OMB Clearance Request: Part B—Statistical Methods

Study of Higher Education Articulation Agreements Covering the Early Care and Education Workforce

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Study Overview

Study Purpose

The purpose of this study is to identify elements that states have in place to enable successful articulation as early care and education (ECE) workers progress from an associate's degree to a bachelor's degree and describe states' successes and challenges in implementing the elements. Specifically, the study will use telephone interviews, focus groups, and review of extant documents to examine ECE articulation policies and their implementation in six focal states — California, Florida, Indiana, Massachusetts, New Mexico, and Pennsylvania — that have statewide articulation policies addressing degrees or coursework in early childhood education.

Policy Context

Given the importance of early childhood experiences for building critical foundations for their future success in life (Institute of Medicine and National Research Council of the National Academies 2015; National Scientific Council on the Developing Child 2007), there is growing interest in ensuring that educators who work with young children have the knowledge, skills, and abilities needed to leverage the developmental opportunities possible in the early years. The National Academies of Sciences recently recommended that early childhood educators working with children from birth through age 8 should be required to hold a bachelor's degree and that comprehensive pathways at the individual, institutional, and policy levels are needed to help transition to this requirement (Institute of Medicine and National Research Council of the National Academies 2015).

At this time, however, the education level of the early childhood workforce is quite low compared with the K-12 workforce. Less than half of teachers or child care providers working with preschool-aged children hold a bachelor's degree or above (Bureau of Labor Statistics 2015a; National Survey of Early Care Education 2013). Similarly, less than one in five home-based and infant-toddler caregivers has a bachelor's degree.

One barrier faced by ECE workers in their attempts to advance their education level is a scarcity of articulation agreements to facilitate transfer of credits and coursework between degree programs (Limardo, Sweeney, and Taylor 2016). Early childhood educators who pursue additional education may experience a loss of course credit and a disruption of degree progress as they transfer between two- and four-year colleges and universities (Jenkins and Fink 2015), which can add substantial time and cost to pursuing a bachelor's degree.

As federal and local governments seek to improve the qualifications of early childhood educators and develop more seamless pathways to the baccalaureate, policymakers may wish to strengthen systems of articulation that govern transfer of course credits between public two- and four-year colleges and universities. To inform such efforts, this study is examining a variety of approaches that states have taken to implement ECE articulation and to help students transfer and complete ECE degrees. The study also will discuss successes, challenges, and lessons learned in implementation of those policies.

Study Design

The study will examine ECE articulation policies and their implementation in six focal states — California, Florida, Indiana, Massachusetts, New Mexico, and Pennsylvania — and will address three study questions:

1. What policies have focal states adopted to enable successful ECE articulation?
2. What ECE policies and practices— including aspects of policy, practice, and state and institutional context — support a framework for successful statewide articulation of ECE coursework?

3. In focal states, what successes and challenges have states and institutions encountered in creating and implementing articulation agreements and supports? How have they addressed these challenges?

This analysis will rely on three types of data sources:

- **Telephone interviews.** One-on-one phone interviews will be conducted with 76 individuals including: faculty and college administrators from states' two-year and four-year institutions of higher education; state higher education administrators; representatives from higher education governing bodies and ECE licensure bodies; and other individuals who are knowledgeable about development, implementation, and monitoring of ECE articulation policies and the ECE workforce.

- **Focus groups.** Virtual focus groups will be held in each of the six states, including student focus groups and focus groups of institutional support staff.

- **Review of extant documents.** These documents will include articulation policies, legislation, and governing body meeting notes.

Elements of Successful Articulation

To provide a framework for examining articulation policies and practices in the six focal states, the study convened a Technical Working Group (TWG) comprised of 12 technical experts who were responsible for defining elements of successful statewide articulation for higher education programs in early childhood education. Experts were chosen based on their experience with articulation policies and represented a variety of stakeholders, including two-year college faculty, four-year college faculty, policy representatives, higher education administrators, and early childhood representatives. The group met on April 3, 2017 at the Department headquarters in Washington, D.C., for a full-day meeting.

Based on input from the TWG, the study team created a framework for successful ECE articulation, including four core elements: 1) governance, 2) academic policy, 3) articulation agreements provisions, 4) articulation and transfer supports—each with between two to four sub-elements that describe practices and considerations from the field. Additionally, the TWG noted that it was important for states to consider their own policy contexts and the need for evaluation.

