Washington State Institute for Public Policy
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December 2022

Early Achievers Evaluation Report Four: *Analysis of Benefits and Costs*

The 2015 Washington State Legislature passed the Early Start Act, which required all child care and early learning (CC/EL) providers serving non-school-age children and receiving state funds to participate in the state's quality rating and improvement system, Early Achievers (EA).

The legislature also directed the Washington State Institute for Public Policy (WSIPP) to evaluate the relationship between Early Achievers quality ratings and outcomes for children in subsidized CC/EL and to conduct a benefit-cost analysis of Early Achievers.[1] The legislature directed WSIPP to submit annual reports on this evaluation from 2019 through 2022.

As described in WSIPP's 2020 EA report, we find that, on average, children attending a program that meets EA quality standards in the year before kindergarten have more positive outcomes the following year compared with outcomes for children attending a site that did not meet EA standards.[2]

In this fourth and final report in the series, we build on the 2020 analysis by estimating the projected monetary benefits of attending a site that meets quality standards. We also describe observed costs tied to Early Achievers quality ratings for child care centers.

Summary

Washington's 2015 Early Start Act (ESA) required all child care and early learning programs receiving state funds to participate in Early Achievers (EA), the state's quality rating and improvement system. The ESA directed the Washington State Institute for Public Policy to evaluate the association of EA ratings with long-term child outcomes and to produce a corresponding benefit-cost analysis.

In this fourth report, we focus on projected monetary benefits of attending a site in the pre-k year that meets EA quality standards, compared with attending a site not yet meeting quality standards. Based on our 2020 analysis of child outcomes in kindergarten, estimates indicate that on average, attending an EA quality Early Childhood Education Assistance Program (ECEAP) or child care center with subsidy may return benefits of approximately $4,300 to $7,000 per child over the course of the lifespan.

Analysis of available cost records for child care centers suggests that the average per-child/per-year dollar amount spent on sites that meet quality standards post-rating differs little from the amount spent on sites that did not meet quality standards. This cost analysis is limited; data are not available to estimate state costs for sites to initially meet EA quality standards.

Suggested citation: Goodvin, R., Rashid, A., & Krnacik, K. (2022). *Early Achievers evaluation report four: Analysis of benefits and costs.* (Document Number 22-12-2202). Olympia: Washington State Institute for Public Policy.

[1] Second Engrossed Second Substitute House Bill 1491, Chapter 7, Laws of 2015.

[2] Goodvin, R., Rashid, A., & He, L. (2020). *Early Achievers evaluation report two: Pre-Kindergarten quality and child outcomes in kindergarten* (Doc. No. 20-12-2203). Olympia: Washington State Institute for Public Policy.

In Section I, we review WSIPP's assignment to evaluate the Early Achievers Quality Rating and Improvement System (QRIS). We outline the report series, and the research questions addressed in the present report. In Section II, we briefly review the implementation of Early Achievers and summarize Early Achievers funding and cost components. In Section III, we present an analysis of projected monetary benefits associated with attending care that meets Early Achievers quality standards in the year before kindergarten (i.e., the pre-k year). In Section IV, we summarize the available information about costs associated with sites that did and did not initially meet EA quality standards. In Section V, we discuss limitations and conclude this analysis.

Legislative Assignment

The Washington state institute for public policy shall conduct a longitudinal analysis examining relationships between the early achievers program quality ratings levels and outcomes for children participating in subsidized early care and education programs. (b) The institute shall submit the first report to the appropriate committees of the legislature and the early learning advisory council by December 31, 2019. The institute shall submit subsequent reports annually to the appropriate committees of the legislature and the early learning advisory council by December 31st, with the final report due December 31, 2022. The final report shall include a cost-benefit analysis.

2E2SHB 1491, Early Start Act of 2015

I. Introduction

The Early Start Act (ESA) of 2015 directed WSIPP to produce an evaluation of Early Achievers that addresses the relationship between quality ratings and child outcomes over time. The assignment specifies that WSIPP should assess outcomes for "children participating in subsidized early care and education programs."[3] See WSIPP's Early Achievers Report One, Exhibits 1 and 2, for a summary of relevant subsidized child care and early learning (CC/EL) programs in Washington.[4] The assignment also directs WSIPP to conduct a benefit-cost analysis of Early Achievers.

Early Achievers Evaluation Report Series

The ESA directed WSIPP to produce a series of four reports on the EA evaluation. The present report is the fourth and final required report in this series.

We will concurrently publish one additional report assessing low-income family access to publicly funded CC/EL that meets EA quality standards. See Exhibit 1 for an overview of reports included in the Early Achievers evaluation series.

Exhibit 1
Early Achievers Evaluation Report Series

Report one: Dec 2019	Report two: Dec 2020	Report three: Dec 2021	**Report four: Dec 2022**	Report five: Dec 2022
Background and research design	Pre-k year relationship with kindergarten outcomes	Special topics	**Benefits and costs**	Access to EA quality care
Describe EA implementation, review national evidence on QRIS in relation to child outcomes, summarize ratings progress to date, and outline planned research design and evaluation limitations.	Evaluate the relationship between EA participation, and rating level, in the year prior to attending kindergarten (pre-k year) and child outcomes in kindergarten.	Examine how program impacts differ by— • child history of care and • site neighborhood vulnerability. Explore coaching receipt.	**Analysis of projected benefits from attending "at quality" pre-k, and state funds paid to sites that meet quality standards.**	Family-centered analysis of access to EA sites that meet quality standards in 2019.

[3] 2ESSHB 1491, Chapter 7, Laws of 2015.

[4] Goodvin, R., & Hansen, J. (2019). *Early Achievers evaluation report one: Background and research design* (Doc. No. 19-12-2202). Olympia: Washington State Institute for Public Policy.

Scope of Current Study

A comprehensive benefit-cost analysis of the Early Achievers (EA) system as a whole is not possible within WSIPP's evaluation assignment. A full economic analysis of a system intervention such as EA would require incorporating a broader array of potential costs and outcomes than supported by the present assignment or by available administrative data.[5] QRIS implementation may produce changes in CC/EL markets, workforce, and higher education; these sectors are outside the scope of WSIPP's directive to study child outcomes. See Appendix I for additional discussion.

As per the legislative assignment, WSIPP's previous reports evaluate the relationship between EA quality ratings and children's outcomes in kindergarten. However, we are unable to extend these results in a traditional benefit-cost analysis due to data limitations.

Primarily, there is misalignment between the benefits we can observe and the available data on costs. This is partly due to the lack of a baseline measure of site quality, and partly due to the structure of EA as a continuous quality improvement system. Since it is not possible to calculate the costs of getting programs to quality, a benefit-cost analysis of EA quality programming is not appropriate. We discuss these limitations in greater detail in Section IV.

Research Aims

We address the directive to conduct a benefit-cost analysis of Early Achievers by using *components* of WSIPP's typical approach to separately consider both benefits and costs to the state.

First, we estimate projected long-range monetary benefits of attending a site that meets EA quality standards, relative to attending a site that does not yet meet EA standards, in the year before kindergarten (i.e., the pre-k year). Section III addresses our method and the results of this analysis.

Second, in a separate analysis, we use available administrative data to estimate per-child/per-year costs allocated for child care centers that have met EA quality standards and for centers that have not yet met EA quality standards, following their initial rating. We describe this analysis in detail in Section IV.

[5] That is, state administrative agencies are not required to collect information relating to economic impacts of shifts in the child care market, or detailed person-level labor market or higher education data for staff in the CC/EL workforce that can be tied to specific sites.

II. Early Achievers Background and Program Funding

QRIS and EA Implementation

Quality rating and improvement systems for CC/EL are a framework for supporting workforce development and enriching care quality and ultimately for improving children's care experiences. QRIS has emerged as a strategy for expanding supply and access to high-quality care, with most states enacting a QRIS over the past two decades.[6]

Washington's QRIS, Early Achievers (EA), initially rolled out from July 2012 through July 2013 as a voluntary program. Passage of the ESA in July 2015 made EA participation mandatory for sites serving non-school-age children with state funding and optional for all other licensed or certified CC/EL providers. The ESA set timelines and requirements for participation.[7]

EA Overview

When sites register for Early Achievers, they may access supports that include coaching and consultation to promote quality improvement. Additionally, some sites may receive need-based grants.

Sites receive an overall rating from Level 2 to Level 5 based on points earned across five EA quality standard areas.[8] Exhibit 3 illustrates rating levels and points. The ESA required sites that provide Early Childhood Education Assistance Program (ECEAP) services to rate at a Level 4 or higher and sites that accept child care subsidies to rate at a Level 3 or higher.[9]

Exhibit 3

Overview of Early Achievers Points by Level

Note:
Source: Adapted from EA Participant Operating Guidelines (2020).

[6] According to the Build Initiative's Quality Compendium, 41 states and the District of Columbia were implementing a QRIS as of Fall 2019.

