**Mechanics of Coaching**

*The past, present, and future of coaching in Washington Quality Rating Improvement System (QRIS) - Early Achievers: System actors’ perspectives and thoughts for next steps*

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**Abstract**

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*The past, present, and future of coaching in Washington Quality Rating Improvement System (QRIS) - Early Achievers: System actors’ perspectives and thoughts for next steps*

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Chair of the Supervisory Committee:

Dr. Gail E. Joseph

In this study, a sequential exploratory design was applied to inquire about the ontological aspects of coaching and its role in the state of Washington early learning Quality Rating Improvement System (QRIS) - Early Achievers. Researchers in the past have demonstrated positive child level outcomes of instructional coaching and professional development for teachers on certain academic domains yet the link between coaching and QRIS systematic outcomes are still unclear. There is a need to operationalize the definition of coaching and its role in the QRIS system.

By conducting a descriptive analysis using a set of secondary data captured from the state Web-based Early Learning System (WELS) of 2757 site records on coaching objectives followed by general inductive analysis of six interviews of Early Achievers implementation partners, several perspectives on how Early Achievers could reflect measuring success driven by coaching activities are presented in this paper.

The following research questions will be addressed in this study:

* RQ1: What is the holistic overview of the coaching workforce status in the Washington State Early Learning system including the number of coaches, caseloads, and the characteristics of coach demographics - its attrition rate and completion rate of the Early Achievers coach framework training?
* RQ2: What are the characteristics of coaching activities reported on the statewide Web-based Early Learning System?
* RQ3: How can system actors and stakeholders reflect and utilize the currently available information to inform what coaching objectives/approaches are considered effective for WA QRIS?
* RQ4: How can QRIS implementation partners work together to improve the current system supporting coaches and evidence-based coaching practices?

Findings suggest the trend of types of coaching activities have shifted from in-person coaching to virtual/remotes coaching; perspectives from system actors reflected hopes for the upcoming revision of the WA QRIS, and more than ever, there’s a need to build trust and sense of belonging among all stakeholders including families, practitioners, and implementation network partners that multiple coaching approaches are valued in the system.

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**Dedication**

To Hitomi Kariya

for providing unconditional love and support as my life partner and providing extraordinary support during the COVID-19 pandemic as a leading epidemiologist in Washington

To Ei-Hyung Hwangbo, Geun-Yeol Lee, and Ji-Young Park

for also providing unconditional love and support throughout my life

To Eun Hee (Silver) Denton, Mike Denton, and B.B. Denton

for accepting me as a family in Seattle

&

To Young-Hee Lee, my mom

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# Preface

I decided to write my dissertation around coaching and early learning Quality Rating Improvement System (QRIS) not because I’m familiar with this topic, but to understand how and why coaching works from a certain program or a system via conducting a sequential explanatory approach. Researchers have demonstrated the positive impacts of evidence-based coaching in the early learning system in multiple ways. Yet, the sources of evidence lacked how those researchers attuned to the needs of those who are early learning coaches and coachees. It seemed unclear to me how and why those system implementation actors bought into the ideas of an evidence-based coaching process especially in the context of the QRIS. There are many ways to quantitatively describe what is happening, and I really wanted to listen to the needs of the system actors in the Washington QRIS - Early Achievers - especially from those who support the Early Achievers coaches. My approach may not be considered innovative nor projecting future outcomes in a systematic way, though I believe relating the matters of the current system to those in the field deemed much rewarding as a scholar.

# Motivation

Researchers in the early learning system have continuously shown high quality early learning environments are associated with measurable gains in child-level developmental outcomes (Karoly, 2014; Lahti et al., 2015; Soderberg et al., 2016; Zelman & Fiene, 2012). It also became a crucial era in the state of Washington to address equitable access to high-quality care for children under five years old. Early Start Act (Washington State Department of Children, Youth, and Families, 2019) regulations will be fully in place effective by the end of the 2020-2021 school year; stakeholders are working towards providing high-quality access to 90% of all children eligible for pre-K participation in Washington.

The purpose of the proposed study is to examine factors associated with changes in the Washington state Quality Rating and Improvement System (QRIS) for projecting what can be improved with the current existing model of QRIS. As a member of society, I believe researchers have social responsibilities to inform actors in the system including teachers, coaches, directors, administrators, policymakers, researchers, and families for proactive data-driven decision making for sustaining and improving the statewide QRIS – Early Achievers – during this era of uncertainty magnified by COVID-19 relevant crisis.

In the past decade, actors in the state of Washington have prioritized its effort to understand and build consensus around a uniform QRIS service model. Researchers in the state initiated collaborative research-practice-policy partnerships to construct and implement a feasible childcare quality assessment model with community partners (Joseph et al., 2010). Since then, researchers have attempted to inquire and explore different aspects of the Washington early learning system including the relationship between measures of childcare quality and children’s developmental gain (Soderberg, 2014), factors associated with supporting teachers on working with English-Language Learners (Cummings, 2015), validation of a program quality assessment tool (Zeng, 2017) and kindergarten literacy assessment tool (Stull, 2015), a reflection of pre-service teachers’ mathematics practices (Boyd, 2016), and features of early learning coaches communities of practice (Keller, 2017).

The pursuit of building high-quality childcare systems had to be revisited due to the scalability and feasibility of the system. Prior to the COVID-19 pandemic. Washington Office of Financial Management recommended the state legislature and Washington State Department of Children, Youth, and Families (DCYF) - the governing cabinet of QRIS - to revisit the current QRIS to be more agile and cost-efficient; hence, Washington State DCYF (2020) announced it will retire previously used two standardized assessments: the Environment Rating Scale-Revised Edition (ERS-R) (Harms, Clifford, & Cryer, 1998) and the Classroom Assessment Scoring System (CLASS) (Pianta, La Paro, & Hamre, 2008) and implement the Environment Rating Scale-Third Edition tool (ERS-3) beginning July 2020. The current circumstance seems unforeseeable and obscure; however, it also creates a window of opportunity (Kingdon, 1986) for actors of the state QRIS to create a moment of reflection around 1) “What components and aspects of QRIS worked well?”; 2) “What factors can be changed?”; and, 3) “How can we co-create the next era of QRIS that is considered high quality and sustainable?”

One aspect of the early childhood system that researchers can consider is to explore the feasibility of one of the implementation activities: coaching-based professional development. Often, coaching and similar forms of professional development to support teachers to improve teaching practices are hypothesized to bolster young children’s school readiness through continuous quality improvements in the system. As resources, time, and scope the future QRIS system in the state seems obscure, research on three dimensions of coaching can be a crucial aspect to project what would be the best way to sustain the next version of our QRIS.

# Literature Review

This section will address an overview of the Quality Rating Improvement System (QRIS) in the literature, an overview of Continuous Quality Improvement (CQI), and how coaching – a component of CQI – plays a role in the early childhood system.

## Overview of Quality Rating Improvement System (QRIS) and Early Achievers

In November 2009, the Obama Administration announced the enactment of American Recovery and Reinvestment Act (ARRA) of 2009 (U.S. Dept. of Education, 2009) which led to the launch of Race to the Top (RTT) competition. The RTT challenge encouraged transformative change within schools, targeted toward leveraging, enhancing, and improving classroom practices and resources (U.S. Dept of Education, 2009, p.4). Three out of five priorities in the summary report addressed items relevant to early learning communities:

*“Priority 3: Invitational Priority – Innovations for Improving Early Learning Outcomes. The Secretary is particularly interested in applications that include practices, strategies, or programs to improve educational outcomes for high-need students who are young children (pre-kindergarten through third grade) by enhancing the quality of preschool programs. Of particular interest are proposals that support practices that (i) improve school readiness (including social, emotional, and cognitive); and (ii) improve the transition between preschool and kindergarten. Include why it's important to have a high-quality early childhood program”.*

*“Priority 4: The Secretary is particularly interested in applications in which the State plans to expand statewide longitudinal data systems to include or integrate data from special education programs, English language learner programs, early childhood programs, at-risk and dropout prevention programs, and school climate and culture programs, as well as information on student mobility, human resources (i.e., information on teachers, principals, and other staff), school finance, student health, postsecondary education, and other relevant areas, with the purpose of connecting and coordinating all parts of the system to allow important questions related to policy, practice, or overall effectiveness to be asked, answered, and incorporated into effective continuous improvement practices.”*

*“Priority 5: Invitational Priority -- P-20 Coordination, Vertical and Horizontal Alignment. The Secretary is particularly interested in applications in which the State plans to address how early childhood programs, K-12 schools, postsecondary institutions, workforce development organizations, and other State agencies and community partners (e.g., child welfare, juvenile justice, and criminal justice agencies) will coordinate to improve all parts of the education system and create a more seamless preschool-through graduate school (P-20) route for students. Vertical alignment across P-20 is particularly critical at each point where a transition occurs (e.g., between early childhood and K-12, or between K-12 and postsecondary/careers) to ensure that students exiting one level are prepared for success, without remediation, in the next. Horizontal alignment, that is, coordination of services across schools, State agencies, and community partners, is also important in ensuring that high-need students (as defined in this notice) have access to the broad array of opportunities and services they need and that are beyond the capacity of a school itself to provide.”*

To sum up the above priorities stated on the grant application, in order for a state to win the Race to the Top Early Learning Challenge (RTT-ELC), clear guidelines on early learning system outcomes, building infrastructure for data monitoring systems, and designing a P-20 alignment throughout the state education system was needed.

In Washington, as a response to the federal request for proposal, Joseph et al. (2010) from the Childcare Quality and Early Learning (CQEL) Center at the University of Washington (UW) partnered with the governing agency (Department of Early Learning [DEL]), Thrive by Five Washington (Thrive), and 93 participating sites across the state, which later become the Washington’s version of Quality Rating Improvement System (QRIS), Early Achievers. The pursuit and dream of having high quality early childhood programs began in 2009 (Joseph et al., 2010). Training and coaching intervention were provided to the pilot sites as well as Joseph’s group (2010) articulated baseline results by highlighting the needs for policy and programmatic efforts to support providers. As baseline data suggests, Joseph et al. (2010) noted “especially from programs that are characterized in low feedback loops, scaffolding for children who are having a hard time understanding a concept, queries that prompt children to explain their thinking; discussion and activities that encourage analysis and reasoning, integrating concepts, and advanced language modeling were found” (p.42). Despite there are many factors and logistical items that needed to be addressed, after iterations of additional rigorous analysis, in 2011, Washington became one of the nine states receiving the initial grant of $60,000,000 (DCYF, n.d.; U.S. Department of Education, 2011 - CFDA #84.395) for Phase 1 (U.S. Department of Education, 2011). Shortly thereafter, Early Achievers system - the framework for high quality early childhood system - was launched across the state as a QRIS in the state of Washington.