Exhibit 1. Elements of Successful Statewide Articulation and Statewide Considerations Identified by Technical Working Group

Governance	A governance structure that develops and then actively maintains articulation; components of governance include oversight, administration, and stakeholder involvement and coordination.
Academic policy	Consideration of a variety of academic policy and practice issues in both 2-year and 4-year institutions; components of academic policy include degree pathways, teacher licensure, faculty and curricular alignment, and accreditation.
Articulation agreement provisions	Specific provisions that facilitate credit transfer within articulation agreements; such provisions address the portability of credits, data sharing, and other issues.
Articulation and transfer supports	Providing students with transparent information, accessible resources and supports, and considers the costs of degree attainment.
State considerations	State policy contexts can influence the success of articulation efforts, and states' investment in gathering data to evaluate the effectiveness of articulation can support refinement of articulation systems.

The section below further describes each of these elements.

Governance

Oversight and Administration

- *Types of administrative bodies*. Higher education governance structures at the state-level have an important influence on articulation, and the type of administrative body determines its ability to establish and enforce articulation policy. Examples of administrative bodies overseeing articulation include coordinating boards, governing boards, and higher education agencies.

- *Monitoring implementation*. Administrative bodies may monitor whether institutions of higher education are implementing articulation policies as intended.

- *Updating policies*. Administrative bodies may update articulation policies and processes regularly in response to changes in legislation and higher education policy.

- *Enforcement and appeals process*. Administrative bodies may oversee the appeals process for students who claim that the terms of the articulation agreement have been violated or who would like to appeal decisions about credit transfer at receiving institutions.

- *Funding for administration*. Dedicated, ongoing funding supports the work of the administrative body. This funding may cover the cost of staff support and pay members for the expense involved in attending committee meetings.

Stakeholder Involvement and Coordination

- *Involvement of multiple sectors*. Articulation policies are strengthened when stakeholders from a variety of sectors are involved in their development.

- *Stakeholder types*. Stakeholders for ECE articulation include internal stakeholders, such as higher education administrators, faculty, and students, and external stakeholders, such as ECE employers, ECE teachers, teacher licensing agencies, nonprofit organizations, and state government and policy representatives.

- *Role of faculty*. As content area experts, two- and four-year faculty can play an especially important role in the development of articulation agreements.

Academic Policy

Degree Pathways

- *Multiple degree pathways*. Students may follow a variety of degree pathways to a career in ECE. Articulation policies should be inclusive of these multiple pathways.

- *Types of associate's degrees*. Articulation policies may acknowledge these pathways by including various types of associates' degrees, such as associate of arts, associate of science, associate of applied science, and associate of arts in teaching. Additionally, some degrees may focus on training preschool teachers, while other degrees focus on training elementary school teachers.

- *Stackable credentials*. Stackable credentials can streamline the path to a degree. Some students begin with a certificate and then choose to pursue a degree. When courses associated with certificates are embedded in degree programs, students who choose to enroll for the degree are given full credit within the same institution.

- *Dual enrollment programs*. Articulation policies that allow credits earned in dual-enrollment programs (i.e., college credit earned while in high school) to count toward a degree can benefit transfer students. For example, high schools may form partnerships with community colleges that allow students to acquire a CDA credential during high school and transfer the credits into a two-year program.

Teacher Licensure

- _Degrees that lead to licensure_. States and institutions should be transparent with students about which degrees lead to licensure and which do not, while taking into account that some ECE teaching positions do not require licensure.

- _Multiple licensure options_. In some states, there are multiple licensure options for an ECE career. Two- and four-year institutions should work together to ensure they are consistently applying standards for licensure in their courses.

- _Competing demands_. Two-year colleges may have competing demands, with some students pursing ECE-related training, certificates, or associate degrees without teacher licensure and others earning credits with the hope of transferring into a four-year college in order to complete a bachelor's degree and additional certifications required for teaching. To the extent that the requirements of two-year ECE-related programs and bachelor's degree programs are not aligned, it may be difficult for two-year colleges to offer accessible and transparent pathways that serve the needs of all students. Misalignment could in turn also present challenges for allowing students to transfer credits from four-year to two-year institutions through reverse transfer.

Faculty and Curricular Alignment

- _Curriculum and learning standards_. Alignment of curriculum and learning standards between two- and four-year institutions helps facilitate seamless student transfer among institutions of higher education.

- _Course competencies and numbering_. Common course competencies and common course numbering are helpful for articulation between two- and four-year institutions.

- _General education common core_. The existence of a general education common core curriculum supports articulation.

- _Faculty qualifications_. When two-year faculty have similar academic qualifications as four-year faculty, the faculties may be more willing to enter into articulation agreements, due to a perception that courses at two-year institutions are equivalent to courses at four-year institutions.