[7] E2SHB 1391. EA Report One, Section IV, details participation requirements. See Goodvin & Hansen (2019) Exhibit 7, for a timeline summarizing EA implementation, milestone dates, and key policy changes from 2012-2019. WSIPP's evaluation will cover EA as it was implemented through 2019. WSIPP's data and analysis will not reflect extensive changes to EA enacted after 2019.

[8] Overall EA quality ratings are most strongly weighted by the learning environment and interactions standard area. More detail about the standard areas, which include learning environment and interactions, curriculum, staff support and training, and child and family partnerships, is included in EA Report One, Section IV.

[9] E2SHB 1391. DCYF's *EA Participant Operating Guidelines (2017; 2020)* comprehensively describe the system. Sites that receive any ECEAP funding must rate at a level 4 or higher.

EA Funding Sources

The Department of Children, Youth, and Families (DCYF) provided information on Early Achievers funding and costs by source and activity.

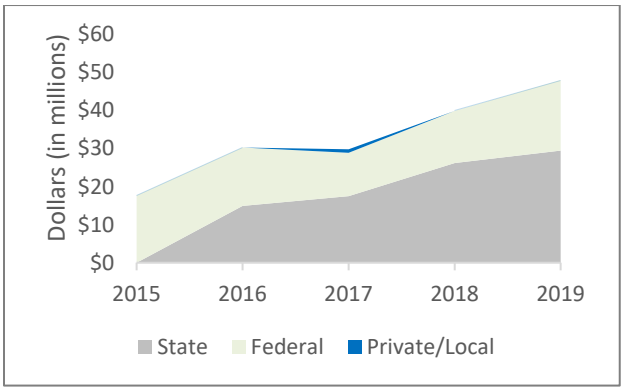
Washington funds the Early Achievers QRIS largely using a combination of state and federal sources.[10] Exhibit 4 shows annual EA expenditures by funding source over WSIPP's study period. This corresponds with EA implementation after program participation was mandated in the Early Start Act of 2015, through 2019 when all sites required to participate should have received an initial rating.[11]

State funding increased from approximately $15 million in 2016 to $29.5 million in 2019. Federal funding remained largely consistent across this period, with an annual average of $15.3 million. Funding from private or local sources has been limited, with one contribution of under $1 million in 2017.

The increase in state funding corresponds with a period during which EA approached full implementation. Existing ECEAP sites were rated by March 2016. Most existing licensed child care sites accepting subsidies received an initial rating from 2017 to 2019.

Exhibit 4

EA Annual Expenditures by Source, 2015-2019



Note:
Source: DCYF budget records.

EA Funded Activities and Incentives

Funding from state, federal, and other sources is combined to cover a range of activities to implement EA. We consider costs for these activities to fall into three categories: program administration and monitoring, direct quality improvement supports to providers, and tiered financial incentives based on rating level.

Early Achievers Funding for ECEAP and Licensed Pathway Sites

Early Achievers specific funding, activities, and incentives differ for sites rated on the ECEAP and licensed child care pathways.[12] The state did not allocate additional funds to provide EA supports and incentives for ECEAP programs; ECEAP contractors and subcontractors were required to implement EA functions largely within their existing infrastructure.[13]

[10] Prior to the 2015 ESA Early Achievers was also funded through federal, state, and private funds. Washington received Race to the Top-Early Learning Challenge grant funding from 2012 through 2015, and QRIS expansion was a key component of the state's grant application.

[11] The ESA initially required all sites serving children with subsidy to be rated by December 2019. This was later changed to allow sites to submit a *request* for rating by December 2019, to accommodate a backlog of sites that needed data collection for rating.

[12] Although sites with any ECEAP funding must rate at level 4, the ECEAP rating *pathway* is for sites in which at least 75% of slots are ECEAP funded. Sites with fewer than 75% ECEAP funded slots, and accepting subsidies, are rated on the licensed pathway and eligible for associated supports and incentives. See EA Report One, Section IV, for discussion of rating processes specific to ECEAP and licensed pathways.

[13] R. Brown-Kendall, DCYF QRIS Administrator (Personal Communication, November 1, 2022)

Washington put in place a more extensive new system of supports for Early Achievers implementation in licensed child care sites accepting subsidies, including dedicated funds for direct support of quality improvement, and tiered financial incentives for sites following their initial rating.[14]

Below we describe elements comprising administrative, direct support, and tiered incentive categories. We note whether activities and incentives apply to all EA sites or are specific to ECEAP or licensed pathway sites.

Administrative Costs

Within DCYF, EA costs include program infrastructure for policy development and administration, participation monitoring, integration of EA with child care licensing and early learning programs, and data management. We also include costs for data collection and rating—provided through a contract with Cultivate Learning—in the administrative category. Administrative program infrastructure supports all EA sites.

Direct Supports

A variety of activities and funding sources tied to EA are intended to support quality improvement and professional development efforts. All sites are eligible for technical support, coaching services both before and after the initial rating, and the development of an individualized quality improvement plan (QIP). ECEAP contractors provide coaching and QIPs for ECEAP pathway programs; Child Care Aware coaches provide these supports for licensed pathway child care sites.[15] Child care sites serving infants and toddlers may have access to specialized infant-toddler consultation support. Needs-based grants are available annually for qualifying licensed pathway programs to purchase materials or for training to improve program quality.[16] Finally, professional development scholarships and grants are also available for staff working at any EA site.

Incentives Linked to Rating Level

EA includes two types of financial incentives for licensed pathway programs that serve non-school-age children receiving child care subsidies.[17] First, rated programs may receive "tiered" subsidy reimbursements. In 2019, these reimbursements ranged from 2% to 20% above the baseline subsidy reimbursement rate, depending on program type and rating.[18]

Second, DCYF pays tiered quality improvement (QI) financial awards to licensed child care sites that have met rating standards. Award funds are intended for use by programs to support goals outlined in the program's quality improvement plan. Award amounts depend on program type and rating.[19]

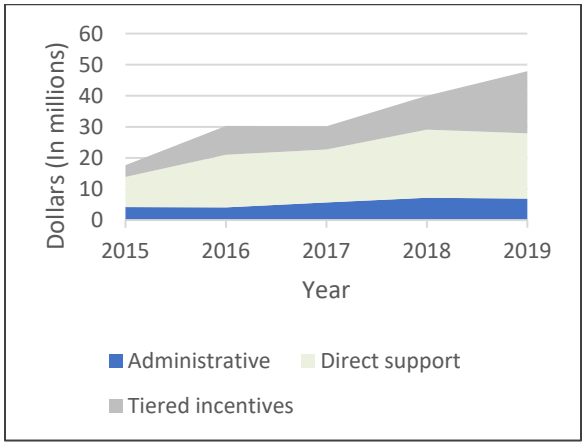
[14] EA Participant Operating Guidelines (2017; 2020).
[15] DCYF maintains a contract with Child Care Aware (CCA) of Washington to administer infrastructure and staff for technical support and coaching for licensed pathway child care sites. ECEAP performance standards and contracts require contractors to provide their programs with EA-specific coaching. Existing ECEAP contractors and subcontractor staff provide this EA support for ECEAP pathway programs, but there is no ECEAP funding specific to providing EA activities.
[16] During WSIPP's study period, only active Level 2 and rated Level 2 sites that met additional criteria for child population served were eligible for needs-based grants.
[17] Programs offering school-day or work-day ECEAP slots receive child care subsidy payments for the additional hours that children are on-site—beyond part-day slot hours. The hours funded by child care subsidies are eligible for tiered subsidy reimbursements. On average, from 2015 through 2019, only 15% of ECEAP slots were in school-day programs, and 5% were in working-day programs.
[18] Tiered reimbursement rates depend on whether sites are family home or center-based care, and their quality rating level. See EA Participant Operating Guidelines for details.
[19] As described in the EA Participant Operating Guidelines, child care centers and family home child care providers rated at Levels 3 through 5 receive QI awards. Additionally, family

ECEAP contractors received a one-time stipend for each ECEAP program that was rated and met quality standards. This stipend was awarded only during the initial EA implementation period, from April 2014 through May 2016.

Exhibit 5 shows total DCYF expenditures by cost category over time. Administrative costs remained relatively steady over WSIPP's study period. As expected, direct support and tiered incentive costs have increased in tandem with the higher numbers of sites enrolling, being rated, and meeting quality standards.[20]

Exhibit 5

EA Annual Expenditures by Cost Category, 2015-2019



Note:
Source: DCYF budget records.

Relevant cost components for ECEAP and licensed child care pathway sites are summarized in Exhibit 6; we note the availability of site-level records for each component.