Shilder (2019) defined QRIS as the following:

*“...systemic approach to assess, improve, and communicate the level of quality in early and school-age care and education programs. According to the U.S. Department of Health and Human Services (DHHS), QRIS are similar to rating systems for restaurants and hotels in that they award quality ratings to early and school-age care-and-education programs that meet a set of defined program standards. By participating in a state’s QRIS, early and school -age care providers embark on a path of continuous quality improvement. In Washington State, the QRIS, called Early Achievers, was designed for programs serving children prior to school entry. The state began developing the school-age QRIS in 2015” (p.4).*

As a governing/resource network of an early childhood Quality Rating Improvement System (QRIS) in the United States, BUILD Initiative (BUILD, 2013) provides support for states on how to create a framework for building a high-quality rating and improvement system. BUILD (2013) highlighted a comprehensive and successful implementation of QRIS will support program quality comparable across the system, create standards to the program standards, solidify the infrastructure for supporting quality improvement as well as assessing achievement throughout the process of Continuous Quality Improvement (CQI). As of December 2020, 65 QRIS programs exist in the United States and its territories including California and Florida that have structured county/regional level QRIS (BUILD, 2020) and Washington is one of the partner states of QRIS (See Figure 1 for more information). Although BUILD serves as a national resource network for QRIS, each state was responsible for coming up for its own statewide QRIS (U.S. Dept. of Education, 2011 - CFDA #84.395). The grant’s (U.S. Dept. of Education, 2011 – CFDA #84.395) eligibility criteria may have influenced the structures of current statewide systems. As stated on the *Selection Criteria – A. (i)* *State Success Factors of the grant* (U.S. Dept. of Education, 2011 – CFDA #84.395), the applicant – state – was responsible for articulating comprehensive and coherent agenda to articulate how the initiative would benefit improving student outcomes statewide and how it’s clearly linked to achieving such goals.

As the QRIS supports multiple aspects of the early learning system, Zaslow and Tout (2014) synthesized the unique characteristics of QRIS including its goals, activities, and outcomes associated with the system initiatives. The authors (Zaslow & Tout, 2014) described four distinctive themes of QRIS that were introduced in its early phase (early 2000s to mid-2010) including QRIS as a hub to support multiple layers of interventions, majorities of activities for supporting QRIS are illustrated as system-level activities, links between QRIS system quality features to the child-level outcomes, and levels of QRIS implementation. Despite there’s no single model of QRIS, the following five components can generally be found in a QRIS model (Paulsell et al., 2013):

* *Quality standards*
* A process for *assigning ratings* based on quality standards
* A process for *supporting providers* in quality improvement
* *Financial incentives*
* *Dissemination of ratings*

Paulsell et al. (2013) defined ***quality standards*** as “an aspect of quality that the QRIS is trying to promote” (p.271). These categories of quality standards can be classified into licensing compliance, ratio and group size, safety, curriculum, environment, child assessment, qualifications for workforce, family partnerships, administration and management, accreditation, provisions for children with special needs, community involvement, and cultural and linguistic diversity. Paulsell et al. (2013) also added that although the system aims to support child level outcomes, the link between child level outcomes to QRIS standards lacks from the literature (Tout et al., 2010; Isner et al., 2011; Kirby et al., 2011; Malone et al., 2011). ***Assigning ratings*** are based on documents and evidence gathered through review of a care provider’s on-site documentations, credentials, or any information captured via site observations (Paulsell et al., 2013). Similar to those available from hospitality or restaurant industries, a care provider can receive a rating from one- to five- star rating. Assessors for these activities are mostly employed by external entities (i.e. higher education institutes) and inter-rater reliability with clear articulation of what’s expected from each level of ratings are prescribed by a state governing agency (Paulsell et al., 2013). ***Quality improvement***includes a strategic plan of an individualized quality improvement plan for QRIS programs to prepare their participation for the QRIS (Isner et al., 2011; Paulsell et al., 2013; Smith et al., 2010). The topic for quality improvement varies based on the needs of a site. These could include navigation of the QRIS, rearranging classroom layout, support for curriculum implementation, or working on a particular domain based on a quality assessment tool guidelines (Paulsell et al., 2013; Tout et al., 2010). Similar to the effect of implementing a quality standard to a care, the activities of quality improvement have not been linked to the strategies that are considered effective/evidence-based practices as there are many unknown variabilities within a site which could lead to inconsistent plan for visits, support for modeling instructional practices, as well as resources for technical assistance (Paulsell et al., 2013; Smith et al., 2010). ***Financial incentive*** plays a role in a QRIS to support or reward quality improvement for reimbursement of the cost, bonus payments for providers for a higher quality level that they have achieved (Tout et al., 2010; Paulsell et al., 2013). *Tiered reimbursement* is a type of QRIS financial incentives which provides higher subsidy rates to QRIS participants who have met higher tiers or levels in the QRIS and potentially cover the proportion of the cost to parents (Paulsell et al., 2013). *Scholarship, wage enhancements, and retention bonuses* are other types of financial incentive promoting for continuous quality improvement and continuation for high quality at a program which encourages providers in a program to attain higher educational degrees or recertifications (Adam & Compton, 2011; Gaylor et al, 2009; Gaylor et al, 2010). ***Dissemination of ratings*** is the last component of a QRIS model. As participation in a QRIS program is voluntary in most states, Paulsell et al. (2013) emphasized the need for recruiting providers to participate in the system by gathering preliminary data including participants’ buy-in and engagement around the system as well as involving parents for communications as well. Again, additional research could help the field to understand what best motivates and supports providers and parents to join a QRIS program (Paulsell et al., 2013).

***Early Achievers***, the Washington’s version of QRIS, was developed to support early learning programs offer high-quality care that supports learning and development of children (DCYF, 2020). Administered by the Washington State Department of Children, Youth, and Families (DCYF), Early Achievers is one of the key strategies in Washington to support children to start school ready to succeed (DCYF, 2020). As stated on the *Early Achievers Participant Operating Guidelines* (DCYF, 2020), despite participating in the Early Achievers is considered voluntary, programs funded via federal grants (i.e. state-funded Pre-K programs) and participating sites receive incentives such as support from strength-based coaching, opportunities for applying grants (i.e. needs-based grant for up to $750 for Family Home Child Care; $1,000 for Child Care Center), and dissemination of ratings information that summarizes results of the site-level quality care assessments such as Environmental Rating Scales (ERS; Harms et al, 1998) or Classroom Assessment Scoring System (CLASS; Pianta et al., 2008).

Key partner agencies in the Early Achievers system consist of the *Department of Children, Youth, and Families (DCYF), Child Care Aware of Washington (CCA of WA),* and *the University of Washington Cultivate Learning (UWCL)*. Form in July 2017, the *DCYF* was formed to consolidate state’s emphasis on providing high-quality learning experiences for all children by merging the Department of Early Learning (governing body of Early Achievers), the child welfare system (governed by the Department of Social and Health Services [DSHS]), and the state juvenile justice system (Shilder, 2019). *CCA of WA* is the state’s largest non-profit employer of coaches providing childcare resource and referral network support for families to access childcares across the Washington state as well as training, technical assistance, and coaching in Early Achievers programs (Shilder, 2019). *UWCL* provides quality assurance monitoring, research support, and professional development opportunities by providing foundational trainings such as Coach Framework Training to Early Achievers coaches, Early Achievers Institutes, and coaching tools such as the Coaching Companion application (Shilder, 2019). Shilder (2019) added Cultivate Learning acts is a hub between research and practice.

## Validation in Center-based Programs to Process Inquiry in Family Childcare Settings

After the initial phase of initiation and conceptualization of QRIS (late 1990s to early 2010s), research around QRIS implementation was slowly growing. This includes linkage between financial incentives and its association with participation rate (Hallam et al., 2017; Tan et al., 2020), how the structure of a QRIS model addresses aspects of child level outcomes (Tout et al., 2020), process for continuous quality improvement and the impact of coaching to QRIS (Isner et al., 2011; Smith et al., 2010; Zeng et al., 2020), or understanding and evaluating the initial implementation phase of the QRIS (Boller et al., 2015).

It isn’t surprising to see most of the studies conducted on QRIS are mostly around validation studies of the QRIS implemented at a state level in the initial QRIS implementation period between 2010 to 2015 (Hong et al., 2015; Kirby et al., 2015; Lahti et al., 2015; Soderberg et al., 2016; Zellman & Karoly, 2015). This may be due to factors highlighted by Boller and Maxwell (2015) as two of the required evaluation activities in the Race to the Top Early Learning Challenge (RTT-ELC) grant application (U.S. Department of Education, 2011 - CFDA #84.395) were “(*1) validating, using research-based measures, whether the tiers in the State’s Tiered Quality Rating and Improvement System accurately reflect differential levels of program quality” and (2) “assessing, using appropriate research designs and measures of program progress. the extent to which changes in quality ratings are related to children’s learning, development, and school readiness”* (p.349)*.* Boller and Maxwell (2015) added some of the strengths and weaknesses of the current wave of QRIS studies and it was interesting to see some of the limitations of the current waves of studies including inquiring information about “the process of implementing a QRIS, quality improvement strategies, or systems change” (p.340). QRIS states will not have time nor financial capacities to inquire about implementation practices which will create uncertainty around effective ways to motivate participants to join a QRIS or what roles or processes of quality improvement features or system change are addressed in the QRIS (Boller & Maxwell, 2015).

