early-learning/federal-technical-assistance (visited February 19, 2017).

[26] The Individuals with Disabilities Education Act (IDEA) is also an important national effort that includes personnel development to ensure that early intervention services be provided by qualified personnel and that personnel are appropriately and adequately prepared and trained to provide special education and related services to children with disabilities. As noted above, the number of job opportunities in the early intervention/special education workforce is relatively small in comparison to the number of jobs in the ECE sector overall, and these jobs generally require higher levels of education. Thus they are not a focus of this report.

District of Columbia, and Puerto Rico. All of the 50 states, the District of Columbia and Puerto Rico require at least one specialized training that result in certificates/licenses for teachers providing instruction to children from birth through grade 12 to include special education. Forty-seven states, the District of Columbia, and Puerto Rico have each established their own core knowledge and competencies for the ECE workforce to increase program quality. Twenty-three states and the District of Columbia require a bachelor's degree for ECE teachers working in state-funded preschool programs and four states require an associate degree; 20 states have minimum requirements for those who work with infants and toddlers that exceed a high school diploma or equivalent credential and a specific infant/toddler credential or certificate (Limardo, Sweeney, and Taylor, 2016). However, no states have qualification systems that meet the recommendation of the Institute of Medicine and National Research Council for equivalent lead teacher qualifications across ECE settings for all children (Whitebook et al., 2016), which specified that all lead educators have at minimum a bachelor's degree. Recently, though, the District of Columbia became the first in the country to set a minimum requirement of an associate degree for child care workers, to be achieved by December 2020 (Chandler, 2017).

Additionally, every state, plus the District of Columbia and Puerto Rico, has planned or implemented a version of a QRIS. As noted earlier, many states also have separate ECE career ladder or lattice initiatives sequencing education and credentials, and many also offer scholarships to defray the expense of postsecondary education (Limardo et al., 2016). Roughly half the states have a comprehensive T.E.A.C.H. Early Childhood® program.[27]

These collective efforts have advanced the educational levels of workers in the ECE field commensurate with the age of the child. For example, Head Start has exceeded its statutory mandate that 50 percent of its teachers nationally have a bachelor's degree. Today, nearly three-quarters (73 percent) of teachers in Head Start programs have met that goal (HHS, 2016); by contrast, in 2003 less than one third (31 percent) of them had a four-year degree (Hart and Schumacher, 2005). Research documenting state efforts to build stronger systems for the ECE workforce include foundation-sponsored efforts such as the Child Care Services Association's 2015 workforce study *Working in Early Care and Education in North Carolina* and The BUILD Initiative's report *Rising to the Challenge: Building Effective Systems for Young Children and Families,* which reports trends and innovations in early childhood education workforce development in various states (Wolfe, 2015).

The National Association for the Education of Young Children (NAEYC) is steering a national effort—*Power to the Profession*—supported by more than 60 ECE leaders to "define the early childhood profession by establishing a unifying framework for career pathways, knowledge and competencies, qualifications, standards, and compensation"; the result will be a unified set of professional guidelines for the ECE workforce.

Though many of the federal grants to improve workforce quality are time-limited investments, little is known so far about the extent to which these efforts to improve workforce quality have helped ECE professionals move to higher paying jobs and are sustainable beyond the grant period. The remainder of this report explores barriers to advancement, promising models and practices for addressing those barriers —including career pathways—and concludes with thoughts on implications for future research.

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[27]   Alabama, Colorado, Delaware, District of Columbia, Florida, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Mexico, North Carolina, Ohio, Rhode Island, South Carolina, Texas, Utah, Vermont, West Virginia, and Wisconsin.

3. Barriers to ECE Workforce Advancement

There are many barriers to workforce advancement within ECE that hold implications for the potential for career pathways approaches to improve the well-being of low paid ECE workers. As noted above, the field does not include many job opportunities with higher wages, compared to sectors that are more commonly the focus of career pathways approaches. However, even when there are opportunities and incentives for advancement, there are a number of factors that make it difficult for workers to obtain additional training and education to take advantage of such opportunities.

3.1 Barriers to Advancement to Higher Wages

Given the structure of the ECE field, it is not clear how much of an opportunity there is to increase the number of better-paying jobs. Maintaining an ECE program is labor-intensive, and labor costs are even higher in classrooms for the youngest children with lower child to teacher ratios (Whitebook, et al., 2016). Therefore, programs often operate with a lean staffing structure. Experts shared that generally the current ECE program management model assumes the director performs the management, training, and supervision roles within a program, and there are few opportunities to scaffold teaching staff into higher level roles. Furthermore, the need to keep child care affordable for families limits the ability of child care settings to pay higher wages, especially since most child care and early education is not subsidized (Gould and Cooke, 2015).

Persistent low wages across ECE settings are a fundamental challenge to professionalization of the field. Without the prospect of family-sustaining wages, there are few incentives for ECE professionals to upgrade their skills, though some are being required to do so regardless of compensation. For example, 23 states and the District of Columbia require a bachelor's degree and 4 states require an associate degree for pre-kindergarten teachers (Limardo et al., 2016). Half of Head Start teachers nationwide must hold at least a bachelor's degree. Moreover, there may be disincentives for some to advance, as nearly half of ECE professionals belong to families receiving public assistance benefits (Whitebook, et al., 2016). For them, increases in wages accompanying increased skills and credentials would need to be greater than the public benefits they would lose as earnings rise, otherwise they risk falling off the "benefits cliff" and being worse off financially than before.