Accreditation

- _A symbol of quality_. Accreditation of ECE programs may reduce barriers to articulation by validating the quality and rigor of ECE associate's degree programs.

- _Encouragement for articulation_. Institutional and programmatic accreditors, such as the National Association for the Education of Young Children, can encourage institutions to develop student-focused articulation policies.

- _Mandate from licensing_. When state educator licensing provisions require preparation programs at and beyond the baccalaureate level to receive both institutional and programmatic accreditation, those requirements may serve to reinforce specific articulation practices.

Articulation Agreement Provisions

Portability of Credits

- _Block transfer_. Transfer student degree progress is facilitated when articulation agreements specify that all lower division coursework, including general education and early childhood credits, will transfer into the four-year degree program as a block.

- _Course-by-course transfer_. Articulation agreements that require course-by-course review of prior coursework based on course equivalencies or allow only a limited number of credits to transfer from the sending institution can hinder student degree progress.

- *Transfer without an associate's degree*. Articulation agreements should allow students who choose to transfer from a two-year program to a four-year program before earning their associate's degree to earn transfer credit for their prior coursework.
- *Reverse transfer*. Reverse transfer provisions ensure that students who transfer from a two-year to a four-year institution, and then back into a two-year institution do not lose credit. Reverse transfer provisions could include the opportunity for two-year to four-year transfer students to complete an associate or certificate degree, even if they do not complete their bachelor's degree.

Data Sharing

- *Electronic record sharing*. In order to streamline articulation, transcripts should be shared electronically and systematically between two- and four-year institutions.
- *Oversight of data sharing*. The administrative body that oversees articulation also may oversee a shared data system between two-year and four-year institutions.

Other Provisions

- *Guaranteed admission*. Guaranteed admission into ECE programs at four-year institutions for students who complete associate's degrees can be a feature of successful articulation agreements.
- *Private institutions*. Inclusion of private institutions of higher education in articulation agreements increases the number of students who benefit from articulation agreements.

Articulation and Transfer Supports

Transparency and Accessibility

- *Transparent information*. Students require transparent, accessible information regarding transfer requirements, career pathways, and licensure options.
- *Web-based transfer resources*. Transfer guides and other Web-based resources such as online course catalogs and degree progress tools are important supports for students, advisors, and faculty.
- *Accommodations for non-traditional students*. Because many ECE students may also be working, institutions should consider the convenience and accessibility of courses and academic and student services.

Student Supports

- *Transfer advising services*. Transfer advising service centers at both sending and receiving institutions can promote student success and retention.
- *Well-informed and resourced advisors*. Before and during the articulation process, students can benefit from the support of well-informed faculty advisors and guidance counselors with reasonable caseloads. Such advisors can help students them determine which degree pathways are best aligned to their personal and professional goals.

Completion and Affordability

- *Importance of affordability*. Statewide articulation policy should consider the affordability of earning a bachelor's degree.
- *Cost of degree versus earning potential*. The affordability of a bachelor's degree is particularly important for students in ECE programs because of the low wages that early childhood teachers earn.
- *Dimensions of affordability*. Affordability is determined by the total cost of earning a credential, including the cost of attendance, the cost of student debt, and opportunity cost of foregoing work while acquiring a degree.

- *Stackable credentials*. Stackable credentials may be an opportunity to help students increase their salaries as they acquire credentials.
- *Dual-credit programs*. Affordability in articulation agreements may be addressed by providing pathways for high school students to enter into dual-credit college courses as soon as possible to save money.

State Considerations

Policy Context

- *Policy mandate*. Successful statewide articulation is enabled by policies that mandate or facilitate articulation.
- *Compulsory articulation agreements*. State legislative or executive branch action can compel institutions of higher education to create articulation agreements when they might not have otherwise.
- *Licensing policy*. State policies for teacher licensing can make the pathways into an ECE career more or less flexible.

Economic Context

- *Availability of funding*. The economic context and availability of funding within a state influences articulation policy.
- *Workforce needs*. Articulation policy should take into account the state's ECE workforce needs and the demographics of the existing teaching workforce.

Evaluation and Evidence

- *Purpose*. Evaluation of articulation efforts may serve multiple purposes: (1) monitoring transfer student outcomes, (2) informing policy-makers about adjustments needed to articulation systems, (3) gathering data to make the case that articulation is needed.
- *Data*. Statewide longitudinal data systems that contain information about student transfer and course-taking behavior, along with information about credit transfer, help support evaluation of articulation policy.
- *Transparency*. The results of evaluations should be made publicly available.