As a community-oriented researcher, I was alarmed by the above statement. The current state of QRIS research lacks understanding of how continuous quality improvement or features of system changes addressed by different actors of a system contributes to outcomes observed from a QRIS. Changes in QRIS are considered long-term implementation processes which may take two to four years for a full implementation if it’s constructed well-defined, researched, and constructed to meet its initial goals (Bierman et al., 2002; BUILD, 2017; Fixsen et al., 2001; Panzano & Roth, 2006; Prochaka & DiClamente, 1982; Solberg et al., 2004). Change in an educational setting is hard (Fullan & Stiegelbauer, 1991) and people’s tendency to refuse change in a program creates risk for QRIS partners, and it makes communication as an essential activity (Wilford et al., 2021) in creating a research-practice partnerships (McLanahan et al., 2021). As studies conducted in early childhood settings always had its foundation in research-practitioner partnerships (Bassok et al., 2021), without knowing activities and processes implemented by actors in the system, it would be harder for researchers and general audience to understand what is truly happening when a program implements a QRIS without knowing the context of implementation for change. The current challenge relates to how Krauez (2020) defined *adaptive change* (Heifetz & Linsky, 2002) of systems which lacks clarity around what needs to be changed and requires stakeholders in a system to change their attitudes, behaviors, and values. It is easier to address those known *technical change* (Heifetz & Linsky, 2002; Krauez, 2020) of QRIS items by adding accessible resources and procedures. Yet as literature (Spillane et al., 2002; Fullan, 2011) describes people are inherently refusing to change with new activities, limit their capacity for changes, and especially if there’s unclear consensus around what’s considered expected activities, it will be more likely to collide with people’s pre-existing interests and agenda (Krauez, 2020). Therefore, it is always important to provide transparent information around what’s expected which reduces chances for new information to be interpreted as intended (Spillane et al., 2002).

Lahti et al. (2015) shared that QRIS standards are often complex and contain multiple components and measures with its variation by state. Lahti and the colleague (2015) believe it’s important to carefully address and identify outcomes or the goals for validating a QRIS. The authors added QRIS is a process that requires multi-step approaches and based on the design of a program quality standard and strategies for how to measure those goals. The result may vary to provide accuracy and how the ratings represent the quality of such measure. Lathi et al. (2015) stated if a state’s goal is to understand and measure the physical health of a child, it is inappropriate to use some of the common global child-care quality assessment tools such as CLASS (Pianta et al., 2008) or Environmental Rating Scales (ERS; Harms et al., 2005).

Lahti et al. (2015) also contributed to the field by suggesting four approaches to validating a QRIS referencing the work in Indiana and Maine. The first approach is “*Examining the validity of key underlying concepts*” (Lahti et al., 2015, p.282) by assessing whether the components and standards of QRIS are measuring it’s intended outcomes. Lahti et al. (2015) added both Indiana and Maine partnered with university-based researchers to conduct validation research, yet the models were slightly different in each state. As QRIS standards in Indiana (Paths to Quality, 2008) were created based on a local community-based model followed up by a state committee modification whereas Maine (Quality for ME, 2008) aligned with program-specific national accreditation standards. The second approach is about “*Examining the measurement strategy and psychometric properties of measures used to assess quality”* (Lahti et al., 2015, p.282) which can be a typical study you’ll find around examining the relationships and the feasibility of some of the assessment tools (i.e. ERS or CLASS) and its intended outcomes. The third is “*assessing outputs of the rating process* (Lahti et al., 2015, p.282)” by illustrating the growth of a program based on its type and how its rating level has changed over time. The last approach is “*examining how ratings are associated with children’s outcomes*” (Lahti et al., 2015, p.282). This could be conducted via conducting a regression study or deriving a sort of association by child level assessments (i.e. Teaching Strategies GOLD) or documentations a child’s progress on a learning domain. Lahti et al. (2015) also added few QRIS validation studies incorporate QRIS and its role to children’s learning outcomes, and often challenging to conduct such study (Elicker & Thornburg, 2011). As I reflect suggestions from Lahti et al. (2015), it was clear that there’s a lack of interest or understanding from the field around why these QRIS activities are happening and what works better at which level by whom and as Lahti et al. (2015) noted, limited information about how providers process QRIS outcomes from summary ratings are still unknown (Lugo-Gil et al., 2011; Tout et al., 2009; Zellman et al. 2008). Reflecting on Lahti’s (2015) comment, I also felt the current literatures do not address how actors in the system process QRIS outcomes information.

Despite the findings of QRIS and its association to child level outcomes are weak and require further examination of the impact of QRIS in the literatures (Sabol et al., 2013; Sabol & Pianta, n.d.; Hong et al., 2014), several researchers suggest positive impact of QRIS implementation across a system, especially in a school-based/center-based programs. For instance, Early et al. (2007) described the importance of improving the effectiveness of early childhood education system as a whole by providing a wide range of professional development and targeted support (i.e. coaching) for teachers’ interactions with children. Hamre & Pianta (2005) reported increasing level of support for instructional and emotional support for teachers in a first-grade classroom increases the emotional support and instructional support domains observed by CLASS assessment tool (Hamre & Pianta, 2001). Researchers (Yazejian & Iruka, 2015) also demonstrated scholarship amounts received by staff at childcare centers yield positive outcomes to quality change in center-based programs.

On the other hand, in the past five years (2016 - 2021), researchers (Bromer et al., 2020; Tang et al., 2020; Zeng et al., 2021) attempted to address and inquired the implementation process including activities around continuous quality improvement or professional development especially with family childcare programs. Family childcare homes (FCCs) are known by different names depending on state regulations or geographical regions (ACF, n.d.). Administration for Children and Families (n.d.) reported a FCC program can be classified as a small or large program and often limits number of infants and toddlers access to the program. FCCs account for the largest proportion of programs across the United States early childhood system (NSECE, 2014) yet relatively little research was done on understanding strategies to support FCC providers to improve their quality-care practices (Bromer et al., 2017). Nevertheless, below represents what’s currently known about QRIS and FCCs and its impact in QRIS.

Tang et al. (2020) demonstrated the impact of Delaware’s QRIS - Delaware Stars. Tang and the colleague (2020) hypothesized there could be an association between financial incentives, on-site technical incentives that influence change in the Family Child Care Environment Rating Scale Revised (FCCERS-R, Harms et al. 2007) subscale scores among 139 Family Child Care (FCC) participating in the Stars program over time. The study found FCC programs that received more financial incentives (i.e. grants) and those who participated in the on-site technical assistance showed greater growth over time from two time-point assessments in FCCERS-R composite scores (Avg. subscale score from 3.78 - 5.52 to 4.99 - 6.35) (Tang et al., 2020). This was similar to the findings suggested earlier (Yzejian & Iruka, 2015) that scholarship and on-site technical assistance (i.e. coaching or professional development) have been shown improved quality in classroom practices and its quality (Isner et al., 2010; Snell et al., 2013). Hallam et al. (2017) found similar results from examining the QRIS participation rate among FCC providers in Kentucky and Delaware and addressed the perspectives from FCC providers via mixed-methods study. From focus group sessions, participants shared the benefits of QRIS participation as 1) quality improvement, 2) professionalism (i.e., increasing sense of professionalism in the field) 3) increase in enrollment (i.e. QRIS increases the number of new families interested in the program), 4) financial incentives and 5) technical assistance support (i.e. coaching/technical assistance by QRIS technical assistance specialists) (Hallam et al., 2017).

One of the most recent studies of how QRIS score has changed among participants based on the impact of technical support and continuous quality improvement comes from Zeng's group (2021). Zeng et al. (2021) worked with Family Child Care (FCC) professionals in the state of Massachusetts. The research team focused on empowering FCC professionals by providing cohort-based business and entrepreneurial leadership training in addition to the coaching sessions with resources for 34 high poverty neighborhood FCC professionals (Zeng et al., 2021). By adapting the Bromer and Korfmacher (2017)’s conceptual model, Zeng and the colleagues (2021) demonstrated results of implementing the Small Business Innovation Course (SBIC) supported “significant pre–post differences and a large effect size for business management self-efficacy at the construct level (M =1.45, SD =0.95, p<0.001, d=1.53)” (p.33). What was more interesting to me was the comment provided by a research participant that the participant is ready and equipped to prepare a financial decision-making including budgeting and plans for quality improvement (Zeng et al., 2021).

Finally, Bromer et al. (2020) argued despite FCC providers accounts for providing majority of the infrastructure and services in the early childcare system, policy makers often leave FCC from the equation for policy initiatives. As the requirements for licensing, QRIS, or other federal/state/local regulations increased over time, Bromer et al. (2020) stated the system is not designed with FCCs in mind. Bromer’s group (2020) reminded the loss of FCC programs may be caused by the current system structure as well as lack of scientific evidence nor strategies around engaging and retaining FCC providers other than what’s already known from previously inquired works of the Break Through Series (BTS) collaborative model (Daily et al., 2018) or implementing small-scale changes using the Plan Do Study Act (PDSA; Berkel et al., 2019; Byrk et al., 2015; Conradi et al., 2011; Deming, 1986; Lynn et al., 2007; Shewhart, 1931). This seemed to link with concerns reflected in the earlier implementation of QRIS in Minnesota. Participants in the initial QRIS programs in Minnesota have shared concerns that additional information on QRIS is needed (Iruka et al., 2010) and opportunities for family childcare providers who are linguistically and culturally diverse are lacking (Tout et al., 2008). To sum up, what’s currently available from literature consist of QRIS implementation outcomes found at a center-based/school-based programs and researchers are inquiring what’s also working at a family childcare setting. What’s still unclear to me is how the QRIS incorporates CQI as a change factor and I hope to address it in the following section.

## Overview of Continuous Quality Improvement (CQI)

The work to initiate and implement a high-quality Quality Rating Improvement System (QRIS) (BUILD, 2013) wasn’t too different from how Goffin and Washington (2013) described challenges and next steps for the early childhood education system in the United States. In QRIS, Continuous Quality Improvement (CQI) is defined as an internal process of ownership by the team in the program to leverage change internally within a QRIS program (BUILD, 2013). Especially for the statewide level of CQI, it is crucial to form inter-agency partnerships to strengthen the QRIS system and establish a feedback loop to stay connected with the ECE communities regionally. Implementing a CQI approach shifts from a stakeholder’s perspective by reflecting, learning, and committing to strive for high quality programs rather than complying with guidelines and standards regulated by external systems (BUILD, 2017). By having a culture of proactive decision-making processes instead of a reactive action on incidents, BUILD (2017) stated the approach grows transformational leaders and encourages the leaders to equip change management skills such as inclusive communications, team management, and using data and evidence for decision making processes including co-creating goals and quality improvement plans. As an element often illustrated in a “house” framework, researchers (Bloom, 2015; BUILD, 2017; Keller, 2017; Sandall & Joseph, 2010) described CQI and element of that holds everything together. As noted by Ann Hentschel (BUILD, 2017), CQI is what keeps “organizations thriving” (p.4).