Within ECE, there is also a lack of compensation parity among professionals within and across funding streams. The lack of compensation parity among ECE workers noted earlier in school-sponsored pre-kindergarten, Head Start, public pre-kindergarten, and other center-based ECE programs (shown in Exhibit 4) makes it difficult for ECE program managers to invest in workforce skills while retaining highly qualified workers (Whitebook et al., 2016). Upon attainment of higher level educational credentials (e.g., a bachelor's degree), workers in child care centers often move to Head Start or school-sponsored pre-kindergarten in order to take advantage of the higher wages and benefits provided by those funding streams, or they move into other fields that offer higher wages. Such disparities in compensation contribute to high turnover rates in the ECE field and become a disincentive for child care programs to invest in professional development for their staff.

3.2 Barriers to Obtaining Additional Training and Education

The Early Learning Career Pathways Initiative identified a number of barriers to ECE workforce advancement (ELCPI, 2016). These barriers include high levels of attrition, disparity in educational

attainment requirements across ECE settings and states, inaccessible and/or unaffordable higher education degree programs, lack of available social services and financial supports, insufficient staffing, limited career advancement opportunities, and insufficient supports for ECE workers with limited English proficiency. Our conversations with external experts yielded similar findings.

Below is our synthesis of barriers as identified through research and shared by the experts. Section 4 describes promising approaches for addressing them.

- **Varying definitions and professional standards for ECE occupations along the career trajectory across settings and states.** As discussed earlier, currently, states, organizations, and programs operate under their own guidelines, frameworks, and standards for the early childhood profession, which presents challenges in enacting a comprehensive strategy for workforce development and financing the profession. [28]

- **Limited financial support for postsecondary education.** Reflected in the research and echoed by our experts, there is limited public financing—in the form of scholarships, bonus incentives, or student loan forgiveness—for ECE professionals looking to advance along trajectories to better jobs or to meet rising educational requirements (Whitebook et al., 2016). Generally, the cost of postsecondary education poses a significant barrier. Even obtaining the entry-level Child Development Associate® (CDA) credential can be cost-prohibitive for students who must pay the associated fees themselves, though in some instances, fees may be paid in full or part by employers or a state funding source. [29]

  ECE professionals who are working often attend college as part-time students, reducing their eligibility for some financial aid. The primary means of financing postsecondary education outside of personal funds are Pell grants and student loans. Pell Grants are often insufficient to cover tuition, fees, books, transportation, and in many cases, care for the children of adult students while they study. Loan forgiveness programs are frequently limited to eligible pre-kindergarten teachers located in public K-12 schools.[30] Federal RTT-ELC grant funds have been used to expand funding for scholarships, but are limited to four years and are not renewable. Overall, states provide an insufficient amount of financing to offset the burden of pursuing professional development.

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[28] The National Association for the Education of Young Children (NAEYC) is steering a national effort—*Power to the Profession*—supported by more than 60 ECE leaders to "define the early childhood profession by establishing a unifying framework for career pathways, knowledge and competencies, qualifications, standards, and compensation"; the result will be a unified set of professional guidelines for the ECE workforce.

[29] The Child Development Associate® (CDA) National Credentialing Program is a nationally recognized credential for ECE professionals working with children age birth to 5. It assesses their knowledge, skills, and abilities against the Competency Standards established by the Council for Professional Recognition through an exam, observation, and professional portfolio with resources and competency statements prepared by the candidate. There is a $425 application fee for the CDA credential, and it costs $150 to renew the credential by paper application and $125 online. See http://www.cdacouncil.org.

[30] The Public Service Loan Forgiveness (PLSF) Program is available for most ECE professionals; however, it requires students to make payments on their loans for 10 years before the loan is forgiven, which can be a challenge for ECE professionals who earn low wages.

- **Challenges in the articulation of credit and prior learning.** States have regularly found it difficult to persuade four-year colleges to recognize community college ECE course credits, certificate and degree attainment, and prior learning and experience (Cassidy, 2015; T.E.A.C.H., 2015). Experts shared that articulation agreements—to recognize prior attainment of course credits, certificates and degrees between two-year colleges and four-year colleges, and between CDA credentials and two-year colleges—have been difficult to execute. Some states have passed legislation requiring articulation (e.g., Indiana's Transfer Articulation Pathway[31]) but continue to face resistance from four-year colleges during implementation. Credentials recognized within one state are typically not portable across state lines. Moreover, prior learning in the form of on-the-job professional development and experience are generally not counted toward college credit.

- **Lack of availability and access to high-quality ECE professional development programs.** In addition to the sometimes prohibitive cost, several experts shared that professional development is often unavailable because training is frequently offered during the work day. Further, coursework offerings are limited for ECE professionals interested in the infant/toddler group, those who work in rural settings, and those working with specific populations, such as English language learners. It is also rare for employers to support their employees' credential attainment by providing them paid release time, substitutes, books and fees, or resources to implement what they learned in their classrooms.

- **Shortage of supports for lower-skilled adults and English language learners.** We heard from our experts that ECE workers, many whom are nontraditional students, such as adults with lower basic skills and English language learners, often need additional support from their employer or a college counselor. In order to succeed, they may need to address fears of failure, negative perceptions of formal schooling due to prior experiences, unfamiliarity with postsecondary education processes, and competing demands from work and family. The linguistic diversity of the early childhood workforce necessitates postsecondary education and other professional development providers to create not only coursework but also supportive services in a variety of languages. Even when language is not a barrier, many students still struggle with below college-level literacy or math skills; an increasing number of students entering postsecondary education generally, not only in early childhood, need remedial education to increase their reading, writing and math proficiency to succeed in college.[32] Thus, ECE professionals may benefit from increased academic and career counseling, blended language and occupational instruction or translation services to support non-native English speakers to enter the profession, and basic skills instruction. They may also need help transferring credentials obtained in their home countries to those recognized by the American education system.

- **Scarcity of counselors who understand the ECE field.** Several experts shared that few career and academic counselors understand the various career opportunities in ECE and can provide students and ECE professionals with accurate career planning. Counselors at postsecondary institutions may hesitate to support a choice of early childhood education for various reasons.