The goal of this study is to highlight successful ECE articulation practices to inform the work of state and higher education leaders who are developing, revising, or implementing ECE articulation policies. The final report will highlight promising practices and the specific approaches, such as the sub-elements identified by the TWG, states have taken to successfully implement articulation policy, drawing on the experiences of stakeholders, including state higher education administrators and senior administrators, faculty, staff, and students in both two-year and four-year institutions of higher education in six focal states.

Supporting Statement for Paperwork Reduction Act Submission

Description of Statistical Methods

1. Sampling Design

The study is designed to collect data from six focal states that have a statewide articulation policy with specific provisions for early childhood, such as specific guidance on ECE degree pathways or the transfer and articulation of ECE coursework and credentials among dual-enrollment programs, public community colleges, and/or public four-year colleges and universities.

Through extant document review, the study team identified an initial list of 11 states that fit this criterion and then compiled data on a variety of observable state characteristics that may be associated with implementation, including type of articulation policy, higher education context, ECE program context, and geographic region. Exhibit 2 displays the full list of state selection criteria and the data source for each.

Exhibit 2. State selection criteria

Criteria	Definitions	Data sources
Articulation policy	What type of statewide general articulation policy does the state have in place? What provisions are included for ECE?	Extant document review; Anderson 2016
Higher education context	What is the higher education governance structure in the state (consolidated governing board, coordinating boards, or higher education service agency)?	McGuinness 2013
	How many public systems of higher education does the state have?	Extant data review
	Are there historically black colleges or universities (HBCUs) or minority-serving institutions (MSIs) in the state? How many of these institutions are public?	HBCUPages.com; U.S. Department of Education 2007
	How many baccalaureate and subbaccalaureate ECE degrees does the state issue per year?	Integrated Postsecondary Education (IPEDS) data system
Early childhood program context	How many children are enrolled in early learning services and programs in the states (early intervention, Head Start, and prekindergarten)?	Barnett et al. 2017
	What percentage of four-year-olds is served by state-funded prekindergarten?	Barnett and Kasmin 2017
	Are early childhood teachers required to hold a bachelor's degree?	Barnett et al. 2017
	Does the state require pay parity for preschool teachers?	Barnett and Kasmin 2017
Geographic region	Northeast, Midwest, South, or West	U.S. Census

In conjunction with PPSS and other stakeholders from the U.S. Department of Education and the U.S. Department of Health and Human Services, the study team selected a sample of six focal states that represents:

- A variety of articulation policy approaches.

- Each type of higher education governance structure.
- States with public higher education systems of varying size and complexity.
- States with HBCUs and MSIs.
- States in which significant numbers of ECE certificates and associate's and bachelor's degrees are granted.

The selection process also considered the ECE program context in each state, although less emphasis was placed on these criteria. Finally, the sample was drawn to include representation from each of four geographic regions.

The final purposive sample includes California, Florida, Indiana, Massachusetts, New Mexico, and Pennsylvania. This sample is intended to yield informative and varied data on a range of approaches to ECE articulation, including different state policy approaches and implementation practices. Exhibits 3, 4, and 5 below provide details on the characteristics of the six selected states on each of the state selection criteria, as well as the characteristics of the five states that were not selected.

Exhibit 3. State selection criteria: Articulation policy and geographic region

State	Types of ECE provisions	Common course numbering	General education (Common Core)	Statewide guaranteed transfer	Region
Selected States					
California	2+2, associate's to bachelor's	No	Yes	Yes	West
Florida	CDA (9 credits) to associate's	Yes	Yes	Yes	South
Indiana	Block transfer (all 67–69 credits earned)	Yes	Yes	No	Midwest
Massachusetts	Guaranteed Block transfer; "ECE Compact Pathway"	No	Yes	Yes	Northeast
New Mexico	64 hours of transferrable modules; ~35 hours of general education plus ECE discipline module	Yes	Yes	Yes	West
Pennsylvania	Junior standing; 30 ECE credits and 30 general education credits	No	Yes	Yes	Northeast
Other States					
Connecticut	18 credits, associate's to bachelor's	No	Yes	No	Northeast
Iowa	CTE coursework to associate's; 16 credits of CTE work can transfer into bachelor's	No	No	Yes	Midwest
Kansas	Course by course	Yes	Yes	Yes	Midwest
Oklahoma	Course by course, through course equivalency project (includes ECE as discipline)	No	Yes	Yes	Midwest
South Carolina	"Transfer blocks": associate's to bachelor's	No	Yes	No	South