The *Early Achievers Participant Operating Guidelines* (DCYF, 2020) also noted the agency’s (DCYF) emphasis on Continuous Quality Improvement (CQI). DCYF (2020, p.1) and described CQI as an ongoing process of learning and reflecting opportunities for growth using multiple information, and intentional commitment to quality improvement practices including following:

* *“Creating a plan with goals, timelines, and action steps”*
* *“Testing and implementing solutions”*
* *“Evaluating the results and revising the plan”*

As a system-wide activity, CQI is also well represented in a case study conducted by the BUILD foundation (2017). Wong (BUILD, 2017) described the focus for system level CQI for Palm Beach leadership was to reflect practice to navigate from an “agency-centric” to a “provider-centric system” (p.18). Various types of strategies were used in the Palm Beach case. These include surveys to inquire and collect data on CQI culture, standards, and change, Communities of Practice (CoP; Wenger, 2006) – “*groups of people who share a concern or passion for something they do and learn how to do it better as they interact … in short, a shared practice” (p.1)* – for technical assistants and professional development specialists every six weeks, and implemented the Strength, Weakness, Opportunities, and Threats (SWOT) assessment (MindTools, n.d.) to integrate CQI in new QRIS model (BUILD, 2017).

Despite the structural, contents, or characteristics of Communities of Practice (CoP; Wenger, 2006) is still unknown, CoPs are often considered one of the professional development strategies for coaches to enable and share feelings of isolation (Bradley, 2004; Gebbie et al., 2012; Puig & Recchia, 2008) and provide empowerment to coaches (Hoffman et al., 2009; Keller, 2017). Buysee et al. (2003) points out every community of practice has its own cycle and ability to harmonize new members of a system to enter the community and engage with peers who serve as exemplar models in the system. CoPs foster welcoming environment and support learners in a community to be fully engaged in their learning communities (Puig & Reggia, 2008).

Similar practices have been observed in the Early Achievers via monthly webinars. Keller (2017) described participation in the Early Achievers monthly coach webinar is recommend and encouraged yet not required. It serves as mode for interactive discussion sessions, informational/communication channel, and coaches to share their insights on a given topic in the month (Keller, 2017). There was no record that was available to public what contents were covered in the Early Achievers CoPs, yet per a personal conversation with Keller in 2019 – the formal host of Early Achievers webinar until 2018 – the webinar was held once a month from September to May in a given school year for about one and half hour for each session. It seemed examples of the CQI activities were still unclear to me how it’s playing a role as a system-wide activity and why It’s considered important in QRIS.

One feature of CQI that was found in the policy and system implementation literatures include strategies from implementation science relieving some of the alignment issues addressed by systems researchers (Carr et al., 2019; Franko et al, 2018; Stipek et al., 2017, Kauerz, 2020; Halle et al., 2013). Despite the term system lacking its precision and conceptuality defined in the educational setting, systems help actors to achieve reduced duplication of efforts, improved effectiveness across implementation agencies’ efforts, and achieve higher quality in care (Kauerz, 2020). The governing body of early childhood QRIS - BUILD (2013) - acknowledged the initial work around QRIS across the United States were focusing on “ratings, accountability, and monitoring of early learning programs” (p.1). There have been shifts around the transition to strategizing quality improvement processes and providing support in combination of data-driven Continuous Quality Improvement (CQI) processes after its initial introduction (BUILD, 2013). As one of the key ingredients and prerequisite to build a successful and sustainable CQI effort (BUILD, 2013), communications and partnerships were by far the most important ingredients in building a successful and working QRIS. For instance, if a goal of a state is to form cross-sector partnerships where the only intersecting themes are standards and compliance, Wiggins & Mathias (2013) noted communications and partnerships serve as bridges to connect with early learning communities to involve two-way communication between programs and QRIS decision-makers; ongoing feedback from programs; and this leads to improvements in QRIS and CQI practices. Transformational leaders who practice change management skills such as inclusive communication, team approaches, and using evidence to inform goals and quality improvement plans implement CQI at a core of a program (BUILD, 2017). CQI in QRIS goes beyond meeting expectations of QRIS guidelines, it supports the team in a program to own the process where the excitement of learning and growing is encouraged (Wiggins & Mathias, 2013). The process helps system actors to enjoy the processes of inquiry rather than finding results for a test.

I think in the Early Achievers system, the monthly webinar serves the purpose for communicating information to coaches then distributed to providers and teachers that coaches work with as a top-down approach. Nevertheless, I am still concerned about what would be the role from the governing body of Early Achievers – the Department of Children, Youth, and Families – if the known channels for information distributions for providers are mostly from Early Achievers coaches.

***Theoretical Origin of CQI***

The current version of how instructional leaders, practitioners, policymakers and researchers address Continuous Quality Improvement in the Quality Rating Improvement System or Early Childhood Education system is originated from the work of improvement scientists and evaluation practice experts’ (Christie, Lemire, & Inkelas, 2017; Daily et al., 2018; Wiggins, & Mathias, 2013) the interpretation of the Deming (1986)’s process improvement work. Deming (1986) is considered one of the most influential figures who demonstrated Shewhart’s Plan, Do, Study, Act (PDSA) cycle (Shewhart, 1931) in business, engineering, and manufacturing fields. The interpreters of the work also expanded the concept of “quality control” in the field of healthcare (Berkel et al., 2019; Conradi, et al., 2011; Lynn et al., 2007) since early-60s and 70s. The concept also evolved into the modern version of improvement science (Byrk et al., 2011/2015; Langley et al., 2009; Lemire, et al., 2017; Perla et al., 2013) and became a branch of work around quality improvement work in an education setting (Daily et al., 2018; Zaslow et al., 2011; Zellman & Fiene, 2012) as a framework of Quality Rating Improvement System (QRIS) in ECE system.

As a pioneer of Quality Improvement in the modern era, Shewhart (1931) claimed the defining components of quality control processes were based on philosophical principles of Aristotle (Kraut, 2018) to perceive quality as “goodness of an object” (Shewhart, 1931, p.37), or could be a mean to explain how a word (i.e. qualis) or a chemical combination (i.e. H2O) as “chemical and physical properties” (Shewhart, 1931, p.38), quality of a certain product or specification, or quality as a “relationship” (Shewhart, 1931, p.49). There could be many ways to interpret what Shewhart really means by “quality,” Shewhart displayed quality can be viewed in four different quadratics of “use, cost, esteem, and exchange” (Shewhart, 1931, p.53). Shewhart (1931) continued and acknowledged that other than the dimension of “use,” there exists variations among cost, esteem, exchange and can be relatively subjective and it could vary widely. The terminology variation would be considered an important topic and will be addressed in the future sections as well.

Another view adopted in the early childhood education quality improvement processes came from the implementation science field, especially from the field of Public Health. Perla et al. (2013) articulated quality control as a form of “science of improvement.” Perla’s group’s articulation of the work Shewhart was closer to perspectives of epistemology (Feldman, 2002) and psychologism (Thagard, 1988) in combination with Shewhart's cycle of Plan, Do Study, Act (PDSA). Perla et al. (2013) stated “improvement has meaning only in terms of observation based on a given criteria (p.171)” and their interpretation embraces different degrees of psychologism (Thagard, 1988) - the study of epistemology via inquiring cognitive sharing and its mechanism similar to how Locke (1996) described. The concept of psychologism as well as its logic can be distinguished into three types: weak; strong, or anti-psychologism (Perla et al.,, 2013). From a weak psychologist perspective, weak psychologism is considered a logic that is prescriptive of mental processes. Strong psychologism possesses a logic that is descriptive of how humans think. On the other hand, anti-psychologism is perceived as a logic that has nothing to do with any mental processes at all, thus shall not be considered in the process of improvement. Perla et al. (2013)’s philosophy of quality improvement emphasized cognitive processes and mental structures of a human being rather than addressing and identifying the steps of quality improvement.

Perla et al. (2010) also claimed the process of quality improvement ties into the reasoning processes based on Dewey (1901)’s definition of knowledge as conscious and voluntary effort to establish belief upon a firm basis of reasons. Similar to the justification of Plato’s “Justified True Belief” model (Ichikawa & Steup, 2018), Perla et al. (2010) wrote “the idea that knowledge is not simply information about the best scientific evidence but rather the intersections of belief and best evidence at the heart of quality improvement” (p.125). Depending on a person’s beliefs or reasoning around one’s quality, this can shift even if it’s considered what scientists claim evidence-based practices, again addressing the philosophical aspects as well as the cognitive perspectives of one’s view in the quality improvement process.

Lemire et al. (2012) praised the foundational work around Deming’s (1986) systems of profound knowledge around the topic. The group (Lemire et al., 2012) summarized the Deming’s cycle via quoting the work of Langley et al. (2009) as 1) Knowledge of systems, 2) knowledge of psychology, 3) knowledge of variation, and 4) knowledge of how knowledge grows. As growing definitions among improvement scientists, Lemire et al. (2012) provided clear terminological distinctions between improvement science and continuous quality improvement. Improvement science is about “developing, testing, implementing, and spreading change informed by subject matter experts” (Lemire et al., 2012, p.25) whereas continuous quality improvement is based on a “data driven change process that aims to systematically design, test, implement, and scale change toward systematic improvement as informed and defined by the experience and knowledge of subject matter experts” (Lemire et al., 2012, p.25). Both definitions included the factors such as “change,” “subject matter experts,” and “knowledge” as the primary ingredients of the work; the only difference of CQI to improvement science that’s noticeable was about the factors “data” and “scalability.” The latter concept of scalability seemed a bit different than the original intent of Shewhart’s work on understanding the processes of the change through systematic inquiries on a smaller scale.