In the cost analysis presented in Section IV of this report we focus on costs for licensed pathway child care sites accepting subsidies, and will not summarize costs for ECEAP pathway sites. As shown in Exhibit 6, cost components relevant to the ECEAP pathway are limited. Therefore, a summary statement about EA costs for ECEAP pathway sites based on the limited information available, would be incomplete and misleading. Additionally, we do not want to imply that ECEAP sites have dedicated EA funding comparable to licensed pathway sites.[21]

Exhibit 6

Activity and Incentive Cost Components for ECEAP and Licensed Pathway Sites

Cost component	ECEAP	Licensed child care
Data collection/rating	✓	✓
Pre-rating coaching	×	✓
Post-rating coaching	✓^	✓
Infant-toddler consultation		×
Rated participation stipend	✓	
Needs-based grants		✓
Quality improvement awards		✓
Tiered subsidy reimbursement	✓^^	✓
Professional development awards for staff	×	×

Notes:
Source: EA Participant Operating Guidelines (2017; 2020).

✓ Indicates a relevant cost;
× Indicates a relevant cost with no available site-level records (see Appendix III).
✓ ^ Post-rating ECEAP coaching records are notably incomplete, with coaching observed in less than 60% of ECEAP pathway sites.
✓ ^^ Tiered subsidy reimbursements apply only to extended care hours in school-day and work-day ECEAP, representing approximately 20% of ECEAP slots.

home child care providers rated at Level 2 may also qualify for QI awards.

[20] DCYF is revising EA, with potential implications to funding, particularly for rating costs and coaching. Additionally, site eligibility for some of the supports and incentives has changed. The current system is documented in EA Participant Operating Guidelines (Summer 2022). As a result, 2015-2019 expenditures do not necessarily predict future program expenditures.

[21] While we have access to DCYF records on hours of post-rating coaching for ECEAP pathway sites, these records are incomplete. Additionally, applying a cost for coaching hours in ECEAP sites implies that state funds are allocated for this purpose. The state does not allocate dedicated funding for ECEAP contractors to provide EA coaching and other supports; contractors have either added EA to their existing workloads or substituted EA activities for existing ECEAP supports.

III. Analysis of Projected Benefits

The legislature directed WSIPP to complete a benefit-cost analysis of Early Achievers. To our knowledge, there are no published benefit-cost analyses, or comparable economic analyses, of an established QRIS.[22]

As described in Section I, the context of EA implementation and data do not support a traditional benefit-cost analysis. Instead, in this section, we describe our use of a component of WSIPP's benefit-cost model to estimate long-range program benefits.

WSIPP's Benefit-Cost Model

WSIPP's model was developed to estimate potential long-range returns on state investment in social programs or interventions on a per-participant basis, relative to program costs. This economic model provides a standardized and internally consistent method for applying a monetary value to a range of outcomes associated with program participation, across a range of program and policy areas.

In the present analysis, we use WSIPP's established model to estimate expected long-range monetary returns without a cost comparison.[23] We describe results in terms of projected total lifetime benefits on a per-participant basis.

Specifically, we use WSIPP's model to estimate projected monetary returns from attending a program that met EA quality standards during the year before kindergarten (i.e., pre-k year).
The comparison of interest is between children spending their pre-k year in a site that meets quality standards ("program" group) and children in a site that was rated but had not yet met quality standards ("comparison" group).

Outcomes

Our analysis includes two outcomes evaluated in WSIPP's EA Report Two: Kindergarten readiness and special education enrollment (SPED) in kindergarten.[24] Relevant to our present analysis of projected benefits, we find that attending a program with a rating level that meets quality standards predicts a higher probability of kindergarten readiness, and a lower probability of SPED enrollment in kindergarten, compared with attending a rated site that did *not* yet meet EA standards. See Exhibit 8 for a summary of effect magnitude. In the following paragraphs, we describe outcome measurement and monetization.

Exhibit 8

Estimated Associations between Attending an EA Quality Site in the Pre-K Year and Kindergarten Outcomes

Sample	Outcome	
	K readiness	SPED
ECEAP	10% more likely	22% less likely
Subsidy	10% more likely	13% less likely^

Note:
Source: WSIPP analysis in Goodvin et al. (2020).
^ Result is not statistically significant.

[22] There are several published cost analyses for QRIS in other states. This work, along with DCYF's Cost of Quality series (published in 2013 and 2018), informed our approach to estimating costs.

[23] In WSIPP's benefit-cost model we can remove the impact of the cost input by setting the cost for both groups, and thus the difference in cost between groups, to zero.

[24] EA Report Two provides a full description of our outcome evaluation method and results. In Report Two we also examined group differences in attendance; this outcome has no associated monetary value in WSIPP's benefit-cost model, so is not included here.

Kindergarten Readiness. Kindergarten readiness is assessed using the Washington Kindergarten Inventory of Developing Skills (WaKIDS), which documents teachers' observations of children's knowledge, skills, and abilities within the first two months of entering kindergarten. Teachers observe children's skills across six domains (e.g., math, literacy, social-emotional). Children are considered fully "kindergarten ready" if they meet or exceed benchmark scores indicating age-appropriate skills for all six domains.

In WSIPP's benefit-cost model, an increase in kindergarten readiness is monetized through an association with higher 3rd-grade test scores. Higher test scores are in turn linked with higher earnings.[25]

Special Education. Special education (SPED) enrollment in kindergarten is based on program participation records from the Office of Superintendent of Public Instruction (OSPI).

In WSIPP's benefit-cost model special education is monetized using the established cost of special education programming in Washington's K-12 public schools. A reduction in the need for use of special education programs throughout children's school years results in cost savings.

Results: Projected Monetary Benefits

In this section, we present results from our analysis of projected monetary benefits associated with attending a site in the pre-k year that meets EA quality standards, compared with attending a site that does not meet quality standards. Consistent with WSIPP's outcome evaluation, we conduct separate analyses for children in ECEAP programs and children in licensed child care sites with subsidies.

Using WSIPP's established method for estimating monetary benefits of the outcomes directly observed in kindergarten, we estimate that attending an ECEAP pre-K program operating at or above Early Achievers quality standards may return total lifetime benefits of approximately $7,011 per child, on average.

For children with subsidy, attending a licensed child care center operating at or above Early Achievers quality standards in their pre-k year may return total lifetime benefits of approximately $4,354 per child, on average.

Benefits Source and Perspective. For both ECEAP and subsidy samples, benefits are expected to accrue from future labor market earnings and a reduction in spending for special education programs.[26] Most of the expected benefits come from reduced spending on special education.

[25] Our initial research plan also called for an analysis of 3rd-grade academic outcomes, which are an established monetized outcome in WSIPP's benefit-cost model linked with labor market earnings. However, Covid-19-related school closures and federal reporting waivers in the 2019-20 and 2020-21 school years reduced the number of relevant years with outcomes data, and as a result, too few cohorts were available to complete this analysis. For additional detail on the analysis linking kindergarten readiness and 3rd-grade test scores see Appendix II.

[26] For additional detail regarding WSIPP's benefit-cost model, and how outcomes are monetized, Washington State Institute for Public Policy. (December 2019). *Benefit-cost technical documentation.* Olympia, WA: Author, section 4.8 summarizes the valuation of K-12 Education outcomes.

WSIPP categorizes long-range projected benefits into four categories, or perspectives: benefits to program participants, benefits to taxpayers, benefits to other people in society, and indirect benefits. Exhibit 9 summarizes projected per-participant benefits by outcome and perspective.

Benefits expected to accrue to the participant, in this case, are due solely to the value of increases in earnings associated with kindergarten readiness. Projected benefits to the participant are similar for ECEAP (Exhibit 9) and subsidy (Exhibit 10) samples because the association between EA quality in the pre-k year and kindergarten readiness is consistent across the two samples.

The taxpayer perspective includes increased tax revenue from increased earnings and avoided taxpayer-funded costs, such as the costs of K-12 special education. "Other people" includes the economic spillover benefits of having a better-educated workforce. "Indirect" reflects net changes in the deadweight cost of taxation due to the reduction in taxpayer-funded costs related to K-12 special education services.

The provision of special education programming is expensive for the state; benefits tied to special education come entirely from reduced state, local, and indirect costs. These benefits are larger in the ECEAP sample (Exhibit 9) than in the subsidy sample (Exhibit 10) because of a stronger estimated association between EA quality pre-k and placement in special education programming for the ECEAP sample.

Range of Projected Benefits. These figures reflect our best estimates. However, a range of monetary benefit values is possible given the uncertainty inherent in all estimates of program effects. We calculate the likely range of projected benefits using an established procedure within WSIPP's benefit-cost model for summarizing uncertainty.[27] For our ECEAP sample, benefits are likely to fall in the range of $4,483 to $9,595. For our subsidy sample, we observe likely benefits ranging from $1,324 to $7,136. That is, 90% of the time we would expect benefits to fall within these ranges. See Appendix III for more detail on this analysis.