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[31]   Indiana's Transfer Articulation Pathway (TSAP) legislation took effect in fall 2015. TSAP requires state universities to accept the first 60 of 120 hours from community colleges toward a bachelor's degree.

[32]   The Nation's Report Card, https://www.nationsreportcard.gov/ (visited February 19, 2017).

They may not understand the breadth of employment opportunities in the field or they may view it as a low-wage career choice.[33]

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[33] The T.E.A.C.H. Early Childhood National Center published *Careers in Early Childhood* in 2015 that outlines various job opportunities for ECE professionals. Many of the higher-paid career options require at least a bachelor's degree and in many cases, a graduate degree and is outside the scope of the paper.

4. Promising Practices for Early Care and Education Workforce Advancement

At this point, there appear to be few existing national- or state-level ECE career pathways initiatives. This is consistent with findings from our other two Career Pathways Design Study knowledge development reports, which found few research studies or initiatives being implemented in the field that included the ECE sector. Moreover, as noted above, there appear to far more limited opportunities for advancement to higher paying jobs in the ECE sector than in other sectors more commonly the focus of career pathways approaches, such as healthcare or manufacturing. Perhaps the central challenge to adoption of ECE career pathways approaches that benefit both children and workers is how to finance the ECE sector to compensate workers at levels that reflect recommended education qualifications and pay a family-sustaining wage.

Our review of the research and our discussions with experts nevertheless did identify a number of ongoing efforts to improve ECE career advancement opportunities—such as standardizing ECE workforce credentials, defining and formalizing ECE career trajectories, aligning professional development activities, offering supports for workers to access more training, and enacting state or local policies to begin addressing compensation parity for early childhood educators. This section highlights promising practices in ECE that are addressing some of the barriers to workforce advancement generally to improve job opportunities for ECE workers, as well as a few more comprehensive models that are closer to career pathways approaches, such as T.E.A.C.H. and the Registered Apprenticeship model. These promising practices may ultimately lay the foundation for development of comprehensive career pathway approaches in the ECE sector.

4.1 Wage Supplements and Compensation

Though some compensation initiatives have produced salary improvements, most involve small increases and others reach few ECE educators. The models below illustrate the leading approaches.

4.1.1 WAGE$ salary supplement linking education and retention

The Child Care WAGE$® initiative[34] provides education-based salary supplements to teachers, directors, and family child care providers working with young children in regulated ECE settings. States finance it through federal Child Care and Development Fund quality set-aside funds, federal RTT-ELC funds, state general and pre-kindergarten funds, local government funds, and foundation grants. Twice a year, the recipient earns a wage supplement based on his or her level of education and retention in the ECE program. Five states have adopted the WAGE$ model.[35] In fiscal year 2016, funding for WAGE$ was $9.1 million, serving 5,355 teachers, directors, and family child care educators, with an average six-month supplement of $891. Some 62 percent of WAGE$ participants were people of color or of Hispanic origin.

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[34] Child Care WAGE$® is a project of the Child Care Services Association, which also runs the T.E.A.C.H. Early Childhood® project. In order to use the WAGE$ model, a state (through a nonprofit organization) must apply and become licensed to administer the project. T.E.A.C.H. runs the application process and provides training, technical assistance, and other support to licensed providers. See http://teachecnationalcenter.org/child-care-wage.

[35] Florida, Iowa, Kansas, New Mexico, and North Carolina.

The average annual turnover rate for WAGE$ recipients was 13 percent,[36] about half that of the field generally (see Section 2.1).

4.1.2 Alignment and connections with other early childhood systems

Every state, including the District of Columbia and Puerto Rico, has planned or implemented a version of a QRIS (Limardo, et al., 2016). The QRIS can be designed to ensure programs meet state requirements for staff qualifications. For example, North Carolina's QRIS–North Carolina Star Rated License–launched in 2000 and updated in 2005 is based on two indicators of quality: (1) staff education and (2) program standards.[37] Programs earn one point for meeting minimum requirements and additional points for meeting higher voluntary standards. These points then transfer to a five-point star rating that is recognized by families selecting an ECE program for their children. The QRIS is typically tied to financial incentives for programs which can result in direct quality bonuses and merit awards for staff recognition and/or professional development (HHS, 2014).

4.1.3 Education and retention tax credits

In 2007, Louisiana enacted a package known as the School Readiness Tax Credits.[38] The program gives child care directors and eligible staff a refundable tax credit for pursuing education and training. The credit is tied to the state's Pathways Child Career Development System which articulates the early childhood career ladder; the amount of the credit varies based on level of education attained. To be eligible for the tax credit, the teacher or director must work at least six months in a licensed center-based early childhood program that is participating in Louisiana's QRIS and must be enrolled in the state's early childhood practitioner registry. This tax credit is indexed against the Consumer Price Index and does not have a salary cap. Nebraska recently enacted legislation modeled on Louisiana's tax credit package and will implement it in 2018.[39]

4.1.4 Public pre-kindergarten compensation parity

Some states have adopted salary guidelines for pre-kindergarten teachers to address the issue of compensation parity. Public pre-kindergarten programs can be offered in a variety of settings (e.g., public schools, nonprofit or for-profit child care centers, or Head Start), and compensation may vary within the state by setting. Oklahoma adopted a district-offered pre-kindergarten program for all children, and its pre-kindergarten teachers are employed by local educational agencies in the state and paid on a district salary scale with benefits. Alaska and New Jersey also pay all pre-kindergarten teachers in school and community-based programs on a district K-12 teacher salary scale. North Carolina and Georgia detail a salary scale that is aligned for pre-kindergarten teachers across all settings, but not necessarily comparable to K-12 teachers (Whitebook et al., 2014).