Based on literatures and perspectives from implementation scientists, Continuous Quality Improvement (CQI), evaluation, improvement science, and performance management all share one common theme: any processes of defined CQI activities require specified data sets that are considered high quality and meaningful to drive insights to those who are using the data as a team, a decision maker, a recipient, or a community member. And this isn’t different in the field of early learning especially when it comes to address CQI as a fine-tuned process. Plan, Do, Study, Act (PDSA) (Byrk et al., 2016; Deming, 1986; Lemire et al., 2012; Perla et al., 2010) is an iterative process that promotes quality improvement. PDSA requires three questions:

* In a goal setting stage, we are trying to understand “What are we trying to accomplish?”
* During the measurement process, the team will address “How will we know that a change is an improvement?”
* Last but not least, in the last stage of PDSA, the team would follow up with a question, “What changes can we make that will result in improvement” to demonstrate the outcome of the iterative process.

Two fundamental features (Langley et al., 2009; Lemire et al., 2017) of this work requires improvement from continuous developing, testing, iterations of implementations, and changes; and recognitions of subject matter experts for defining and informing each step of a PDSA.

As noted by Christie et al., (2012, p.14), because the focus of PDSA is local and emphasizing the implementation of “small rapid cycle tests of changes,” data are usually collected by those who are the front-liners of the system such as a physician in a health care system or a teacher in a classroom. The goal is to improve outcomes that are determined by the team members practiced by owners of each process. These are considered concrete front level practices rather than a high-level change such as if someone is trying to pursue a cultural shift or change.

In a general PDSA cycle (Moen et al., 2012), the first step is to clearly state the objective of the PDSA cycle as well as answering some of the corresponding questions. In this stage, the key specification is considering determining how the data will be collected throughout the PDSA cycle by where, when, and whom to develop an “operational plan” (Lemire et al., 2017, p.28). In the second step of the PDSA cycle, implementation is the key component of this stage. Documentation of emerging issues, challenges, or successes are highly recommended, and these are considered steps to ensure transparent and systematic process (Lemire et al., 2017). In the third step, this is a stage where all team members compare and interpret observed patterns in the data and predict the captured information to identify what are similarities and contradictions of what is expected. These are usually done by embedded practices based on “past knowledge and experience (Lemire, Christie, & Inkelas, 2017, p.28).” In the final stage of PDSA, this would be considered as an opportunity to provide additional modification or changes for desirable change before rerunning the cycle again, and it would serve as an opportunity to create a “learning loop, in which iterative rounds of developing, testing, and implementing changes (Langley et al., 2009; Lemire, Christie, & Inkelas, 2017, p.28)” that takes place. Lemire’s group (2017) also ensured that there is no one way of carrying out the PDSA cycles yet highlighted the principles suggested by Langley’s team (Langley et al., 2009, p.145) into three principles of “testing of change (Lemire, Christie, & Inkelas, 2017, p.28)” into the following:

* Principle 1: Test on a small scale and build knowledge sequentially
* Principle 2: Collect data over time
* Principle 3: Include a wide range of conditions in the sequence of tests

In the real-world application of PDSA, these detailed steps may not be considered feasible, and a typical “black box” implementation approach can be found (Howard et al., 2014). For instance, Howard et al. (2014) describes coaching as a “black box” (p.16) in which the inputs are known, and the outputs are improved teaching practice and instructional practices leading to child level outcomes in general. Howard et al. (2014) found coaching was often included in a package of professional development methods (training, in-service) and that the dosage and efficacy of coaching was largely unknown, lacking in detail. I hope to articulate how coaching is illustrated as a CQI activity and how it’s linked to the QRIS context.

**Coaching in Early Learning**

It seems worth noting the current coaching framework applied in the Washington statewide QRIS as well as evaluating the effectiveness of coaching and professional development in the early childhood education system. According to Candace Bixler (2018; referenced by Knight (2009, p.2) as a personal communication) who’s serving as an educational specialist and leader in professional development, Bixler commented, *“What we are doing right now in education is like bringing together successful coaches from varied sports, basketball, gymnastics, football, tennis, and swimming to develop a winning team when we haven’t even determined the sport or the playing field.”* As I reflect on this statement, I felt the comment resonated with the limited information available from literature; on the other the hand, this bring opportunity for educational researchers to synthesize what’s known so far about coaching as noted by Knight (2009), the word “coach” or variations of its terminology has appeared 193 times in the 2007 National Staff Development Council (NSDC) whereas in 1997, only 19 times has appeared. As a consensus in the early childhood system that high-quality professional development yields improved teacher instructional practices that leads to child level outcomes (Diamond & Powell, 201l; Dickinson & McCabe 2001; Goffin & Barnett, 2015; Howard et al., 2014; Snyder et al., 2011; Tarrant & Huerta, 2015), coaching - as core implementation components and one of the activities of CQI and PD - enables change at a QRIS program by creating a culture of sustainability, curiosity, and proactive decision making.

From a broader perspective, coaching can be described as *“partnering with clients in a thought-provoking and creative process that inspires them to maximize their personal and professional potential”* (International Coach Federation [ICF], n.d.). In the early childhood context, National Association for the Education of Young Children (NAEYC; 2011) defines coaching as:

*“a* ***relationship-based process*** *led by an expert with specialized and adult learning knowledge and skills, who often serves in a different professional role than the recipient(s). Coaching is designed to build capacity for specific professional dispositions, skills, and behaviors and is focused on goal-setting and achievement for an individual or group” (p.11).* The definition from NAEYC (2011) was similar to the definition suggested by the federal Head Start agency ECLKC (n.d.) on **Practice-based Coaching (PBC)** - one of the commonly used frameworks for coaching in the early childhood context as well as in the Washington Early Achievers system (DCYF, 2020; Keller, 2017). ECLKC (n.d.) defines PBC as:

*“A professional development strategy that uses a cyclical process. This process supports teachers’ use of effective teaching practices that lead to positive outcomes for children. PBC occurs in the context of collaborative partnerships.”* The framework adopted in the Washington QRIS was also found from the Relationship-Based Professional Development Standards (DCYF, 2019), *“A relationship-based process led by an expert with specialized and adult learning knowledge and skills who often serves in a different professional role than the recipient(s)”* (p.Appendix 1)*.*

Interestingly, the definitions from above references all highlighted partnerships and building relationships, yet it did not articulate how to build collaborative partnerships. It also surprised me that the definitions covered transfer of knowledge and building skills from a cyclical process, yet none included the word “hands-on” which majority of coaching literature references from the work of Joyce & Showers (1982). As stated by multiple researchers (Artmen-Meeker, et al., 2015; Boller et al., 2015; Joo et al., 2019; Paulsell et al., 2013), there’s a need for consensus around defining what’s considered coaching in QRIS. But why is coaching considered necessary for continuous quality improvement? Cornett & Knight (2009) presented findings from two studies (Sanders & Rivers, 1996; Wenglisnky, 2000) that provided a link between teacher quality and student outcomes.

Sanders and Rivers (1996) used the Tennessee Value-Added Assessment System (TVAAS) to understand the long-term results of effective teacher practice to be measured and evaluated by looking at individual student level data. To measure the degree of effect, the researchers (Sanders & Rivers, 1996) compared teacher performance by dividing five quintiles where the first quintile (Q1) presents the least effective teachers whereas the other side of the spectrum, the fifth quintile (Q5) reports the most effective teachers. Sanders & Rivers (1996) then compared the student achievement data on the Tennessee Comprehensive Achievement Math Test for elementary school students over three years of period. Findings suggest students who were taught by Q5 teachers achieved a mean score of 784.9 (96th percentile), while students who only had Q1 teachers for three years had a mean score of 720.2 (44th percentile) (Sanders & Rivers, 1996).

Cornett and Knight (2009) also featured a study from Wenglinsky’s (2000). Wenglinsky (2000) gathered over 15,000 eighth-grade mathematics and science students’ data and hypothesized whether teacher input (i.e. years of teaching, academic degree, and similiarty between courses taught and college major), professional development, or instructional practices affect student level outcomes. By conducting a multi-level structural equational modeling (Kline, 2016), Wenglinsky (2000) found that students who received instructions from teachers who participated in professional development outperformed other students by 107% whereas students who were taught by teachers who majored or minored in math outperformed other students by 39% in mathematics.

Despite both studies (Sanders & Rivers, 1996; Weglinsky, 2000) did not present a statistical significance or fit indices (i.e. AIC, BIC, or RMSEA) to show whether the observed model was considered high-quality model, both examples demonstrated it is important to improve teacher’s instructional practices as its associated with student outcomes (Cornett & Knight, 2009). Although we still do not know how much coaching activities can transform teacher practices, Pierce and Buysee (2014) highlighted the seminal work of Joyce & Showers (1982) which shows a promising impact of coaching in a classroom setting. The authors (Joyce & Showers, 1982) found less than 20 percent of new instructional practices in a classroom setting were implemented due to infrequent and decontextualized training sessions. On the other hand, 80 to 90 percent of implementation of new instructional practices were used by teachers who received ongoing coaching from peers (Joyce & Showers, 1982).

Examples present in the early childhood settings suggest mixed bags of results. For instance, in Head Start programs, Howard et al. (2014) reported three areas of positive effects of coaching including *teacher practice*, *classroom quality*, and *child outcomes*. *Teacher practice* is one area of study that positive impact can be observed from coaching. 22 studies examined by Aikens & Aker (2011) found a positive association between coaching and classroom instruction. For instance, one of the quasi-experimental study (Fiene, 2002) cited by Aikens & Aker (2011) described center-based teachers who received mentoring and coaching for over a period of four months gained improved teacher sensitivity and effective discipline compared to the control group. Another randomized control study (Wasik & Hindman, 2011) for observing teachers’ practices on language and literacy instructions (i.e. phonics, phonemic awareness, and oral language development) suggest teachers who received coaching for nine-month provided more linguistic feedback and modeling to children than the participants in the control group. Other studies provided content-specific classroom instructional practice measures including impact of math/science coaching to improve facilitation of mathematical thinking (Whittaker et al., 2015) and enhancing teachers’ literacy instructional skills (Buell et al., 2018; Bratsch-Hines, et al., 2020; Neuman & Cunningham, 2009).

*Classroom quality* was another area that coaching can demonstrate positive effects (Howard et al., 2014). 27 out of 31 studies that Isner’s team examined (2011) provided positive impact on early learning environment quality which can be observed by Early Childhood Environment Rating Scale (ECERS; Harms et al., 2004) or Classroom Assessment Scoring System (CLASS; Pianta et al., 2008). One of the studies (Conroy & Sutherland, 2018) also found that teachers who have received coaching increased their sense of self-efficacy over time compared to those who did not receive coaching. Conroy & Sutherland (2018) also noted the observed challenging behaviors of children has decreased and over engagement among children has increased which created an overall positive classroom environment.