Exhibit 4. State selection criteria: Higher education context

State	Governance structure	Number of higher education systems	Number of HBCUs	Number of MSIs	Certificate	AA/AS	BA/BS	Total degrees
Selected States								
California	Consolidated governing board	3	0	53	45	605	3,433	4,083
Florida	Consolidated governing board	2	4	32	123	386	497	1,006
Indiana	Coordinating board/agency	3	0	2	257	284	101	642
Massachusetts	Coordinating board/agency	1	0	5	138	422	479	1,039
New Mexico	Cabinet-level department, led by secretary of higher education	1	0	13	41	174	76	291
Pennsylvania	Higher education service agency	2	2	9	44	411	1,584	2,039

Other States

Connecticut	Consolidated governing board	1	0	1	100	167	41	308
Iowa	Consolidated governing board	1	0	0	2	322	332	656
Kansas	Consolidated governing board	1	0	3	11	8	18	37
Oklahoma	Coordinating board/agency	1	0	4	26	61	192	279
South Carolina	Coordinating board/agency	1	8	11	0	14	425	439

Exhibit 5. State selection criteria: Early childhood program context

State	Prekindergarten enrollment	Early childhood special education	Federal Head Start	State Head Start	Total enrollment	Percentage of 4-year-olds served in prekindergarten	BA requirements	Pay parity
Selected States								
California	223,921	46,605	79,814	0	350,340	18%	Yes	No
Florida	169,025	21,648	32,917	0	223,590	76%	No	No
Indiana	26,133	3,377	5,850	0	35,360	64%	Yes	Yes
Massachusetts	13,731	10,052	10,220	219	34,222	8%	No	No
New Mexico	9,757	3,713	7,300	0	20,770	33%	No	Yes
Pennsylvania	26,803	21,441	25,059	5,187	78,490	12%	Yes	No
Other States								
Connecticut	14,940	5,466	4,888	303	25,597	24%	Yes	No
Iowa	1,585	10,469	12,420	0	24,474	2%	No	No
Kansas	7,903	6,625	5,500	0	20,028	20%	Yes	No
Oklahoma	41,241	4,438	14,353	0	60,032	74%	Yes	Yes
South Carolina	23,536	4,901	10,651	0	39,088	40%	Yes	No

2. Procedures for Data Collection

The study will include 76 semi-structured telephone interviews and 26 focus groups with a total of 86 respondents in a purposive sample of six states. Respondents will be identified through extant data review as well as by recommendations from other identified respondents. This section describes the procedures the study team used to compile information from extant documents and that will be used to conduct the interviews and focus groups.

Procedures for Extant Data Collection

The study team conducted an extant document review to assess the landscape of state-level articulation policies in all 50 states and the District of Columbia. The goal of the review was to determine which states have statewide articulation policies and to document the features of those policies.

Following the extant data search guide, the study team reviewed existing databases and reports of states' ECE and general articulation policies through reputable organizations such as the Education Commission of the States, National Association for the Education of Young Children (NAEYC), and the T.E.A.C.H. Early Childhood National Center. Second, the study team conducted a comprehensive Web search using specific key terms, including the state name plus "higher education," "statewide articulation," "early childhood education," "degree," and "credit transfer policy." Next, the resulting documents — which included statutes, legislation, executive orders, articulation or transfer policy between state higher education systems, higher education ECE initiative descriptions, statewide transfer guides, and other resources for students or advisors — were saved to a secure network folder. The study team adopted a formal file-naming convention to organize saved

documents by state and assembled an American Psychological Association-style bibliography to ensure accurately referenced evidence.

Because the purpose of the pre-TWG review of extant data was to identify states that might have ECE-specific provisions as part of their statewide articulation policies, the team conducted a preliminary scan of each state but reserved more detailed investigation for those with potentially promising ECE practices. After initial data collection and documentation, the lead analyst performed a quality assurance review on more than half of the states, including all those that were flagged as specifying articulation of ECE degrees or coursework in its policies. For this quality assurance review, the analyst conducted an independent Web search to ensure all relevant documents were located. She then reviewed available documents, and verified that they were properly cited and accurately summarized.

Identification of Respondents

In each state, interview respondents will include state representatives, stakeholders from institutions of higher education, and the broader ECE field. Exhibit 6 displays the variety of interview respondent types that will be included, such as administrators, faculty, staff, and students. The complexity of the state's articulation policies, the size of its higher education system, and the availability of appropriate respondents are factors that informed the target number of interviews per state.