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[36] T.E.A.C.H. Early Childhood® National Center, http://teachecnationalcenter.org/child-care-wage/results/ (visited November 3, 2017).

[37] North Carolina Health and Human Services, http://ncchildcare.nc.gov/providers/pv_sn2_ov_sr.asp (visited November 3, 2017).

[38] State of Louisiana, http://revenue.louisiana.gov/IndividualIncomeTax/SchoolReadinessTaxCredit (visited November 3, 2017).

[39] Zero to Three, https://www.zerotothree.org/resources/1591-nebraska-creates-new-tax-credits-to-support-high-quality-early-care-and-education (visited November 3, 2017).

4.2   Portable Credentials

Quality and portability of ECE professional preparation programs vary by college and by state. As noted in the prior section, the articulation of prior credits and learning can be a challenge for workers seeking to advance. To make the quality and content of coursework more transparent to ECE professionals and employers, states and colleges can adopt nationally recognized early child development credentials and professional preparation standards. They can also offer credentialing programs that are recognized across sectors and more likely to be portable across states. For example, NAEYC (2010) developed Standards for Initial and Advanced Early Childhood Professional Preparation Programs that have been recognized and adopted by 177 institutions in 34 states.[40] The National Board for Professional Teaching Standards (2012) provides standards for teachers of students ages 3-8.[41] The Council for Exceptional Children's Division for Early Childhood offers a set of personnel standards for professionals working with young children with developmental delays or disabilities.[42] The Council for Professional Recognition developed a nationally recognized CDA credential aligned to its CDA competencies and mapped to the NAEYC standards.[43]

As mentioned earlier, under the *Power to the Profession* initiative, NAEYC is convening ECE leaders to create a unified framework of professional guidelines for the ECE workforce.[44] When two- and four-year degree programs align to national early childhood professional preparation standards, the common standards enable colleges to better understand and implement a sequence of portable credentials to support ECE professionals to advance along a career pathway. The current lack of such a unified framework means substantial variation exists across settings and states as to what career pathways trajectories exist within the ECE labor market; this poses a major barrier to implementing ECE career pathways approaches.

4.3   Articulation and Credit for Prior Learning

Articulation agreements and credit for prior learning can reduce unnecessary duplication of coursework, saving students time and money. Statewide articulations between two- and four-year postsecondary programs exist in states such as Connecticut, Indiana, New Mexico, and Pennsylvania. Colleges and universities are articulating not only two- and four-year postsecondary degrees but also the CDA credential with degree programs, including, as noted earlier, granting credit at community colleges. For example, the City University of New York (CUNY)'s School of Professional Studies has an articulation agreement with three local community colleges—Borough of Manhattan, Hostos, and Kingsborough—

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[40]   NAEYC, http://www.naeyc.org/highered/accreditation#overview (visited February 19, 2017).

[41]   National Board for Professional Teaching Standards, http://www.nbpts.org/wp-content/uploads/EC-GEN.pdf (visited February 19, 2017).

[42]   Council for Exceptional Children, Division for Early Childhood, https://www.deccecpersonnelstandards.org/ (visited November 3, 2017).

[43]   Council for Professional Recognition, http://www.cdacouncil.org/about/cda-credential/cda-and-naeyc (visited February 19, 2017).

[44]   NAEYC, http://www.naeyc.org/profession/overview. The initiative was just convening at the time of this analysis.

through which these schools accept CUNY's CDA credits toward an associate degree in early childhood education and/or child care.[45] ED's Office of Special Education Programs also funded grants enabling four-year colleges to work with community colleges to redesign and enhance their curriculum to include content on working with young children with disabilities. These partnerships resulted in the four-year institutions and community colleges forming articulation agreements to the early childhood special education departments; several grantees developed a blueprint that documented this process.[46]

Another promising area for ECE is credit for prior learning. New Jersey and Oregon, for example are using this model of assessing competencies to award college credit for job experience and professional development. The New Jersey Prior Learning Assessment Network (NJ PLAN) is a consortium of public colleges and universities housed at Thomas Edison State University that offer credit for select college-level subjects, including courses in ECE, through the following prior learning assessment methods: completion of a portfolio, exam, professional and workplace training, and competency-based education.[47] Oregon community colleges award college credit for ECE professionals who hold a CDA and are rated at a Step 7 in their registry; colleges determine the number of credits between 9 and 15 to award students (Wolfe, 2015).[48] This way the expense and time ECE workers invested in past professional development is recognized and does not have to be repeated to fulfill college requirements.

4.4   Comprehensive Pathway Model

The T.E.A.C.H. Early Childhood® Initiative,[49] operating in 22 states and the District of Columbia addresses multiple aspects of a career pathways program. It comprises five components: scholarships (tuition, books, paid release time) for college degrees and certificates; career and academic counselors; a required increase in compensation through a bonus or raise for completing education steps in a pathway; a contract between the employee and the employer/T.E.A.C.H. to remain in the sponsoring program for a certain amount of time after receiving the education; and completion of a certain number of credit hours at a participating postsecondary institution per the contract. Scholarship options vary by state and are available for coursework leading to early childhood associate and bachelor's degrees, teacher licensure, CDA credentials, state credentials, and even master's degrees.

T.E.A.C.H. is financed as a public-private partnership. In fiscal year 2016, some $31.1 million public and private dollars were dedicated to T.E.A.C.H. scholarships awarded to 15,523 students. The primary public funding source is each state's quality set-aside dollars in its Child Care and Development Fund grant from the federal government. Other funders may include the state itself and philanthropic entities. Financing for T.E.A.C.H. has grown in some states, but it has fluctuated with changes in state priorities elsewhere.