*Child level* or *learner outcome* is considered the one of the ultimate goals of coaching (Howard et al., 2014; Pierce & Buysee, 2014). However, similar to earlier studies in QRIS (Sabol et al., 2013; Sabol & Pianta, n.d.; Hong et al., 2014), findings present some coaching interventions do not affect child outcomes. For instance, Cusmano et al. (2006) presented a multigroup comparison study of teachers participating in the coursework training and coaching for phonological awareness. The results suggest little to no difference was found between teachers in the treatment group and teachers in the comparison condition with no coaching and training (Cusmano et al., 2006). The literature review examined by Aikens and Akers (2011) also reported 21 out of 35 examined studies provided child outcomes. However, the authors (Aikens & Akers, 2011) cautioned readers as these studies included coaching as one of the activities under the umbrella of professional development and it may be true that coaching alone does not provide much evidence in child level outcomes.

As Artman-Meeker et al. (2015) suggest, coaching in early learning settings is usually administered with a training or a professional development session. No reviews have examined other contextual factors such as how coaches prepare specific coaching components and strategies (Artman-Meeker, 2015), full information on coaching is often missing to understand the contextual variability in a setting (Aikens & Akers, 2011; Isner et al., 2011), and even if the study provides coaching features (Snyder et al., 2012), it is still unclear which coaching strategies have been employed in which degree and dosage that impact child level outcomes (Bean et al., 2010; Gamse et al., 2008).

On the other hand, there’s a body of literature that presents the strongest evidence for what’s considered effective coaching practices to improve teacher level and learner level outcomes (Pierce & Buysee, 2014). According to Pierce & Buysee (2014, p.4), the components of effective coaching practices include:

* ***“Observation”***
* ***“Modeling (also referred to as “demonstration”)”***
* ***“Performance Feedback”***
* ***“Alliance-Building Strategies also referred to as “relationship-building strategies”)”***

***Observation*** is around monitoring teacher practice in a learning environment or a classroom setting. Pierce (2015) defines the primary purpose of observation is to engage a coach to provide coaching practices such as modeling or providing performance (Kretlow & Bartholomew, 2010; Neuman & Cunningham, 2009; Stormont & Reinke, 2012; Snyder et al., 2015). Observation creates a natural environment for a coach to collect data on teacher’s use of evidence-based instructional practices or it may provide opportunities to model an evidence-based practice to teachers (Pierce & Buysee, 2014).

***Modeling*** occurs when a coach demonstrates a practice (Pierce, 2015). Modeling is typically used by a coach when a teacher does not use an evidence-based instructional practice with the learner or does not implement that practice. Pierce & Buysee (2014) described the primary purpose of in-person modeling is to help the teacher how the accurate use of teacher practice impacts the performance of the learner (Kretlow and Bartholomew, 2010; Neuman & Cunningham, 2009; Winton et al., 2015).

***Providing performance feedback*** entails the coach’s presentation and dissemination of observed data to the teacher on their teaching practice (Pierce & Buysee, 2014). Providing feedback is highly effective for improving instructional practices in early learning settings (Artman-Meeker & Hemmeter, 2012; Diamond & Powell, 2011; Shannon et al., 2015; Snyder et al., 2015) and it’s considered most effective when it is “specific, positive, timely, and corrective, if warranted” (Pierce & Buysee, 2014, p.5). Visuals including graphs and charts, and oral feedback are considered one of the most frequently used while delivering feedback (Solomon et al., 2012) and it becomes an effective method to develop goals, action plans, or to support teachers to engage in problem solving processes for implementing new practices (Shannon et al., 2015).

Finally, ***alliance building strategies*** (or ***relationship-building strategies;*** Pierce & Buysee, 2014) play a critical role in building positive relationships between a teacher and a coach. Strong alliance builds a solid foundation for teachers and coaches to work together as a dyad (Ippolito, 2010; Mrax et al., 2008; Neufeld & Roper, 2003; Shanklin, 2006; Snyder et al., 2015; Wehby et al., 2012). In the early childhood system, the alliance building is often refereed as “collaborative partnership” (Snyder et al., 2015, p. 135), a cornerstone for effective and productive coaching and for building relationships across coaches, teachers, and families (Basu et al., 2010; Rush & Shelden, 2011). Examples for building collaborative partnerships include interpersonal skills (Ippolito, 2010; Neuman & Wright, 2010; Walpole & Blamey, 2008), collaboration skills (Neuman & Wright, 2010; Shannon et al., 2015; Vanderburg & Stephens, 2009; Walpole et al., 2010), coach expertise (Cantrell & Hughes, 2008; Chval et al., 2010; Gallucci et al., 2010; Snyder et al., 2015), teacher’s perception around coaching that they may see coaching as an evaluative process (Mangin, 2009; Matsumura et al. 2009/2010; Walpole et al., 2010). Alliance building can also be enforced by empathetic listening, paraphrasing and summarizing information shared by the client during a coaching session, providing helpful resources and feedback on deep content-specific area, and identifying teachers’ goals and needs (Pierce & Buysee, 2014).

Lloyd & Modlin (2012) highlighted different levels of coaching models exist and why coaching is important in early childhood settings. Program-level models (Lloyd & Modlin, 2012) focuses on changing teachers’ behavior by: “(1) building relationships with teachers; (2) observing, modeling, and advising in the classroom; (3) meeting with teachers to discuss classroom practices, provide support and feedback, and assist with problem-solving for classroom challenges; and (4) monitoring progress toward identified goals” (p.3). Lloyd & Modlin (2012) also noted coaching is different than other forms of professional development activities in the typical early childhood settings which include one-shot opportunity such as workshops and trainings. Lloyd & Modlin (2012) highlighted these types of professional development models do not encompass and explore a particular topic in depth (Garet et al., 2001; Lloyd & Bangser, 2009). Multiple studies (Joyce & Showers, 2002; Knight, 2009; Raver et al., 2008) have shown that only implementing a training does not yield improvement in teacher instructional outcomes. Teachers are more likely follow through and implement learned activities consistently with fidelity if it is followed by continuous support from such as coaching (Joyce & Showers, 2002; Raver et al., 2008).

Lloyd & Modlin (2012) further explored the impact of coaching by articulating implementation of curricula (i.e. Incredible years, preschool PATHS, Tools of the Mind) in Head Start programs. One of the findings struck me as the authors (Lloyd & Modlin, 2012) pointed out “communication about the coaching model and objectives needs to occur with everyone who is involved in the coaching process” (p.7) and consider specifying coach hiring and training processes, the role of coaches in the system, what processes would coach follow, and finally, how the system would provide the infrastructure for supporting and supervising coaches. I think above criteria seemed fundamental for infrastructure setup as literatures highlighted types of coaching or what are components of coaching and Lloyd & Modlin (2012) displayed concrete examples of how the different mechanics of coaching can be applied in the early childhood settings.

Another added complexity in the system is around the role of coaches in the QRIS system. Killion (2009) described different roles of coaches and its impact. Killion (2009) stated, “To build relationships and establish their credibility, coaches may compromise their influence by engaging in tasks that have limited potential for impact on teaching and learning… identifying examples of coaching light is not easy since the key distinguishing factor toward the light side include testing students, gathering leveled books for teachers to use, doing repeated demonstrated lessons, finding Web sites for students to use, or sharing with teachers professional publications or information about workshops or conferences” (p.23). Reflecting on Killion’s argument seemed similar in the context of Early Achievers coaches are considered multi-players under the umbrella term - the “Relationship Based Professional Development specialist” who provide “variety of roles that may require different educational background and content knowledge to perform their duties successfully” (p.3). It seemed the clarity on what’s considered role of coaching (Lloyd & Modlin, 2012) was lacking.

Another complexity in the system was observed in one of my previous studies (Hwangbo et al., 2019). Our team (Hwangbo et al., 2019) observed several variations of coaching approaches including coaches who implemented coaching light (i.e. needs assessment) and coaching heavy (i.e. scaffolding) among state funded coaches who are implementing preschool curriculum to fidelity. Yet, I can recall that it was very hard to see concrete examples on coaches are going in-depth with teachers to model or observe instructional strategies as most coaches were assigned as directors of a program as an official role (Hwangbo et al., 2019). Also, despite the state emphasizes the importance of evidence-based practice or data-driven decision making (DCYF, 2020), there exist limited opportunities for coaches to be trained on how to gather relevant information to inform their coaching practices as well as understanding different patterns happening among clients - coachees - in the system (Hwangbo et al., 2019). Participants (coaches) in the study (Hwangbo et al., 2019) reported there’s a lack of support nor understanding around how coaching process was happening among different site conditions and program types; therefore, makes it difficult for coaches to juggle different tasks assigned by Early Achievers guidelines or performance standards if a coach was employed by a state funded program (Hwangbo et al., 2019). As Neufeld & Roper (2003) noted, “... they [decision makers] neglect to address the fundamental questions about why this overall approach to instruction was chosen, how the components fit together, and what its implementation is intended to accomplish. As a result, neither coaches nor principals know why they are being asked to implement what seems like yet another, arbitrarily chosen approach to instruction” (p.12).

So my next question is, what are the key characteristics of coaching featured in Early Achievers system and how does the system support Early Achievers coaches?

**Coaching System in Early Achievers**

Early Achievers employed a similar framework to the PDSA cycle that can be found from the implementation science field and the model presented by Pierce and Buysee (2014). Keller (2017) articulated the six integral structures of the Early Achievers “House” framework and the guiding process for navigating the framework the DCYF report (2017). These include 1) *individualized learning and teaching*; 2) *engaging interactions and environments*; 3) *family engagement and partnership*; 4) *screening and ongoing assessment*; 5) *curriculum and learning opportunities*, and; 5) *professional development and training including Communities of Practice (COP) and coaching*.