Exhibit 6. Respondent types

Category	Respondent Type	Description	Number of Respondents
State	Administrators	State agency administrator or system administrator with responsibility for transfer policy; policy staff for the governor or legislature involved specifically in ECE articulation.	19
	Governing body members	Faculty or administrators from 2-year and 4-year institutions who serve on statewide articulation boards or committees	7
Institutions	Faculty	Faculty from 2-year and 4-year institutions who have responsibility for developing and implementing ECE articulation policy or supporting students on transfer options	20
	Administrators	Senior academic administrators from 2-year and 4-year institutions (in the College of Education or equivalent) who have responsibility for the institution's implementation of ECE articulation policy	20
	Support staff (focus groups)	Staff who support and advise ECE students on transfer; registrar's office staff who process transfer of credits between institutions; financial aid administrators.	60
Additional stakeholders	ECE workforce	Industry representatives; teacher licensing agency representatives	10
	ECE students (focus groups)	ECE students who have transferred or intend to transfer from two-year to four-year institutions	24
TOTAL			0

The study team will identify respondents using extant document review and respondent referrals. As part of the extant document review conducted prior to the TWG meeting, the study team identified an initial set of potential respondents. While waiting for Office of Management and Budget (OMB) approval, the study team conducted an additional round of extant data review to update the list of potential respondents, using publicly available information. Such information included staff lists, biographies, and meeting notes available through websites of state higher education agencies, system offices, coordinating boards, individual institutions of higher education, state teacher licensing agencies, and statewide ECE organizations. Based on this search, the study team compiled a list of potential respondents, by state, that includes full name, job title, institution or agency, telephone, email, and respondent type for each potential respondent.

This initial list includes potential respondents for the majority of state and institution-level slots. Target respondents include state higher education administrators who work directly on articulation policy, e.g. the director of academic policy in a department of higher education, who oversees transfer policy reform. Institution representatives – administrators, faculty, and staff – are prioritized on our list of target respondents, if they have served on statewide governing bodies that oversee articulation or related alignment efforts. For example, some of the selected faculty have worked on the development of a statewide ECE compact and a statewide ECE curriculum alignment project. The objective in targeting these institution respondents is to gather data from individuals who are familiar with institutional policy and practices, *and* statewide articulation policy, to the extent possible. To identify the remaining respondents, the study team will request recommendations from study participants. For example, the study team may ask a state higher education administrator to name a contact from the ECE teacher licensing agency. The study team also will ask points of contact at institutions to identify stakeholders who offer valuable perspectives on two-year to four-year transfer experiences, such as ECE students, registrar's office staff, and financial aid officers.

Recruitment of Respondents

The study team will begin by sending an introductory letter from the Department to the state higher education executive officer and the president of each college that is targeted for data collection. Then the study team will send an email to each individual respondent, inviting him/her to participate in the study. The invitation will reference the notification letter and its recipient, introduce the study, and provide a rationale for participation. Between one and three days after the email has been sent, a member of the study team will call each prospective respondent to confirm receipt of the invitation and schedule the interview. Given that some respondent types are rarely at their desks, the study team will make multiple calls at varying times of day to reach the target respondents. When setting up the interviews, the study team will do its best to accommodate respondents' schedules. Study team members will be prepared to conduct interviews immediately, if the respondent if available and wishes to participate at the time of initial contact.

To recruit students for focus groups, the study team will ask faculty and staff from at least one two-year college and at least one four-year college in each state to distribute informational flyers inviting students with relevant experience to participate in the focus groups. Such students would include those who intend to transfer (at two-year colleges) and those who have successfully transferred (at four-year colleges). The flyer will include a brief description of the study, mention the offer of a $75 gift card for participation, and include a phone number and email address for the member of the study team who will enroll students in the focus group.

Unlike many other PPSS studies, the majority of respondents that are targeted for the present study are not recipients of federal funds, and therefore are not beholden to participate in this study. Given this context, there are three potential challenges the study team may encounter in efforts to complete planned data collection. These challenges and the approach to addressing them is described below:

- First, the state higher education executive officer who receives the initial outreach e-mail may have an objection to the study. If this occurs and the study team is unable to address his/her concerns, the

study team will select an alternate state. Alternate states have been selected for each focal state, as shown in Exhibit 7. The exhibit also describes the rationale for the selection of these alternate states.

- Second, a college president may decline to have his/her institution participate in the data collection. In the event that the study team encounters this challenge, the study team will choose a new institution in which to focus data collection.