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[45]   CUNY School of Professional Studies, https://sps.cuny.edu/academics/certificates/child-development-associate-certificate-certificate (visited February 19, 2017).

[46]   The University of North Carolina, Chapel Hill, http://fpg.unc.edu/resources/blueprint-process-enhancing-early-childhood-preservice-programs-and-courses (visited November 3, 2017).

[47]   See: http://www.njplan.org/(visited November 3, 2017).

[48]   For example, see: https://www.cocc.edu/programs/education/early-childhood-education/cda-early-childhood-education.aspx (visited November 3, 2017).

[49]   T.E.A.C.H. Early Childhood® National Center, http://teachecnationalcenter.org/t-e-a-c-h-early-childhood/ (visited February 19, 2017).

In fiscal year 2016, 46 percent of scholarship recipients identified as people of color or Hispanic origin; 52 percent came from families with no college graduates, and 56 percent had only a high school diploma. These recipients represented the range of early childhood work settings and age groups of children served: 17 percent worked with children in publicly funded pre-kindergarten programs, nine percent in Head Start, 44 percent with children under age 2,[50] and 54 percent with preschoolers who sometimes also worked with infants and toddlers[51] (T.E.A.C.H., 2016).

4.5   Registered Apprenticeship Pathway Model

Apprenticeships, which combine classroom instruction with on-the-job training, offer another comprehensive approach to helping early childhood educators enter and advance along the ECE pathway. Registered Apprenticeship programs[52] must meet national standards for registration with the U.S. Department of Labor or federally-recognized State Apprenticeship Agencies and provide on-the-job learning and job-related technical instruction. On-the-job training is conducted under the direction of one or more employer staff, provides participants with an immediate job and wages, and results in an industry-recognized credential (Limardo et al., 2016). Between 2000 and 2003, DOL awarded three rounds of grants to 31 states and the District of Columbia to establish statewide apprenticeship systems in child care.[53]

West Virginia's Apprenticeship for Child Development Specialist[54] is the longest sustained state model supporting staff in child care, public schools, Head Start, and school-age care programs (National Center on Child Care Professional Development Systems and Workforce Initiatives, 2014). The apprenticeship program is a collaboration of the state's Office of the Bureau of Apprenticeship and Training; Bureau of Vocation, Technical and Adult Education; Department of Education; local vocational schools; and the River Valley Child Development Services. Several community colleges provide credit for the credential toward an associate degree. Vermont has an apprenticeship program for staff employed in licensed or registered child care programs or Agency of Education settings.[55] Its model includes six college courses from the Community College of Vermont and additional training. The training and work experience in the first year may be applied to the CDA credential and an associate degree in early childhood education.

4.6   Postsecondary Education Accessibility

To increase access to postsecondary education, community college and four-year programs will likely find they need to offer flexible scheduling as many ECE professionals work full-time and many also balance family responsibilities. Almost three-fourths (74 percent) of center-based ECE professionals and

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[50]   Personal communication, FY2016 T.E.A.C.H. National Data.

[51]   Personal communication, FY2016 T.E.A.C.H. National Data.

[52]   U.S. Department of Labor, Employment and Training Administration, https://www.doleta.gov/OA/apprenticeship.cfm (visited February 19, 2017).

[53]   U.S. Department of Health and Human Services, https://eclkc.ohs.acf.hhs.gov/hslc/tta-system/pd/fsd/Teaching%20Teams/prodev_pub_00061_061307.html (visited February 19, 2017).

[54]   West Virginia Department of Health and Human Resources, http://www.wvacds.org/ (visited February 19, 2017).

[55]   Vermont Child Care Industry and Careers Council, http://www.vtchildcareindustry.org/ (visited February 19, 2017).

86 percent of listed home-based ECE professionals work full-time (NSECE, 2013). Experts shared that the Indiana, North Carolina, and Tennessee common course libraries give students the opportunity to take courses at different community college locations if the courses are not offered during a specific semester at the student's home college. This is critically important for part-time students, who are often on a different cycle than a college's standard schedule.

In response to the need for flexible delivery of ECE postsecondary education, states and institutions are expanding online instruction. For example, Pennsylvania, Washington, West Virginia, and Wisconsin are addressing accessibility and affordability issues through online coursework. Northampton Community College in Pennsylvania provides an online CDA program.[56] The University of Washington hosts the Early EdU Alliance, which offers 15 online competency-based courses in early childhood education toward a bachelor's degree that can be used by postsecondary education entities to provide an accessible alternative to in-person courses.[57] The West Virginia Department of Education makes e-learning courses, some focused on ECE, available to its universal pre-kindergarten and kindergarten teachers.[58] Wisconsin's Technical College System offers hybrid and online-only degree programs.[59] The U.S. Department of Health and Human Services' Early Educator Central has designed free, low-cost courses, resources, and tools for infant-toddler educators that can lead to continuing education units or college credit.[60]

Having flexibility about where, when, and how ECE professionals take the needed courses may make a difference in degree completion by providing access to postsecondary courses for those who otherwise would not be able to enroll. Research, however, shows that community college students as a whole perform worse in online coursework than face-to-face, and that lower skilled students are especially at risk in these settings (Community College Research Center, 2013). Thus, careful thought needs to be given to how to ensure a good fit between individual ECE professionals and online courses, and how best to support online students' success, including by addressing access to broadband internet service.[61]

4.7   Supportive Services

Providing the necessary supportive services can remove barriers for ECE professionals, who often are lower income and may be non-native English speakers or first-generation college students. Promising models of supportive services can help them successfully consider, enter, and complete postsecondary education to advance along a career pathway.

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[56]   Northampton Community College, https://www.northampton.edu/early-childhood-education/program-options/child-development-associate.htm (visited February 19, 2017).