[27] See WSIPP (2019), Chapter 7, regarding WSIPP's use of Monte Carlo simulation to model uncertainty.

Exhibit 9

Predicted Per Participant Benefits (in 2019 Dollars): EA Quality ECEAP Sample

Outcomes	Benefits by perspective							Total
	Participants	Taxpayer perspective				Other	Indirect	
		Taxpayers total	Federal	State	Local			
Kindergarten readiness (via test scores): Labor market effects	$709	$302	$194	$61	$47	$374	$0	$1,385
Special education: K-12 system costs	$0	$3,751	$0	$2091	$1,661	$0	$1,875	$5,626

Exhibit 10

Predicted Per Participant Benefits (in 2019 Dollars): EA Quality Subsidy Child Care Sample

Outcomes	Benefits by perspective							Total
	Participants	Taxpayer perspective				Other	Indirect	
		Taxpayers total	Federal	State	Local			
Kindergarten readiness (via test scores): Labor market effects	$750	$319	$205	$65	$50	$396	$0	$1,466
Special education: K-12 system costs	$0	$1,925	$0	$1,073	$853	$0	$963	$2,888

IV. Analysis of Costs

In this section, we describe per child/per year costs associated with sites that were rated as meeting quality standards and costs associated with sites that were rated but did not yet meet quality standards.

As noted in Section II, our analysis is specific to licensed child care sites accepting subsidies. The state does not allocate Early Achievers-specific funding for ECEAP pathway programs, and available information reflects only a fraction of the known relevant costs.

To align as closely as possible with the outcomes analysis that forms the basis for our projected benefits (see EA Report Two), we focus on cost data for licensed child care centers. Our estimates for child care centers may not reflect funds allocated for family home child care sites.[28]

We use Washington State administrative data provided by DCYF, Child Care Aware of Washington (CCA), and Cultivate Learning. In line with WSIPP's typical approach to estimating program costs, we focus on costs to the state. Providers and private-pay families may also share in the cost of high-quality CC/EL; these costs are outside the scope of WSIPP's analysis.[29]

Challenges in Estimating Program and Comparison Group Costs

WSIPP's standard approach to benefit-cost analysis requires developing an estimate of program costs for use in our model. We typically estimate program costs as the *annual per-participant cost required to achieve outcomes and estimated benefits of a program*. We then compare that cost to the annual per-participant cost of the alternative—either no program or costs of a different program.

However, program and comparison groups in WSIPP's Early Achievers evaluation differ from usual scenarios in that *all sites in our sample, regardless of their quality rating during our study period, are engaged in EA*. In other words, every site participates in the program and there is no true comparison group. Thus, a typical cost analysis of the EA program and comparison groups is not possible.

As an alternative, we can conduct a cost analysis of EA quality programming by comparing the sites which meet EA quality standards with those that do not. This approach is consistent with the program and comparison groups in WSIPP's outcome analysis.

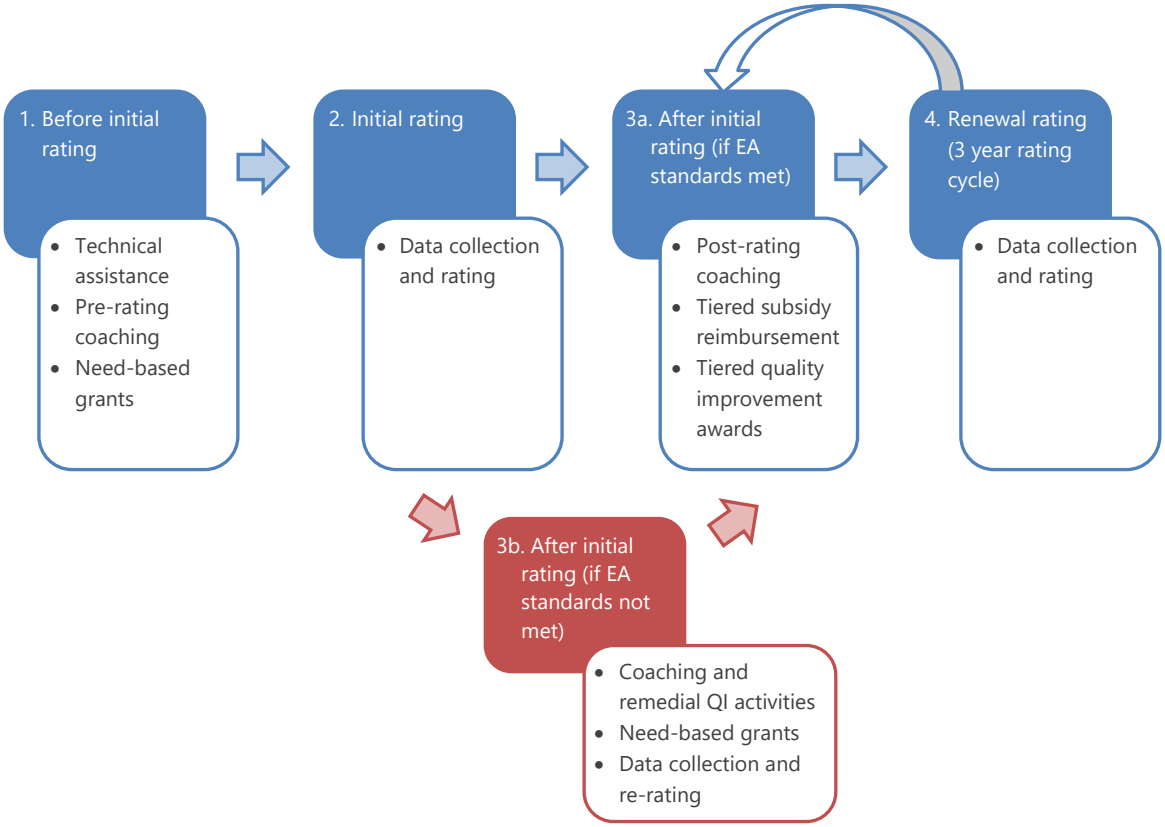
[28] The same set of EA supports and incentives are available to center-based and family home child care providers (see EA Participant Operating Guidelines). Family home (FH) providers have slightly higher tiered subsidy reimbursement rates, and lower quality improvement award amounts, compared with centers. Unlike center-based providers, FH providers can receive a quality improvement award after being rated at a quality level two.

[29] Karoly, L.A., Cannon, J.S., Gomez, C.J., & Whitaker, A.A. (2021). *Understanding the cost to deliver high-quality publicly funded pre-kindergarten programs.* Santa Monica, CA: RAND Corporation. In the 2021-23 Operating Budget, the Legislature directed the Child Care Collaborative Task Force to "report findings and recommendations on the true cost of quality child care" in Washington State. Engrossed Substitute Senate Bill 5092 Chapter 334, Laws of 2021, Section 129.

With this comparison, we note that Washington provides funding for EA supports and incentives for all sites providing publicly funded care, regardless of quality rating, to improve and maintain care quality. Coaching and other quality improvement supports are provided to sites that have met EA quality standards, and those that have not yet met EA quality standards—at all stages of the process. However, tiered incentives are largely available only after sites receive a rating that meets quality standards. Exhibit 11 illustrates which categories of costs occur at each EA stage.

Exhibit 11

Cost Components Allocated or Available by Stage of EA Process



In making a comparison of sites that have and have not yet met quality standards, we would ideally identify the cost required for sites to "get to quality." This would include costs allocated during Stages 1 and 2 in Exhibit 11 above.

Unfortunately, because no measure of baseline quality—at the start of Stage 1 – is available, we cannot differentiate sites that were already operating at quality from sites that needed to improve their quality to meet EA standards. In other words, we cannot identify the cost of getting to quality because we cannot account for differences in site quality before EA.

These limitations—1) no distinct costs for program versus comparison sites, and 2) insufficient information to determine the cost of sites initially meeting quality standards—preclude us from estimating costs that directly correspond to the projected benefits described in Section III. We *are* able to describe the per-child/per-year amount of state funds allocated for child care centers that have already been rated as meeting quality standards, and for centers that have been rated but do not yet meet EA quality standards.

Included Cost Components

We considered costs for EA administration, direct support to programs, and tiered incentives, described in Section II of this report. Administrative data were not available for all relevant costs; our estimates are limited to those costs which could be observed. We include costs if they were—

1) Assumed by the state;
2) Related to quality recognition and maintenance or improvement following completion of initial rating; and
3) Linked to specific sites.[30]

Cost Estimates

We calculated total per child/per year costs for sites meeting EA standards and total per child/per year costs for sites that were rated and did not meet EA quality standards. We report total costs, and costs by component, in Exhibit 12.[31]

Differences in total observed per child/per year costs between the two groups of sites —those meeting quality standards and those not meeting quality standards—are relatively small.