- Third, individuals targeted for data collection may not be responsive, available, or willing to participate. In this case, the study team may request that the key contact who was initially informed about the study - the state higher education executive officer or college president - encourage the individual to participate. The study team may also ask the Department of Education to reach out on behalf of the study. If targeted individuals are responsive but express that they do not wish to participate or are not available, the study team may also request suggestions from them for alternate respondents.

Exhibit 7. Alternate selections for focal states

Focal State	Alternate State	Rationale
California	Connecticut, Iowa, or Oklahoma	California is a large state with established articulation pathways. All other states with similarly robust articulation policies are already included in the list of focal states. Connecticut, Iowa, and Oklahoma are alternates that offer varied state contexts and approaches to ECE articulation. One of these states may be selected to complement the other focal states, if California does not participate.
Florida	South Carolina	South Carolina would ensure representation from the south. There are also a number of HBCUs and MSIs in South Carolina, as there are in Florida. South Carolina also has bachelor's degree requirements for early childhood educators.
Indiana	Iowa (*or Oklahoma*)	Iowa is in the Midwest region and has similar numbers of ECE graduates as Indiana. Iowa also offers an articulation pathway for ECE credits that high school students may acquire in CTE courses. Note that stakeholders from Iowa participated in protocol piloting. If this precludes them from participation, Oklahoma would provide representation from the Midwest region.
Massachusetts	Connecticut	Connecticut is an alternate for the Northeast states. The ECE articulation pathway in Connecticut is less robust than that of Massachusetts, but it is unique. The pathway allows 18 ECE credits to be transferred into a bachelor's degree program, in addition to general education credits.
New Mexico	Oklahoma	Oklahoma and New Mexico have some similarities in their articulation pathways. Both have general articulation policies that guarantee transfer and specifically include ECE as a discipline. These states are in different census regions, but they are adjacent to one another. Oklahoma and New Mexico both require pay parity for early childhood educators, as compared to K-12 educators.

Pennsylvania	Connecticut	Connecticut is an alternate for the Northeast states. The ECE articulation pathway in Connecticut is less robust than that of Pennsylvania, but it is unique. The pathway allows 18 ECE credits to be transferred into a bachelor's degree program, in addition to general education credits.

IRB Approval

The entire research protocol also will be submitted to AIR's IRB for approval. The board, which is registered with the HHS Office of Human Research Protections and operates under a federal assurance, is responsible for reviewing all research conducted by the organization and its subcontractors. The board ensures that projects involving human subjects comply with professional standards and government regulations designed to safeguard participants and that research team members, including subcontractor staff, are adequately trained. The criteria that a study must meet for board approval include assurances that risks to participants are minimized, any risks are balanced by benefits, participant selection is equitable, participants are informed about risks and give consent freely, privacy is respected, and data confidentiality is adequately protected.

Interview and Focus Group Procedures

Data Collector Training

Trained project staff will conduct all interviews and focus groups. To ensure consistency across all interviews and focus groups, the study team will convene a two-hour training webinar for all staff before data collection begins. The PPSS Contracting Officer's Representative (COR) will be invited to attend this webinar. The purpose of this webinar will be to ensure that all staff understand the content of the protocols and procedures, including the consent process, and are familiar with the types of respondents in the sample. After the webinar, staff members will role-play practice interviews and solicit feedback to ensure that the study team avoids leading questions, engages conversationally while collecting information in a systematic fashion, and ensures consistency in approach across staff.

Interview Process

Interviews will take place by telephone and will last approximately 30–60 minutes, with longer interviews planned for faculty and administrators at institutions of higher education. Prior to the interview, the study team will send the respondent(s) an email that includes the study's OMB control number, a list of topics that will be discussed, and the elements of successful articulation identified by the TWG. Interviews will be audio recorded, with respondents' consent. The study team will plan to conduct the majority of interviews one-on-one, with two exceptions (support staff and students). If the respondent refuses to have the interview recorded, the interviewer will reschedule the interview for a time when a second data collector is available to take notes. In addition, college support staff and students will participate in focus groups, as described in the next section.

A team of interviewers, made up of one doctoral level researcher or experienced master's level researcher and one research assistant, will be assigned to each state. The researcher will conduct interviews with state representatives and senior higher education administrators. The research assistant will conduct interviews and focus groups with faculty, staff, and students. The research assistant also will assist with state-specific extant data review to identify interview sites and respondents, schedule interviews, and take notes, as needed. The utilization of state-based interview teams will ensure that data collectors have a full understanding of state context and can probe appropriately to gather relevant details.