[57]   Early EdU Alliance, https://www.earlyedualliance.org (visited February 19, 2017).

[58]   West Virginia Department of Education, https://wvde.state.wv.us/elearning (visited February 19, 2017).

[59]   Wisconsin Technical College System, http://www.wistechcolleges.org/explore-careers/program/early-childhood-education (visited February 19, 2017).

[60]   U.S. Department of Health and Human Services, https://earlyeducatorcentral.acf.hhs.gov (visited February 19, 2017).

[61]   "Those who are less educated, lower income, from minority groups, or have limited English proficiency are significantly less likely to have home access to broadband internet service than are other Americans (Rainie, 2017).

4.7.1   Financial support for formal education

To address the sometimes prohibitive costs of postsecondary education, some states offer scholarships specific to early childhood educators. For example, the Massachusetts legislature began funding a scholarship program in 2006 (Massachusetts Department of Early Education and Care and Massachusetts Board of Higher Education, 2008). Maine's Educators for Maine Program offers competitive, merit-based loan forgiveness to students pursuing careers in education or child care; in return, they must work in Maine after graduation.[62] Federal RTT-ELC grant funds have been used to expand the scholarship's reach, though the federal funding is limited to four years. And as noted earlier, 23 states and the District of Columbia participate in the T.E.A.C.H. Early Childhood® Initiative, which provides scholarships to support early childhood educators covering most of the costs of books, tuition, travel, and paid release time.

4.7.2   Career and academic advising

Because state child care licensing rules and the Head Start program both require annual professional development hours, it is important to guide ECE educators to fulfill these requirements in thoughtful ways that further their career progress. Formal career and academic counseling can help ECE professionals to become aware of the various jobs in the field and what education and certifications are required for them. For nontraditional students or current ECE professionals, experts shared that Indiana, North Carolina, and Texas work with their Child Care Resource and Referral agency or NAEYC affiliate to reach the ECE workforce to offer career and academic advising services. T.E.A.C.H. staff are also available to offer ECE career advising. *Careers in Early Childhood* (T.E.A.C.H. and Child Care Services Association, 2015) is a guide for high school and college career counselors helping students interested in an early childhood career.

In addition to T.E.A.C.H., which focuses on current early childhood educators, North Carolina has a new pilot program called North Carolina Works Career Coach Program.[63] The program places a community college employee as a career counselor in high schools to help students find their career path, including but not limited to the ECE field. Career and academic advising can help first-generation college students, prospective students with negative perceptions of schooling, and those unfamiliar with possible ECE career paths to clarify and achieve their career goals.

4.7.3   Supports for non-native English speakers

ECE professionals for whom English is a second language or who completed some or all of their education outside the United States may need additional assistance obtaining ECE credentials. Language access represents an important dimension of postsecondary accessibility, especially given that some states and colleges recruit ECE professionals who reflect the ethnic and linguistic diversity of the local community. For example, to support English language learners, Doña Ana Community College in Las Cruces, New Mexico (2015), designates specific courses for Spanish language cohorts, including for Early Childhood Education courses. An expert shared that at Central New Mexico College in

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[62]   Finance Authority of Maine, http://www.famemaine.com/maine_grants_loans/educators-for-maine-loan-forgiveness (visited February 19, 2017).

[63]   North Carolina Community Colleges, http://www.nccommunitycolleges.edu/student-services/ncworks-career-coach-program (visited February 19, 2017).

Albuquerque, New Mexico, bilingual cohorts of ECE students are provided with a long-term coach who stays with them from orientation to degree.

4.8   Workplace Policies and Supports to Promote Advancement

Opportunities to advance along a pathway depend on workplace policies that support participation in education. A supportive workplace may include policies for paid professional development time, substitutes to fill in while staff attend training, and a culture that encourages further professional learning. At the local program level in an urban community in Alabama, the Jefferson County Committee for Economic Opportunity's Head Start and Early Head Start programs[64] have staff in charge of career development for their ECE professionals. These staff craft professional development plans for the other ECE staff. The program offers CDA classes in-house and partners with the University of Alabama for early childhood coursework towards a bachelor's degree. The program builds the salaries of substitutes and floating staff into its budget and supplements professional development funding with T.E.A.C.H. scholarships.

4.9   Investments in ECE Workforce Data Collection and Analysis

Some states collect data on the ECE workforce to inform decisions by policymakers and state agencies about the use of public funds to support early childhood education and measure progress toward state goals around education and training. For example, Oregon collects demographic data at the county level to align professional development and other supports with the needs of ECE professionals and help the state meets its goal to increase the number of individuals with associate degrees (The Early Childhood Data Collaborative, 2017). And Washington State uses its workforce data system to encourage professional development among Head Start employees and guide them through a career pathway.[65]

North Carolina has been conducting robust ECE workforce studies since 1989 (Child Care Services Association, 2015). The state gathers information at the program level and also on individual directors, teachers, and family child care educators. These studies have allowed the state to measure progress in education, earnings, benefits, working conditions, turnover rates, and general workforce demographics.

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[64]   Jefferson County Committee for Economic Opportunity, http://www.jcceo.org/jcceo_head_start and http://www.jcceo.org/jcceo_early_head_start (visited February 19, 2017).

[65]   The Early Childhood Data Collaborative, http://www.ecedata.org/publications/ecdc-state-spotlight-washington (visited February 19, 2017).

5. Implications for Future Research

It is unclear whether the promising practices discussed in the prior section can overcome the labor market's structural limits on upward mobility in the ECE field and lead to wider implementation of career pathways approaches for the ECE workforce. Therefore, many of the possible directions for future research suggested here are focused on better understanding the current state of the field. The answers to these questions would shed light on the potential for wider adoption of career pathways strategies within the ECE field.