Considering individual cost components, we observe higher data collection/rating costs in comparison group sites. This is a result of the required re-rating process. Given potential variability in the amount of coaching following an initial rating, we see relatively similar coaching costs between the two groups, and coaching makes up the largest share of costs for both. Finally, higher tiered incentive costs in the program group are unsurprising, given that these incentives are primarily available to sites meeting EA quality standards.

[30] We exclude costs assumed by other parties such as providers or ECEAP contractors in line with WSIPP's typical focus on state costs. We exclude costs incurred prior to each sites' initial rating because baseline quality ratings are not available, and therefore these costs cannot be assigned to treatment or control group. Finally, we exclude administrative costs of operating EA that cannot be tied to individual sites. Appendix IV includes additional information on costs.

[31] Appendix V details our approach to these calculations.

Exhibit 12

Average Per Child/Per Year Costs for Licensed Pathway Child Care Centers Accepting Subsidies

Cost component	Sites not meeting EA quality standards (N=559)	% of observed costs for sites not meeting EA quality	Sites meeting EA quality standards (N=1,796)	% of observed costs for sites meeting EA quality
Administrative costs				
Data collection/rating	$21.55	26%	$11.14	11%
Direct support costs				
Coaching (post-initial rating)	$46.93	56%	$57.45	54%
Needs-based grants	$1.30	2%	$0.09	0%
Tiered incentives				
Quality improvement awards	$4.66	6%	$10.56	10%
Tiered subsidy reimbursement	$9.26	11%	$26.84	25%
Total per child/per year	**$83.69**	**100%**	**$106.07**	**100%**

Notes:

Source: WSIPP analysis of administrative data provided by DCYF, Child Care Aware of Washington, and Cultivate Learning.
"Meeting EA quality" group includes licensed child care sites accepting subsidies that were rated and met quality standards;
"Not meeting EA quality" group includes licensed child care sites accepting subsidies that were rated, but did not yet meet quality standards.
Columns presenting % of observed costs reflect only costs for each group that could be observed; the total EA cost to the state for each group is unknown.

V. Limitations and Conclusions

Limitations

The most notable limitation of this work is that we cannot estimate costs that align with achieving observed outcomes or projected benefits. This is in part because pre-existing program quality, *prior* to site participation in EA, cannot be accounted for, and in part due to the structure of EA itself. Conducting a benefit-cost analysis using only the pieces that we can measure would not be an appropriate economic evaluation.[32]

Due to limited data availability, some relevant outcomes and costs are not included in our analysis. Ultimately, a more comprehensive analysis may result in different estimated long-range returns and/or costs.

For example, participation in high-quality CC/EL may relate to later behavior, other academic outcomes, and mental health. In addition, access to quality care may impact caregiver outcomes such as education, labor force participation, and interactions with the child welfare system. None of these potential outcomes are included in our analyses.[33]

A longer follow-up period and mandate to access a broader set of outcomes are required to more fully estimate potential program benefits based on participant outcomes. Current state administrative data infrastructure may constrain such an undertaking.

Several limitations also exist with regard to costs. Most critically, our estimates do not incorporate the cost of state supports provided to help sites initially meet EA quality standards. Direct supports to providers prior to their initial rating would, in theory, reflect the cost of "getting to quality." However, in the absence of a quality baseline, we cannot differentiate sites that were already operating at quality from sites that needed to improve their quality to meet EA standards. Among sites that required improvement, we cannot determine the extent of efforts required to meet EA standards.

Administrative data for some included costs may be imprecise or incompletely recorded. Further, relevant systematic site-level administrative data are not available and therefore could not be included in estimates. This includes costs for infant-toddler consultation and educational grants and scholarships for staff in EA programs.

Finally, our cost estimates focus on state costs. Program providers and communities (through in-kind donations) may assume the costs of improving and operating at higher quality. State supports and incentives are intended to compensate for provider costs, but we do not have the requisite data to determine whether providers are fully compensated by state incentives or private-pay enrollments.[34]

[32] Steuerle & Jackson (2016). *Advancing the power of economic evidence to inform investments in children, youth, and families*. National Academies Press.

[33] Covid-19-related school closures and data impacts precluded evaluation of child outcomes beyond kindergarten in the Early Achievers report series. WSIPP used all years of outcome data available for analysis.

[34] Washington's Child Care Collaborative Task Force is due to release a report on the cost of quality child care that may speak to these issues.

Another limitation is the generalizability of our findings. Our projected benefits analysis only includes the sample of sites that are child care centers (vs. family homes) that have been operational for at least two consecutive years and enroll at least four children receiving state-funded care. For more details about our sample selection, refer to EA Evaluation Report Two, Section III. These choices may limit our ability to draw conclusions about the potential benefits of EA to the broader population of Washington's children attending early learning or child care programs with state support.

More broadly, questions remain regarding Early Achievers system impacts. Assumptions around immediate and intermediate goals of QRIS—such as parent selection of higher rated providers—as a market-based system to improve care quality and ultimately child outcomes, are largely untested.[35]

We additionally note that WSIPP's evaluation series established that attending a site that meets EA quality standards in the pre-k year is associated with more positive outcomes in kindergarten. However, due to data limitations (most notably the absence of a baseline quality measure), we are unable to establish whether the Early Achievers QRIS *caused* changes in program quality or differences in child outcomes.

Conclusions

Based on limited analyses of projected benefits and observed costs, we conclude that there are likely modest potential long-range economic benefits to individuals and society, on average, from children who attend a pre-k site that has been rated as meeting EA quality standards.

Given the EA system in place, and using available cost information, we found there is minimal difference in observed costs between EA sites rated at quality and EA sites rated but not yet meeting quality standards.

DCYF is in the process of implementing substantial changes to Early Achievers. Our retrospective research cannot speak to child outcomes, projected benefits, or costs under the new system. Further research would be required to determine whether CC/EL quality levels continue to associate with later child outcomes.

[35] See Appendix I for additional discussion.

Appendices

Early Achievers Evaluation Report Four: *Analysis of Benefits and Costs*

Appendices

I. QRIS Theory of Change and Potential System Economic Impacts

The 2015 Legislature directed WSIPP to study the relationship between Early Achievers (EA) quality ratings and child outcomes. However, potential long-range impacts and monetary consequences of implementing EA are not limited to child outcomes. A comprehensive benefit-cost analysis of the EA system would include benefits and costs in other sectors. We address two examples here.

First, EA policies and practices may change the child care/early learning (CC/EL) marketplace. The Quality Ratings Improvement System (QRIS) was initially developed as a market-based strategy for improving the quality of CC/EL programs, and theories of change explicitly call for shifts in the market toward higher quality care over time.[36] See Exhibit A1 for a prominent example of a QRIS theory of change, presented in the first Early Achievers standards validation study.[37] In addition to improving care quality at many sites, the theory assumes that when parents are provided with information about CC/EL quality and ratings, parents' preference for higher-rated sites will lead to lower-rated providers being undersubscribed, and eventually closing. Limited preliminary research suggests that parents respond to quality ratings, although the degree of influence on parent choice depends on having local access to enough providers with varied ratings.[38] Additionally, Washington providers that do not meet EA quality standards lose eligibility to receive state funds or subsidy reimbursements. All of these shifts have potential labor market impacts.

Second, workforce changes incentivized by EA, and required by the Early State Act (ESA), may also trigger both intended and unintended economic impacts. Early Achievers, like many QRIS, utilizes program staff credentials and education to inform quality ratings and the ESA of 2015 set educational requirements for staff in EA programs.[39] This aspect of EA requirements may have wider impacts on the educational system. DCYF has worked with Washington's higher education institutions to develop stackable early childhood education certificate and degree programs.