Focus Group Process

To learn about the ECE articulation process between two- and four-year universities, the study team will conduct virtual focus groups with (1) college support staff, including a student advisor, a representative from the registrar's office, and a financial aid administrator, and (2) students who have transferred or intend to transfer from two-year to four-year institutions. Focus groups will last 45–60 minutes. Respondents will participate using video technology, which fosters a better conversation, allows the moderator to see who is talking, ensures equal contribution from all participants, and reduces cross talk and interruptions. Based on AIR's experience with other projects involving virtual focus groups, focus groups will be limited to four participants each.

GoToMeeting, a user-friendly system, will be the platform for these focus groups. To use this technology, all participants (including the interviewer) will log into the platform and enable their webcam. Students can use either their computer's audio or call in by telephone. To aid the discussion, the interviewer also will share his or her screen, displaying the discussion questions, so that participants can follow along. The facilitator will set norms and expectations before starting the focus groups, including allowing all participants to speak, not using the speakerphone, and muting yourself when not speaking. In addition, the interviewer will remind participants to state their name before speaking. GoToMeeting is capable of recording the session.

3. Methods to Maximize Survey Response Rates

This study does not include surveys.

4. Expert Review and Piloting Procedures

As discussed in Part A of this Supporting Statement, the study team convened a Technical Working Group (TWG) of 12 experts to provide expert advice to help guide and strengthen the study. While severing on the TWG, the experts were responsible for defining elements of successful statewide articulation for higher education programs in early childhood education. Experts were chosen based on their experience with articulation policies and represented a variety of stakeholders, including two-year college faculty, four-year college faculty, policy representatives, higher education administrators, and early childhood representatives. The 12 technical experts and their affiliations are shown in Exhibit 7.

The Technical Working Group met on April 3, 2017 at the Department headquarters in Washington, D.C., for a full-day meeting, at which the group identified elements of successful statewide articulation that provide a framework for this study's examination of articulation policies and practices in the six focal states. The study team also asked TWG members to review the draft interview and focus group protocols, and provide feedback on the content and wording of the interview questions. Their suggestions were incorporated into the protocols to help ensure that study gathers high-quality data to address the study's research questions.

The study team also conducted cognitive interviews with a state higher education administrator, a faculty person, and a student. Based on these pilot interviews, the study team eliminated or reworded questions that pilot interview participants found difficulty to answer. For example, state administrators are likely to be more familiar with general articulation policy, rather than specific provisions for articulation of ECE degree programs. Students may be more familiar with the term "transfer of credits" rather than "articulation." The study team also revised the order of questions, to ensure that high priority questions were asked first and that the interviews flow well.

Exhibit 7. Members of Technical Working Group

Name	Title	Affiliation
David Atencio	Associate Professor, Individual, Family, and Community Education	University of New Mexico; New Mexico Early Childhood Higher Education Task Force
Dawn Braa	Instructor	Dakota County Technical College
Kathleen Bryan	Assistant Professor; Education Program Coordinator ECE Online	University of Cincinnati
Rebecca Carothers	Endowed Chair; Early Childhood Education Director	Ivy Tech Community College Northeast
Steve Handel	Associate Vice President for Undergraduate Admissions	University of California, Office of the President
Mary Harrill	Senior Director of Higher Education Accreditation and Program Support	National Association for the Education of Young Children
Jan Ignash	Vice Chancellor of Academic and Student Affairs	The State University System of Florida
Gail Joseph	Associate Professor, Educational Psychology; Director of the Early Childhood and Family Studies Program	University of Washington
Antoinette Mitchell	Assistant Superintendent, Postsecondary and Career Education	Office of the State Superintendent of Education, District of Columbia
Elena Quiroz-Livanis	Director of Academic Policy and Student Success	Massachusetts Department of Higher Education
Sue Russell	Executive Director	T.E.A.C.H. Early Childhood National Center
Tracye Strichik	Director, Office of Early Learning	Alabama Department of Early Childhood Education

5. Individuals and Organizations Involved in the Project

The American Institutes for Research (AIR) is the contractor for the study. The project director is Dr. Alexandra Holod, who is supported by an experienced team of researchers leading the major tasks of the project. Contact information for the individuals and organizations involved in the project is presented in Exhibit 8.

Exhibit 8. Organizations and Individuals Involved in the Project

Responsibility	Contact Name	Organization	Telephone Number
Project Director	Dr. Aleksandra Holod	AIR	(919) 918-2319
Senior Advisor	Dr. Matt Soldner	AIR	(202) 403-5404
Quality Assurance Reviewer	Dr. Eboni Howard	AIR	(312) 588-7339
Data Collection Task Lead	Jennell McHugh	AIR	(202) 403-6795

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