There are several research efforts underway, including the National Academy of Sciences, Engineering, and Medicine's *Financing Early Care and Education with a Highly Qualified Workforce* study[66] that is examining how to fund ECE consistent with the vision set forth in *Transforming the Workforce for Children Birth through Age 8* report (IOM and NRC, 2015). The U.S. Department of Education and the Department of Health and Human Services are undertaking a study to assess the scope of ECE articulation agreements, and the Center for the Study of Child Care Employment is releasing a report on pay parity in 2017.

In addition, foundations are funding workforce research and the development of strategies for advancing ECE professionals, and states and local governments are assessing the feasibility of achieving compensation parity.

5.1 Possible Areas for Future Research

More evidence about the feasibility of ECE career pathways approaches is needed to help guide policymakers, program directors, and educators interested in testing practices that look promising for not only improving ECE quality for children but also for increasing the earnings of the ECE workforce and meeting employer demand for these workers. Questions remain about if and how best to implement career pathways approaches that address the barriers to educational, career, and economic advancement that ECE professionals face.

To develop robust career pathways approaches, it is important to have data on the ECE workforce inclusive of all types of providers and settings, as well as the ability to disaggregate the data to understand how and to what extent ECE workers currently progress along career trajectories, and the extent to which employer demand exists for ECE workers at different skill, credential, and wage levels. The data on the ECE workforce are expanding, but they often are not granular enough for good policy and financing decisions. For example, while many states have published descriptions of educational steps for advancing in the ECE field which they may term career ladders or lattices, an analysis of these revealed that most of these educational steps lacked direct connections to corresponding labor market opportunities for job advancement (Missouri Department of Social Services, n.d.).

This section describes a number of possible areas for future research and calls attention to several critical issues to consider when designing future research efforts. Given the paucity of career pathways

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[66] National Academies of Sciences, Engineering, and Medicine, http://sites.nationalacademies.org/DBASSE/BCYF/Finance_ECE/index.htm (visited February 19, 2017).

approaches that serve ECE professionals across all settings, the field might eventually benefit from lessons learned through a demonstration of and rigorous testing of comprehensive and inclusive ECE career pathways models. Such studies could document how such ECE career pathways models can be implemented and under what conditions, their key programmatic features, and the relative effectiveness of different components for various subgroups. However, investing in testing such programs may be premature until we learn more about the extent to which the structure of the ECE labor market can support career pathways approaches—specifically, whether sufficient demand exists for workers at intermediate and advanced skill levels to enable entry-level workers who do gain higher skills and credentials to find higher paying jobs. Such evidence of demand is a critical pre-condition for expanding investment in developing ECE career pathways programs and evaluating them.

- **Document the implementation and features of existing efforts to strengthen ECE career ladders**. Several states have developed components of career ladders for the ECE workforce as noted in Section 4. A systematic and in-depth review of their ladder design and elements would be useful to others looking to implement similar efforts. This review could include the relationships between the ECE workforce and postsecondary institutions, other professional development providers, and employers, as well as correspondence between pathway education steps and employment and earnings milestones.

- **Document the outcomes and impacts of existing promising policies and practices.** The field has implemented a variety of promising practices, including transfer and articulation agreements, stackable credentials, workplace supports, wage supplements, and apprenticeships. However, there is little data documenting the effects of these policies and practices. Outcomes of interest include credit hours completed, certification and degree attainment, employment and progression in different ECE settings, earnings, and benefits. Studies could pay particular attention to which approaches to ECE workforce development appear to be most effective in which settings (e.g., urban or rural, center- or home-based) and for different segments of the workforce (e.g., low-skilled, English language learners).

- **Examine the effect of increased education and qualifications on earnings.** Little is known about whether ECE workers' earnings rise with increased education and qualifications or how this might vary by degree or certification obtained and by program setting. Research could use longitudinal administrative data to analyze these questions over an extended period of time, with a particular focus on ECE professionals who start with the lowest pay. This could shed light on the extent to which efforts to improve ECE quality by raising educational requirements for ECE workers might also raise compensation.

- **Explore the extent to which there is employer demand for workers with different levels of qualifications and whether ECE employers are involved in defining competencies and credentials workers need to advance to higher paying jobs.** Areas of interest include overall demand at different skill and wage levels, and the extent to which they support ECE professional advancement with specific workforce policies, such as wage increases, tuition reimbursement, paid release time, and coverage by substitutes while workers are in classes. Administrative and other data sources may be useful for understanding how and to what extent ECE workers currently progress along career trajectories, as well as the available opportunities for ECE workers to advance.

- **Investigate the extent to which the goals of improving child care quality and enabling ECE professionals to advance economically are complementary or in tension, including identifying possible strategies that could benefit both children and workers.** Career pathways for ECE professionals that end in employment within the public school system rather than other ECE settings may result in increased earnings for workers. This may undermine the goal, however, of increasing early care and education quality in all settings through a more educated ECE workforce outside of the public school system. While public school system employment is not the only way for ECE workers to move to higher paying jobs, other options employ far fewer ECE workers and so offer much less opportunity for advancement.

5.2   Next Steps

This review of career pathways in the ECE sector is the third paper in the Career Pathways Design Study that will summarize existing knowledge and shape future research. The first two reports synthesized information on career pathways research and evaluation and the implementation of career pathways initiatives, respectively. Together, these three documents will inform the study's final report—the career pathways evaluation design options report. That final report will identify research questions based on gaps and priorities identified in the previous three reports and describe possible design options for answering the research questions.