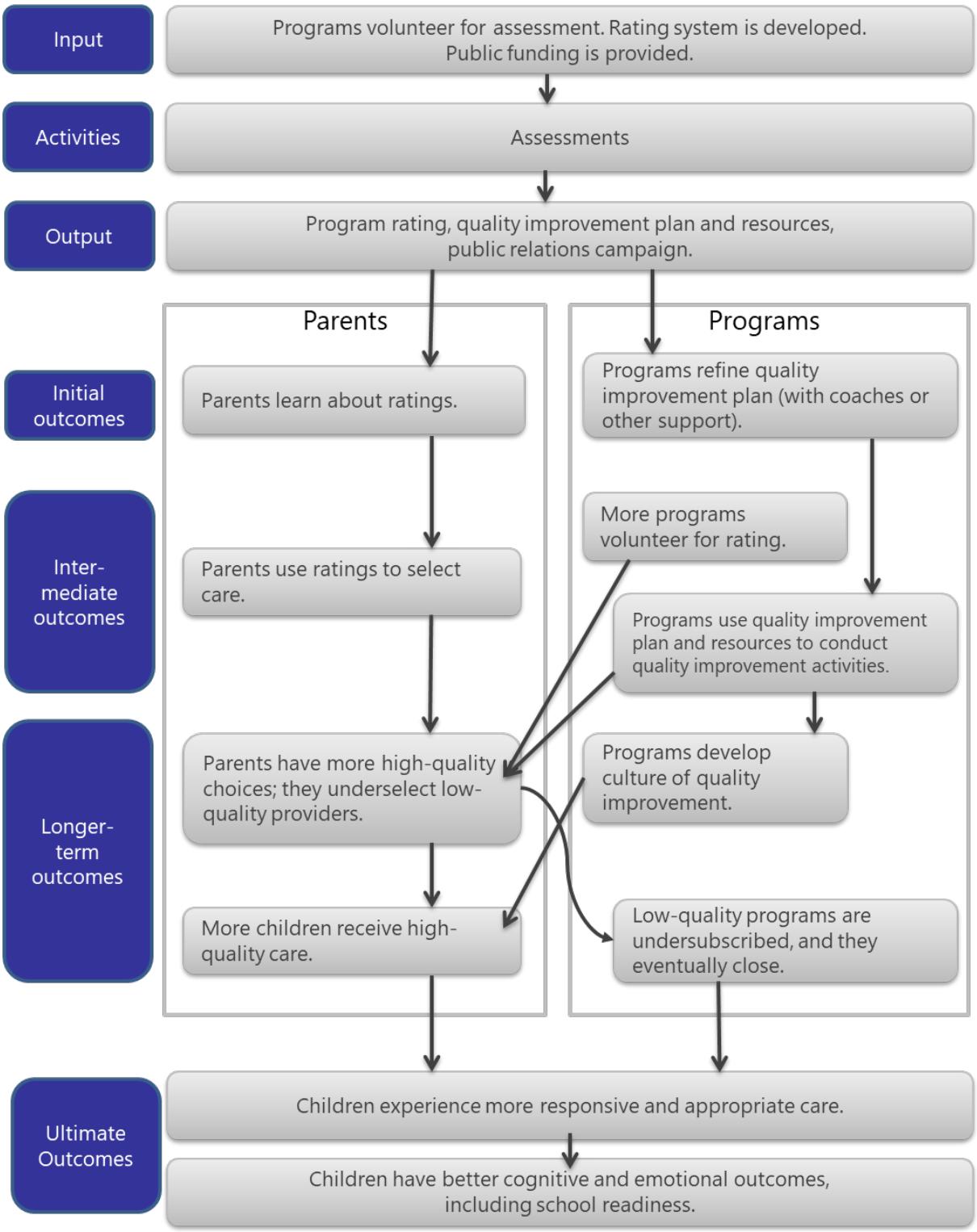
This professional development incentive structure presents some concerns that staff turnover could result from employees becoming more competitive in new labor markets. Indeed, one recent study suggests that states' enactment of a QRIS increases their supply of highly skilled child care labor, especially at centers, but may also increase turnover unless a complementary wage compensation program is also introduced.[40] Additionally, CC/EL providers may increase private-pay tuition rates to support higher staff costs.

In Exhibit A2 we summarize some of the monetary impacts that could potentially result from changes in education incentives and requirements.[41] These impacts are outside the scope of WSIPP's child outcomes evaluation assignment and are largely unstudied in the field.[42] However, such changes could be considered in a comprehensive economic analysis of QRIS.

[36] Goffin, S.G., & Barnett, W.S. (2014). Assessing QRIS as a change agent. *Early Childhood Research Quarterly, 30*, 179-182.
[37] Soderberg, J., Joseph, G.E., Stull, S., & Hassairi, N. (2016). *Early Achievers standards validation study: Final report*. Olympia: Washington State, Department of Early Learning.
[38] Borowsky, J. (2019). Who benefits from child care ratings? Evidence from Minnesota's Parent Aware program.
[39] RCW 43.216.085.
[40] Herbst, C. (2018). The impact of quality rating and improvement systems on families' child care choices and the supply of child care labor. *Labour Economics, 54*, 172-190.
[41] We emphasize that because the ESA put in place requirements concurrently with the EA participation mandate, disentangling impacts of Early Achievers incentives from requirements set in the ESA is a methodological challenge.
[42] Herbst's (2018) study of state-level impacts of implementing a QRIS on the child care workforce is an exception.

Exhibit A1

QRIS Theory of Change

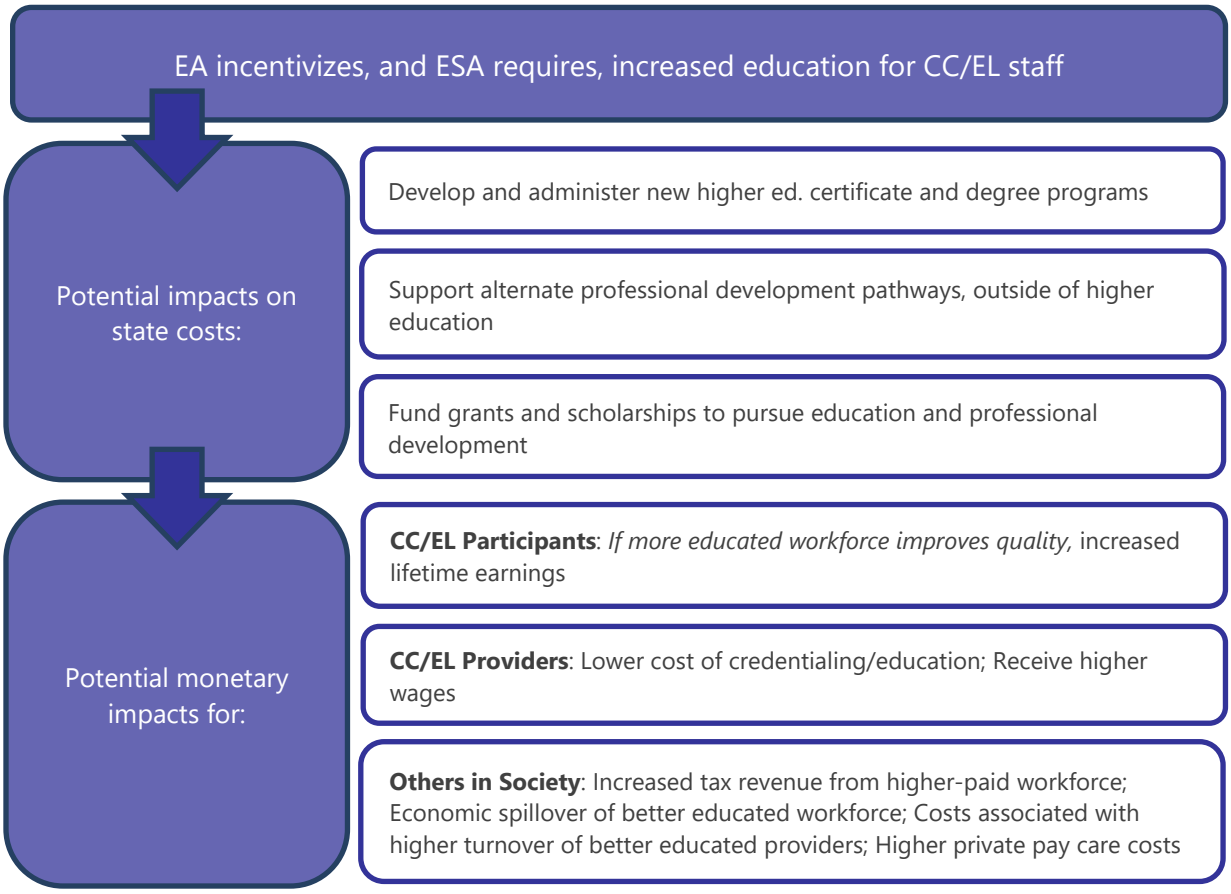


Note:

Adapted from Soderberg et al. (2016); Zellman, G., & Perlman, M. (2008). *Child-care quality rating and improvement systems in five pioneer states: Implementation issues and lessons learned*. Rand Corporation.

Exhibit A2

Example of Potential Costs and Benefits Associated with Changes to QRIS Workforce Requirements



II. Outcome Monetization in WSIPP's Benefit-Cost Model

WSIPP's benefit-cost model did not previously include an assigned monetary value for kindergarten readiness. To support an analysis of projected benefits for the EA evaluation assignment, in which kindergarten readiness is a central outcome of interest, we needed to first determine whether monetary value could be assigned to kindergarten readiness through links with existing monetized outcomes in the benefit-cost model. Thus, we conducted additional analysis to examine the relationship between kindergarten readiness and 3rd-grade assessments. For this analysis, we use state administrative records from the Department of Children, Youth, and Families (DCYF); the Office of the Superintendent of Public Instruction (OSPI); and The Education Research and Data Center (ERDC).