DCYF (2017) defined guiding principles as the critical component of the COP and coaching as it compromises as a roadmap or “GPS” that “helps coaches to navigate paths that they travel with providers to the house” (p.6). With its three tenants of culturally responsive coaching, parallel processing, and adult resilience, the guidelines work as a mechanism to provide variabilities around how coaches work with providers that influences the way that coaches interact with providers, for those who interact with children, including families and community members of the society that a child belongs to (DCYF 2017; Keller, 2017). It also seemed very similar to the alliance building strategies presented by Pierce and Buysee (2014) as these guidelines support all stakeholders to build stronger relationship.

Early Achievers coaches are also required to attend two series of workshops once they are hired by their agencies (i.e. Child Care Aware of Washington [CCA of WA] or contractors within Early Childhood Education and Assistance Program [ECEAP] programs) (DEL, 2015). The coach onboarding training is currently held on Schoology platform offered by CCA of WA – the largest employer of coaches in the state of Washington.

or before a two-day training to learn about the Early Achievers coaching model: Practice-based Coaching (DEL, 2015). After initial onboarding with the

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1) Despite more research is needed in understanding how and why coaching works in an early childhood system (Joo et al., 2019; Keller, 2017; Lloyd & Modlin, 2012; Price, 2015; Smith et al., 2012; WestEd, n.d.; Zeng et al., 2021), coaching activities are still considered as an “black box” implementation (Taylor et al., 2016; Walunas et al., 2021) practice (i.e. inputs goes in, something happens, then unclear outputs lead to outcomes) (Howard et al., 2014), intentionality around coaching leads to positive outcomes for teachers and learners (Artman-Meeker et al., 2015, Snyder et al., 2015; Joo et al., 2019; Lloyd et al., 2021; Zeng et al., 2021) .

2) The trend of coaching in the early childhood context (esp. in the QRIS field) has shifted from heavily focusing on supporting curriculum development and its implementation practices from a technical assistance/consultation perspective for coaching to a program (Buysee & Wesley, 2005; Domintrovich et al., 2010; Fox et al., 2013; Neuman & Cunningham, 2009; Snyder et al., 2015; Wasik & Hindman, 2011) to emphasis on building relationships and support network for acknowledging steps incorporating in the process of coaching (Bromer et al., 2009; Halle et al., 2018; Lloyd & Modlin, 2012; Pierce, 2015; Keller, 2016; Zeng et al., 2021).

Another concern of the field around coaching activities and its workforce activities are around data driven decision-making processes. For instance, the newly established state agency, the Department of Children, Youth, and Families (WA DCYF) is an agency that linked former Department of Early Learning - the cabinet unit of early learning QRIS oversight agency with Children’s Administration in DSHS such as Child Protective Services’ investigations and Family Assessment Response, licensed foster care, and adoption support. One of the principles of the new agency (DCYF, 2017) is “a commitment to using data to inform and evaluate reforms, leveraging and aligning existing services with desired child outcomes” (p.5). Using data is something that actors in the Washington early learning system are advised to be mindful at the moment. Yet, the statement was quite disturbing as it was interpreted as the state intended to report out to the public with no evidence from what implementation practices were held.

* Researchers trying to implement a strategy that's working for particular context/school-based programs and usually, coaches get trained on domain-specific strategies for:
  + Improving teaching practice: (Bierman et al., 2008; Clements & Sarama, 2007; Conroy & Sutherland, 2018; Hamre et al., 2012; Kretlow & Bartholomew, 2010; Landry et al., 2011; Neufeld & Roper, 2003; Neuman & Cunningham, 2009; Pianta et al., 2008; Snyder et al., 2015; Stormont & Reinke, 2012) or;
  + Improving student developmental/academic outcomes through improved teaching practices (Bean et al., 2000; Joyce & Showers, 2002; Kretlow & Bartholomew, 2010; Neuman & Cunningham, 2009; Snyder et al., 2015)
* Then when you think about the ECE & QRIS context (as provided by Juliet Bromer's group from Erickson Center, Smith et al., 2012 from NCCP study; Zeng et al., 2021 on MA coaching FCC owners on QRIS), and more concerns arise around Family Child Care providers who receive coaching yet
  + Coaching only offered in English (as many FCC providers are owned operated by Latinx/African Americans whose coach will likely be a Caucasian American; Bromer et al., 2021; Holas-Huggins & Kerwin, 2009; Tuominen, 2003)
  + Needs on coaching are prioritized on activities such as practicality, administrative, funding relevant activities over evidence-based practices for improving instructional practices (Bromer et al., 2021; Porter & Bromer, 2020; Smith et al., 2012; Zeng et al., 2021)
* And there's a bit of system collision, structural issues that perhaps prohibit the implementation or understanding the needs of evidence-based coaching:
  + ECE system itself has "non-system" as each entity has its own system (i.e. Head Start, SPED, state-funded pre-K, city-ran universal preK, QRIS...) which then affect the quality of any practice implemented in a program (Ansari et al., 2017; Bassok et al., 2016; Jenkins et al., 2016; Kagan & Kauerz, 2009; Pianta, 2010; Whitebook, 2014)
  + Since each entity wants to operate as its own; hence, it creates a status of *isomorphism*(DiMaggio & Powell, 1983; Kauerz, 2020)*->*Let's make our cares as Starbucks franchise (well, it looks like that's what QRIS is about based on how it was described in the federal Race to the top application) rather than appreciating the value that each program and work with them to create a better/efficient/effective system.

**END OF REVISION**

Despite the growing body of coaching literature suggests findings in improved teacher practices (Aikens & Aker, 2011; Artman-Meeker et al., 2015; Fiene, 2002; Hindman, 2011), improved classroom quality (Isner et al., 2011; Neuman & Wright, 2010), and child level outcomes (Cusumano et al., 2006; Diamond & Powell, 201l; Dickinson & McCabe 2001; Goffin & Barnett, 2015; Howard et al., 2014; Snyder et al., 2011; Tarrant & Huerta, 2015), I still believe the current body of literature lack information regarding how coaches interpret observations and share the findings to coachees (i.e. teachers, directors, providers, etc). As coaching is often examined with other types of professional development strategies (Howard et al., 2014), the currently available studies also lack findings around what are considered effective strategies that accompanies with coaching especially in QRIS programs (Boiler & Maxwell, 2015; Paulsell et al., 2015; Fox et al., 2019). Finally, what I am most interested in learning more about is the perspectives and decision-making processes of QRIS administrators and leaderships perceptions around coaching and how they use related data on coaching to execute policy and business decisions. Although one study (Smith et al., 2012) examined interview results of 17 statewide QRIS technical assistants, the majority participating programs sampled in the study were regulated childcare centers (91%) whereas in Washington, 59% (2,271 out of 3,845 programs; DCYF, 2021) of Early Achievers participating sites are FCCs. The population and programs that we serve in Washington may not benefit from findings from literature. In-depth quantitative and qualitative inquiries on investigating collaborative processes (Kauerz, 2020) across QRIS, licensing programs, K-12 system, state-funded programs, and city-based universal pre-K programs could potentially benefit by employing such approach to highlight types of events and success stories in program/entity level cases as a case study (Creswell, 2015) and this will provide sequences and relationships happening in various systems-building contexts (Kauerz, 2020).

# Research Questions

Reflecting the concerns and ideas from literature, the current study addresses the following research questions:

* RQ1: What is the overview status of the coaching workforce in the Washington State Early Learning system including the number of coaches, caseloads, and the characteristics?
* RQ2: What are the characteristics of coaching activities reported on the statewide Web-based Early Learning System?
* RQ3: How can system actors and stakeholders reflect and utilize the currently available information to inform what coaching objectives/approaches are considered effective for the WA QRIS?
* RQ4: “How can QRIS implementation partners work together to improve the current system supporting coaches and evidence-based coaching practices?”

# Methods

This section will address the following criteria to demonstrate which type of mixed-method research that I have used in the research as well as the following information including:

* Research design;
* Data collection and analysis - quantitative & qualitative;
* Participant recruitment process - interviews; and,
* Validity, reliability, and methodological integrity.

## Research design

For the current study, I used a mixed methods sequential explanatory design which consists of two phases: quantitative followed by qualitative (Creswell et al., 2003; Ivankova, 2005). In the sequential explanatory design, the researcher first inquires, collects, and analyzes quantitative data which are in a numerical form. The qualitative (text/string) data are collected and analyzed after the initial sequence and helps to explain, elaborate on, or validate the quantitative results derived from the first phase of the analysis. The qualitative phase builds on the quantitative phase then the two phases are connected or converged in the intermediate stage of the study. The rationale for this approach is to inquire about macro level understanding of quantitative data and its subsequent analysis to understand the general sense of a research problem (Ivankova et al., 2006). As articulated by the Ivankova’s group (2006), “the qualitative data and their analysis refine and explain those statistical results by exploring participants’ views in more depth (Rossman & Wilson, 1985; Tashakkori & Teddlie, 1998; Creswell, 2003)” (p.5). Figure 1 describes other types of mixed methods design.

The goal of mixed methods research is to strengthen and expand the study’s analysis and its findings which then contributes to published literature (Schoonenboom & Johnson, 2017). Johnson et al. (2007) defines mixed research as the following:

*“Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e. g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration” (p.123).*

Greene et al. (1989, p. 259) classified five purposes for merging in mixed methods research. These include:

* *“Triangulation:* Convergence, corroboration, correspondence of results from different methods;
* *Complementarity:* Elaboration, enhancement, illustration, clarification of the results from one method with the results from the other method;
* *Development:* Use the results from one method to help develop or inform the other method, where development is broadly construed to include sampling and implementation, as well as measurement decisions;
* *Initiation:* The discovery of paradox and contradiction, new perspectives of frameworks, the recasting of questions or results from one method with questions or results from the other method;and,
* *Expansion:* Extend the breadth and range of inquiry by using different methods for different inquiry components.”

Since the goal of the current study is to inquire and validate the ontological aspect of the QRIS system and how it’s capturing information around coaching followed by interviewing QRIS implementation partners across the state, the sequential explanatory design matched the needs of the research approach. Schoonenboom & Johnson (2017, p.110) states this approach will “heightened knowledge and validity” as well as supports legitimation of the process by validating multiple sources. The approach also supports the validity and integrity of the empirical evidence (especially from the quantitative results) as due to the current global pandemic, secondary data collection was one of the only feasible methods to conduct the current study which may degrade the quality and reliability of the empirical evidence.