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Appendix B: List of Experts

Discussion Topic	Expert	Title, Affiliation
Role of Standards in the Development of Early Care and Education Career Pathways: Program Licensure and QRIS	Debi Mathias	Director of QRIS National Learning Network, BUILD Initiative
	Dr. Aisha Ray	Professor Emeritus, Erikson Institute; BUILD consultant
	Leigh Bolick	Former Director of South Carolina Division of Early Care and Education
	Marsha Basloe	Senior Advisor, Office of Early Childhood Development and Education, ACF
Career Pathways in Pre-K Systems and Programs	Jaqueline Jones	Foundation for Child Development
	Libby Doggett	Deputy Assistant Secretary for Policy and Early Learning, Office of Elementary and Secondary Education, ED
	Tammy Proctor	Group Leader for Early Learning, Office of Elementary and Secondary Education, ED
	Steven Hicks	Senior Policy Advisor, Office of Elementary and Secondary Education, ED
Career Pathways in Head Start Systems and Programs	Marquita Davis	Jefferson County Committee for Economic Opportunity (model Head Start program in Alabama)
	Rick Mocker	National Head Start Association
	Sharon Yandian	Early Language Specialist, Office of Head Start, ACF
	Sarah Merrill	Early Language Specialist, Office of Head Start, ACF
Role of Postsecondary Education and Training in ECE Pathways	Marica Cox Mitchell	Deputy Executive Director for Early Learning Systems, National Association for the Education of Young Children
	Mary Clare Munger	Education Department Chair, Amarillo College, Texas
	Lisa Eads	Program Coordinator Early Childhood, Public Service Technologies, Career and College Promise, North Carolina Community Colleges
	Rebecca Carothers	Chair of Early Childhood Education, Ivy Tech Community College, Indiana
Strategies for Supporting Career Advancement of the ECE Workforce	Barb Merrill	Director of T.E.A.C.H. Iowa
	Phyllis Kalifeh	President, Florida Children's Forum, Board Chair of National Workforce Registry Alliance
	Mary Graham	Executive Director, Children's Village
	Pam Roux	Workforce Development Specialist, Lead in development of apprenticeship model for early education in Massachusetts
Research on Career Pathways for ECE Workers	Marcy Whitebook	Center for the Study of Child Care and Employment, University of California-Berkeley
	Sarah Lemoine	Director of Early Childhood Workforce Innovations, Zero to Three
	Laura Dresser	Associate Director, University of Wisconsin/Center on Wisconsin Strategy (COWS)

Appendix C: Discussion Group Questions

Role of Standards in the Development of ECE Pathways: Program Licensure and Quality Rating Improvement System (QRIS)

- What role do you believe standards embedded in either child care licensing or Quality Rating and Improvement Systems can play in promoting and supporting career pathways for the early childhood workforce? What are the major barriers/issues that may impede the use of standards to promote ECE career pathways?

- Which states have done a good job of embedding progressive educational standards in their licensing process and why? What do these standards look like?

- Which states have done a good job of embedding progressive educational standards in their QRIS? What do these standards look like?

- Which states employ licensing standards that promote career and/or wage advancement through better work environments (e.g., salary schedule tied to education progression, paid time off and/or financial assistance for professional development, college education, or classes offered at worksite)? In states with QRIS, what are some promising features of these states' policies and practices?

Career Pathways in Head Start and Pre-K Systems and Programs

- What Head Start programs have you seen that serve as models for building the pipeline and creating/supporting robust career pathways for teachers? What are the most promising features of these examples? What are the major barriers/issues to scaling them up?

- What state-funded pre-k programs have you seen that have been effective at building the pipeline and creating/supporting robust career pathways for teachers? What are the most promising features of these examples? What are the major barriers/issues to scaling them up?

- What career pathways exist for the workforce within the Head Start system? What are their components (e.g., education, support services, financial aid, wage increases, administration of pathways)? How are these career pathways funded?

- What career pathways exist for the workforce within the pre-k systems? Are these based on standards and/or other policies and guidance?

Role of Postsecondary Education and Training in ECE Pathways

We use postsecondary education to refer to education offered by colleges, universities, vocational schools or other educational facilities that provide academic degrees or certificates.

- What barriers do you see within postsecondary education that impede the early childhood workforce from gaining the knowledge and skills they need to advance their careers in the early childhood system?

- What promising practices are postsecondary education systems and institutions using to address these barriers? Are there particular promising state- or local-level community college or four-year college institutions? What are other professional development initiatives and policies that support ECE career pathways? Are there examples of education and training programs partnering with ECE employers to help students find jobs and/or increase their wages at current jobs as a result of gaining more education?

- Which postsecondary education systems have shown promise in creating high quality early childhood postsecondary education programs–associate and bachelor's degree programs–and making those programs readily available to the early childhood workforce?

Strategies for Supporting Career Advancement of the ECE Workforce

- What support services does the early childhood workforce need in order to have real career pathways that provide opportunities for advances in education, compensation, and career mobility?

- What are the biggest barriers to career advancement facing the early childhood teaching workforce? What are the biggest barriers to implementing career pathways for this workforce? To taking them to scale?

- What programs or initiatives across the country or in your states are making a difference for career advancement of the ECE workforce and how are they doing that? What are the most promising features of leading efforts at the national, state, or local levels?

Research on Career Pathways for ECE Workers

- What current research is in progress on the topic of Career Pathways for ECE Workers?

- What are some of the overarching findings in your research? For example, are there promising models around the country at the state or local level that you are aware of that support higher wages for ECE workers with higher levels of education/credentialing? Are there good examples of states that have implemented an apprenticeship model? Are there business partnerships/engagement or sector strategies approaches that have been implemented at the state or local level to help build the career pathway for ECE workers (e.g., to help meet the demand for childcare, employ ECE workers, or support the ECE worker wages or costs)? Do we know to what extent ECE career pathways helps low-income or low-skilled workers find or improve employment and meet local labor market demand?

- Where do you think are there gaps in the research that should be funded?

- What are the promising models for future evaluation and evidence-building?