Key Variables. Kindergarten readiness is assessed using the Washington Kindergarten Inventory of Developing Skills (WaKIDS). Teachers observe children's skills across social-emotional, physical, cognitive, language, literacy, and mathematics domains.[43] Children who meet or exceed the benchmark in all six domains are considered "kindergarten ready." We examine the relationship between kindergarten readiness and two separate outcomes: 1) Smarter Balanced Assessment (SBA) English language assessment (ELA) test scores in the 3rd grade, and 2) SBA mathematics test scores in the 3rd grade.

Sample. Our sample includes children enrolled in the Free and Reduced Price Lunch (FRPL) program anytime between kindergarten and 3rd grade who have a WaKIDS assessment score between the 2011-12 academic year (AY) and the 2015-16 AY, and a corresponding SBA score between 2014-15 AY and 2018-19 AY.[44] Our final sample includes 63,767 children, of which 21,601 (34%) are kindergarten ready.

Model. Our model estimates the average difference in 3rd-grade test scores between children who are kindergarten-ready ("treatment group") and those who are not ("control group"). We attempt to reduce the impact of selection bias by ensuring that our treatment and control groups are balanced on child characteristics that could predict both kindergarten readiness and 3rd-grade assessment scores. For this, we use a statistical matching technique called entropy balancing which allows us to estimate weights to balance on the following characteristics: race/ethnicity, sex, primary language, kindergarten program enrollment (Special Education, Limited English Proficiency, Learning Assistance Program, Title I, FRPL), average monthly absences in kindergarten, and an indicator for if the student ever transferred schools. Our models also account for time-varying kindergarten school and school district-level characteristics, and school and year-fixed effects.[45] Standard errors are estimated to adjust for clustering at the school level.

Results. We find that, on average, children who are kindergarten ready score 43 points higher on both the SBA math and ELA tests in the 3rd grade than those who are not kindergarten ready (Exhibit A3).

[43] Children meet or exceed a benchmark score if they demonstrate age-appropriate skills for that domain.
[44] If students transfer schools during the academic year, our sample retains information from the first school they attended. If a student repeats a grade, our sample retains information from the first AY they completed the grade.
[45] (Kindergarten) school characteristics include total enrollment, percent students Black, percent students White, percent students Hispanic, average years of instructor experience, and percent instructors with a masters degree. (Kindergarten) school district characteristics include catchment area population, racial demographics, educational attainment, poverty rate, and unemployment rate.

Exhibit A3

Kindergarten Readiness and 3rd-Grade Outcomes

	SBA, math	SBA, ELA
Kindergarten ready	43.33*** (0.86)	43.62*** (0.788)
Observations	63,767	63,767

Note:

Standard deviations are reported in parentheses.

III. Analysis of Possible Range of Estimated Benefits

WSIPP's benefit-cost model includes many inputs and assumptions, and there is significant risk and uncertainty around many of these factors. If the inputs are varied, the model will produce different results. Therefore, it is important to test the model systematically for the riskiness inherent in the single-point estimates. We do this by employing a Monte Carlo simulation method where we run the model 10,000 times, each time varying the inputs randomly after sampling from estimated ranges of uncertainty that surround the key inputs. We then record the results of each run of the model.

In a typical application of WSIPP's benefit-cost model, WSIPP reports a straightforward measure of investment risk: for any program, what percentage of the time can we expect benefits to exceed costs? That is, our key measure of risk is this: after running the model 10,000 times, what percentage of the time will the net present value of benefits be greater than zero (or the benefit-cost ratio be greater than one)?

In the present study, we are estimating projected benefits only, rather than net present value. We use the established Monte Carlo simulation method to report on a different summary statement of uncertainty, or variation, around average estimated per-person lifetime benefits. In the simulation for this study, we allow the inputs for effect size estimates to vary and hold the input for the difference in cost between the treatment and control groups constant at zero. This approach effectively factors cost out of the equation and allows us to produce a distribution of projected benefits that corresponds with 10,000 randomly drawn estimates for the size of the effect of treatment (attending pre-k rated at quality) on kindergarten outcomes.

See Exhibits A4 and A5 (on the next page) for the full distribution of estimated benefits given different effect size estimate inputs in the Monte Carlo simulation. Our "best estimate" projections, reported in Section III, represent the mathematical average taken from this distribution. For our ECEAP sample, 90% of the 10,000 estimates fall between $4,483 to $9,595. For our subsidy sample, 90% of the 10,000 estimates fall between $1,324 to $7,136.

We note that in distributions for both the ECEAP and subsidy samples, the full distribution of estimated benefits includes estimates below zero. This occurs because the randomly drawn distribution of effect size estimates can include negative impacts. In the 10,000 runs, negative benefits were an unlikely outcome. For the ECEAP sample, estimates of negative benefits make up only 0.04% of the distribution. For the subsidy sample, estimates of negative benefits are 2.89% of the distribution.[46]

[46] Relative to the estimated effect in the ECEAP sample, the subsidy sample has a smaller effect size and greater variation, or uncertainty, around that effect size.

Exhibit A4

Distribution of Estimated Per Participant Benefits (in 2019 Dollars) from Monte Carlo Simulation: EA Quality ECEAP Sample

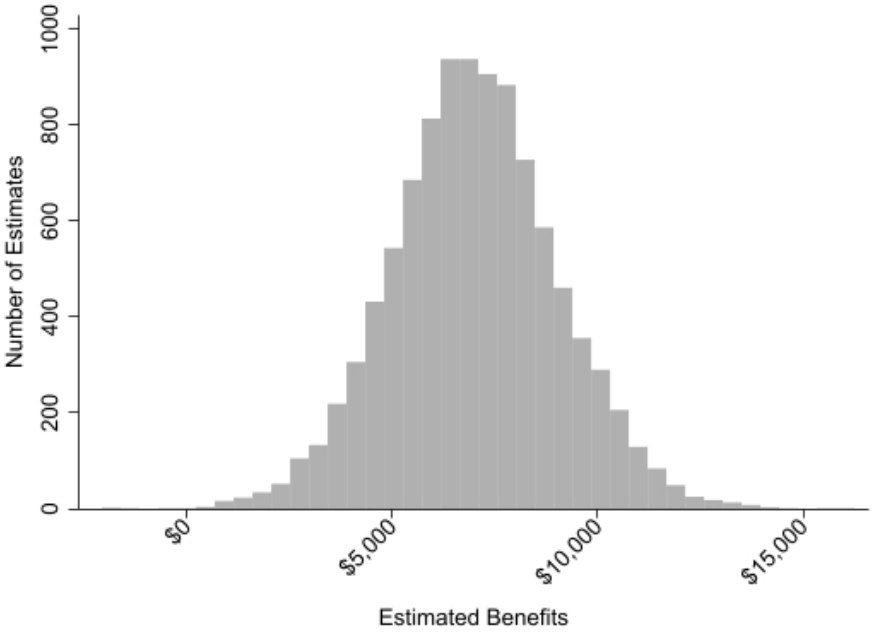
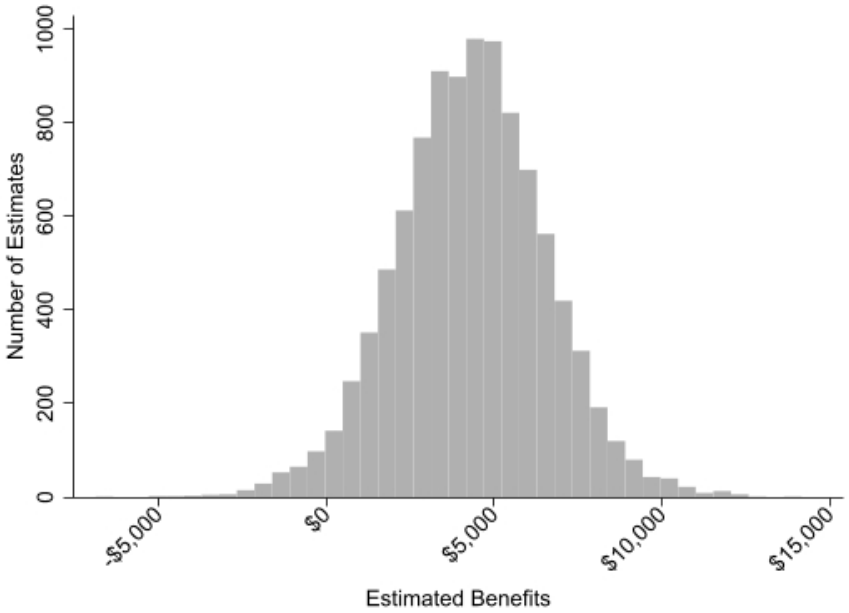


Exhibit A5

Distribution of Estimated Per Participant Benefits (in 2019 Dollars) from Monte Carlo Simulation: EA Quality Subsidy Child Care Sample



IV. Early Achievers Costs

In this section, we provide additional information about known Early Achievers cost components. We considered costs for EA administration, direct support to programs, and tiered incentive payments, described in Section III of this report.

We first summarize the components included in our estimates of per-child/per-year allocations for licensed pathway sites that meet quality standards (program group) and for licensed pathway sites that were not meeting quality standards during our observation period (comparison group). Exhibit A6 lists cost components, our data source(s), and other relevant details.

We included observed costs if they were:

1) Assumed by the state;
2) Related to quality recognition and maintenance or improvement following completion of initial rating; and
3) Tied to individual sites.

Administrative data were not available for all relevant costs. Our estimates are limited to those costs which could be observed. In Exhibit A7 we summarize information on relevant costs that could not be included, either because they did not meet the inclusion criteria listed above, or because administrative data are not available.

Exhibit A6

Costs Components Included in Per-Child/Per-Year Cost Estimates for Licensed Pathway Child Care Centers

Cost component	Activity/cost description	Data/calculation
Data collection	All sites are subject to data collection from Cultivate Learning at UW (CL) for their initial rating. Sites not meeting quality standards must participate in a successful re-rating process to continue being eligible to accept child care subsidy reimbursement.	Cultivate Learning provided an estimate of $3,876.59, on average, per rating in 2019. This estimate includes salary and wages for data collection staff, contractual services, travel, supplies and materials, equipment, and overhead costs. For all sites in our sample, we apply this cost to each rating during our observation period based on records provided by DCYF/CL from WELS.
Post-rating coaching	Child Care Aware (CCA) coaches provide coaching following initial ratings and work with sites to develop a quality improvement plan.	CCA provided an estimate of $157.00, on average, per hour of coaching in 2019. This estimate includes the total cost of coaching including payroll and administration. For all sites in our sample, we apply this cost to each hour of coaching observed—*after a site's initial rating*—to PRISM records on coaching events provided by CCA.
Need-based grants	Both unrated sites and sites that are rated at Level 2 and meet certain additional qualifications may apply for grants to support making quality improvements.	DCYF supplied information on needs-based grant awards during our study period, including site, date, and award amount. We include in our cost estimates only grants awarded following sites' initial rating.
Quality improvement awards	Quality improvement awards are a post-rating incentive. Awards are tiered, with higher-rated sites receiving a higher annual award.	DCYF supplied information on quality improvement award amounts during our study period, including site, date, and award amount. We include in our cost estimates all awards made during our study period.
Tiered subsidy reimbursement	Tiered subsidy reimbursement is a post-rating incentive and is also intended to compensate for the potentially higher cost to providers of maintaining high-quality care. Tiered reimbursement rates vary by type of care (family home vs. center) and rating and have changed over time.	DCYF was unable to provide administrative records on tiered subsidy reimbursement (TR) payments due to staff workload/capacity issues. We approximate TR payment amounts using monthly subsidy payment data and apply the appropriate per unit base payment rate and TR payment rate according to the date of service.

Exhibit A7

Cost Components Not Included in Per-Child/Per-Year Estimates

Cost component	Description	Reason for not including
General program administration	DCYF leads the administration of EA and incurs staff and administration costs for program and policy development, EA participation monitoring, and data management.	General program administration costs are not tied to specific sites, and as a result, cannot be assigned to program or comparison group costs.
Pre-rating coaching	Child Care Aware staff provide technical assistance and coaching, or rating readiness consultation, prior to sites' initial ratings. Coaching staff help prepare sites for the rating process, with the goal that sites will request their rating when they are ready to meet quality standards.	Baseline site quality information was not available. Without that information, we cannot account for pre-existing variations in site quality. Additionally, because sites have not yet been rated, it is not possible to assign these costs to the program or comparison group.
Infant-toddler consultation *	Sites serving infants and toddlers receiving subsidy payments may be eligible for classroom coaching by an infant-toddler coaching team. As of March 2022, this work was being conducted by ten contracted teams across the state, with approximately 30 contractors at 0.5 FTE.	Site-level records on the number of infant-toddler consultation hours are not available. Contractors are not required to systematically record these data in a shared data system and do not have access to the required training and support infrastructure for this level of record keeping.
Professional development scholarships and grant awards	Educational grants and scholarships are available to pursue stackable certificates, associate degrees, and bachelor's degrees in Early Childhood Education. Staff employed in EA programs are prioritized for awards. In the 2019-20 school year approximately 6.5 million dollars in relevant grants and scholarships were awarded to 2,300 students.^	Site-level records are not available. Awards are made to individual students/staff, not to sites. The State Board of Community and Technical Colleges reports aggregate award amounts, the number of recipients, and the types of EA sites (e.g., ECEAP program, family home child care) where they are employed at the time of the award.

Notes:

*Information on infant-toddler consultation staffing and record-keeping provided by R. Garzon, DCYF QRIS Special Projects Lead (personal communication, March 11, 2022).

^DCYF administrative data.

V. Process for Calculating per Child/per Year Costs

This section elaborates on the methods for processing and integrating the cost data outlined above to ultimately calculate per-child/per-year costs for program and comparison groups.

Step 1: Start with Site-by-Month Cost Data
Use site-by-month cost data to account for the fact that sites could switch from the comparison group into the program group.

Step 1a: Tiered Subsidy Reimbursement
This data was in a site-by-month format to account for random rating dates throughout the sample. This is especially important for calculating the tiered subsidy reimbursement (TR) costs as the amount of additional TR is contingent on the rating a site has in a given service month. TR rates are also dependent on the region, the age of the child attending care with subsidy, and whether the child is enrolled in half- or full-day care.

Our TR cost measures additional reimbursement, over and above the base subsidy reimbursement rate. Additional reimbursement is the subsidy base rate multiplied by the tiered reimbursement rate. There are full-day and half-day reimbursements since full and half-day care have different base rates. The half-day base rate is half of the full-day base rate, so the half-day additional reimbursement was calculated by dividing the full-day reimbursement by two.

Step 1b: Post-Rating Coaching
CCA estimated the coaching cost to be $157.00 per hour in 2019 dollars. Each hour of coaching observed at a site is multiplied by the per-hour rate and that cost is applied to the treatment or control group depending on the rating the site had when the coaching occurred.

Step 1c: Needs-Based Grants
DCYF provided data for this cost category. The costs incurred by needs-based grants were applied to the treatment or control group depending on the date they were given to sites and the ratings of the sites at the time.

Step 1d: Quality Improvement Awards
DCYF provided data for this cost category. The costs incurred by quality improvement awards were applied to the treatment or control groups depending on the date they were given to sites and the ratings of the sites at the time.

Step 1e: Data Collection
Cultivate Learning estimated the cost of rating a site to be $3,876.59. This cost was applied to a site the month after the rating occurred and the cost was allocated to the treatment or control group depending on the rating of the site on that date.

Step 2: Sum Costs by Year by Group
Aggregate site-by-month data to the yearly level for each cost and site. In years where a site had multiple ratings, multiple observations for that year were created along with a variable indicating how many months that site was in the treatment or control group during that year.

Step 2a: TR Annualization
Prior to converting costs to 2019 dollars (Step 3), the TR costs were annualized. They were annualized to avoid differences between sites that were not in the treatment or control group for the full year being observed.

Step 3: Convert All Costs to 2019 Dollars
Convert all costs to 2019 dollars using IPD-PCE.

Step 4: Calculate Total Costs Per Year by Site and Group
Sum all costs together into a yearly total cost for each site.

Step 5: Calculate the Total Cost by Site by Year by Group by Child
Divide the total site cost by the average number of kids at that site to get the cost per child.

Step 6: Average by Group, across Site and Year
Average site costs across program and comparison groups.

Acknowledgments

The authors would like to thank the staff at DCYF, ERDC, Child Care Aware of Washington, and Cultivate Learning at the University of Washington, for their assistance in understanding Early Achievers and the child care and early learning landscape in Washington State and for their support in obtaining administrative data to facilitate WSIPP's evaluation. OSPI and DOH also contributed data to WSIPP's evaluation. In particular, we thank Rachael Brown-Kendall, Kevin Cummings, Kelli DeBoer, Roxanne Garzon, Joyce Kilmer, Ashley McEntyre, Jennifer Norris, Sara Schwartz Jewell, Kelcy Shaffer, and Warren Wessling at DCYF; Tom Aldrich, Tim Norris, and Bonnie Nelson at ERDC; Karen Sampson and Sarah Kelley at Child Care Aware; Johnna Lee, DeEtta Simmons, and Gail Joseph at Cultivate Learning; and Lucas Snider at OSPI have graciously answered many questions about programs, data, and WSIPP's evaluation. Vickie Ybarra, Rachael Brown-Kendall, Kevin Cummings, Nate Adams, and Chasya Hoagland provided helpful comments on earlier drafts of this report. We thank Heather Grob, Devin Bales, and Michael Hirsch for their contributions to WSIPP's benefit-cost model and our analysis of projected benefits.

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