## Quantitative Sequence: Data Collection and Analysis of Coaching Activities and Coach Demographics

For the quantitative data collection, the author collected two sets of quantitative data through secondary data collection. The first data set represents coaching activity data (N= 2,757 sites) queried from WA DCYF Web-based Early Learning System Data Warehouse (WELS-DW) Notes cube (DCYF, n.d.). The WELS database was a primary source for Early Achievers coaches to enter information regarding quality improvement plans (i.e. co-created coaching goals and action plans with coachees) and types/objectives of coaching activities on a daily basis (DEL, 2015).

According to Subotic et al. (2013), OLAP is a certain classification of a database which enables educational organizations to support implementation of business intelligence. Originated from E.F. Codd, a British mathematician in the 1970s, Subotic’s group (2013) referenced Codd’s foundational work to present the relational data model and became one of the most popular types of databases in the today’s world of relational databases which allows users of a database to query information of multiple dimensions including time, measures, and value of selected measures. Figure 2 represents the database pipeline for the current analysis.

Zweig et al. (2018) wrote many states do not systematically collect information on how early childhood education programs collect and use such data, and this seems similar to the documentation status of WELS-DW process, which led to the creation of Figure 2 by the author in the current study. Luisi (2014) also suggested that in the field of information technology, OLAP is one of the most complex architecture to understand due to “the need to intimately understand the business as well as a vast array of IT areas of specialization involving data architecture, reference data, master data, data governance, data stewardship, data discovery, data in motion, and a variety of associated disciplines...” (p.189). After reading some of the above references, it wasn’t surprising that there were little to no attempts to analyze and visualize the population level coaching activity data in the state due to the complex nature of the database (See Figure 2).

For the purpose of this study, a descriptive trend analysis on 1) frequency based on types of coaching activities; 2) frequency based on coaching objectives; and 3) average time spent on coaching objectives were conducted. Loeb et al. (2017, p.0) suggests three key themes of *descriptive analysis*:

*“Descriptive analysis characterizes the world or a phenomenon—answering questions about who, what, where, when, and to what extent. Whether the goal is to identify and describe trends and variation in populations, create new measures of key phenomena, or describe samples in studies aimed at identifying causal effects, description plays a critical role in the scientific process in general and education research in particular.”*

*“Descriptive analysis stands on its own as a research product, such as when it identifies socially important phenomena that have not previously been recognized. In many instances, description can also point toward causal understanding and to the mechanisms behind causal relationships.”*

*“No matter how significant a researcher’s findings might be, they contribute to knowledge and practice only when others read and understand the conclusions. Part of the researcher’s job and expertise is to use appropriate analytical, communication, and data visualization methods to translate raw data into reported findings in a format that is useful for each intended audience.”*

The following presents the definition of the top five reported coaching objectives (DEL, 2015, pp 31-34):

*Correspondence* represents records for phone calls and emails for or planning, scheduling/cancelling appointments, etc.

*Data input* represents records for coaches and coachees entering data on WELS and other data sources provided by a contractor, district, or a site level (i.e. ELMS, MERIT, Schoology, Teaching Strategies GOLD, etc).

*Learning environment* refers to coach efforts to ensure that learning environments are well-organized, clean, safe and well-managed, and are full of social and emotional support, instructional interactions and materials that stimulate children’s thinking and skills which may include using the Environment Rating Scales as a resource to inform practice.

*Resource Linking* refers to coach efforts to support providers as they find resources beyond the scope of coaching, such as links to food assistance programs for families, child care assistance for families, appropriate counseling services for staff and/or families, technology and information services like libraries and computer labs and training services through various agencies, etc. This also may refer to coach efforts to support providers to find resources that support their Early Achievers goals, such as resources found in the WELS library, the Coaching Companion, resources identified or created by the coach, community resources identified by the coach or the provider, etc.

Once the data has been collected, rounds of data visualization were conducted via Tableau software by presenting the queried information into the following format:

*Stacked bar graphs* (Wellman & Lipton, 2004)were used to display comparisons and change over time for measures such as type of coaching activities (i.e. coaching visits, in class visits, e-mails, travel time, virtual meetings, and webinars).

*Heatmaps* (Healy, 2019)were used to display frequency of measure including frequency of coaching objectives (i.e. correspondence, instructional support, relationship building, goal settings and action plans, etc) and average time spent for each coaching objective.

The second data set represents coach demographic reports and roster data sets from Child Care Aware of Washington (CCA of WA) the Department of Children, Youth, and Families Early Childhood Education and Assistance Program (ECEAP). The author also acquired a series of Coach Framework Training participant information from University of Washington Professional Learning and Coaching team (2015 - 2020). By outer joining (Rockoff, 2017) these two sets of data via R Studio tidyverse package (Wickham et al., 2019), the process enables users to view records of two data sets even if there’s no matching record linked by a primary key (i.e. Full name of a coach), and is therefore “an essential technique to understand and use” (Rockoff, 2017, p.123). The code for this process is presented in Appendix A.

The last iteration of data analysis was calculating the retention rate of Early Achievers coach workforce across the state. Adapted from principal period rates in demography (Preston et al., 2001) (i.e. the crude rate of in/out-migration between times *0 and T),* the retention rate was Early Achievers coach demographics was calculated by below calculation:

The Crude Retention Rate of Coach Workforce between times 0 and T:

*CRR[0, T] = Number of returning coaches from Year 0 / Number of coaches in Year T*

## Qualitative Sequence: Data Collection and Analysis of QRIS Implementation Partner Perspectives

For the latter sequence of the current mixed methods sequential analysis, six interviews via Zoom platform were conducted between April 20 to May 12, 2021. Despite the original intent of research was to address thoughts, perspectives, and concerns from Early Achievers coaches (See Appendix B. *Coach & Coach Lead Interview Questions* for the initial interview questions), QRIS implementation partners across state declined the researcher’s inquiry due to 1) conflict of interest around the original research question on identifying which coaching practices promote/project QRIS outcomes and, 2) concerns around time commitment due to COVID-19 outbreak for maximizing workforce time commitment for supporting child care professionals. Despite the initial request being denied, the network partners were willing to conduct 1-hour semi-structured interviews for the current study.

Before each interview, the researcher informed participants on the following information: 1) Overview/motivation of the study; 2) Purpose and procedure of the interview; 3) Dissemination plan for the draft and final deliverable; 4) Risk and benefit of participating in the study, and; 5) Verbal consent followed by collecting demographic identifier/descriptors including the following information:

* Race/ethnicity
* Current role in the QRIS implementation agency
* Years of experience in the current position
* Years of experience in the early childhood system
* Specialty in coach support in the network agency
* Pseudonym and other information if applicable.

The following questions were asked in the beginning of the interview session:

* Q1: From your own perspectives, please provide your perspectives on what’s captured on the WELS system (Coaching notes cube descriptive visuals were shared with the participant prior to the interview).
* Q2: Do you feel WELS is gathering what's considered intended information for the Early Achievers system?
* Q3: If there's a magic wand, in the next 3-5 years, what suggestions do you have to the state QRIS system and implementation partners in regards to collecting and managing coaching-relevant data and coach support system?

The interview participants were recruited via e-mail from the researcher three weeks prior to the data collection phase with instructions and above research questions based on suggested administrators/professional development specialists from following three sites:

* Child Care Aware of Washington network office (CCA of WA): A state non-profit agency for child care resource network support. CCA of WA provides statewide services around training, technical assistance, and coaching for licensed and Early Achievers participating programs. CCA of WA is the largest employer of early learning coaches in the state of Washington.
* Cultivate Learning: The university of Washington Cultivate Learning provides statewide support on research, QRIS monitoring, as well as support for providers and coaches. Cultivate Learning provides Washington coach framework training to Early Achievers coach workforce and hosts monthly webinars as a network hub between CCA of WA and DCYF.
* Department of Children, Youth, and Washington Early Childhood Education and Assistance Program (DCYF – ECEAP): DCYF is a cabinet agency of Washington state and ECEAP is one of the services provided by the DCYF early learning division supporting programs who serve children aged 3 and 4 in the state of Washington. As a state funded program, ECEAP provides extensive support for families at or below 110 percent of federal poverty level or for those who are on Individualized Education Programs (IEPs) for special education.

Upon the interview was held, the researcher reviewed the interview recordings within 48 hours by segments based on the timestamp collected from the Zoom transcription system. The transcripts were also shared with all participants via a secured system (ShareFile program).

Once the initial transcription was completed, the researcher utilized a general inductive analysis approach (Thomas, 2006) for the current study. Before describing the definition of inductive analysis or its coding/analytic procedures, below is a general logic behind the process of qualitative analysis.

In a social science research field. O’leary (2010) states use of statistical analysis as well as quantitative data have been “clearly defined and effective ways of reducing and summarizing data” (p.256). Yet, as statistics rely on reduction of meaning or phenomena to numerical values, if the data collected by a researcher is considered complex or intricate, it’s hard for a researcher to employ a reduction (deductive) approach. O’leary (2010) shared “there can be a loss of richness associated with the process” (p.256). Despite there’s a challenge to find effective and appropriate strategies to use such approaches, O’leary (2010) demonstrated the process of reflective qualitative analysis into the following steps: 1) organize raw data; 2) enter and code the data set; 3) search for meaning by theme (thematic) analysis; 4) interpret meaning; and, 5) draw conclusions.

Similar to the approach demonstrated above by O’leary (2010), Thomas (2006, p.241) describes the general steps for developing categories from an inductive approach:

* + *Category label*: Create a word or short phrase used to refer to the category. The label carries inherent meanings that may or may not reflect the specific features of the category.
  + *Category description*: State a description of the meaning of the category, including characteristics, scope, and limitations of the category.
  + *Text or data* associated with the category: Describe examples of text coded into the category that illustrate meanings, associations, and perspectives associated with the category.
  + *Links:* Each category may have links or relationships with other categories. In a hierarchical category system (e.g., a tree diagram), these links may indicate superordinate, parallel, and subordinate categories (e.g., “parent, sibling” or “child” relationships). Links are likely to be based on commonalities in meanings between categories or assumed causal relationships.
  + *The type of model* in which the category is embedded: The category system may be subsequently incorporated in a model, theory, or framework. Such frameworks include an open network (no hierarchy or sequence), a temporal sequence (e.g., movement over time), and a causal network (one category causes changes in another). To be consistent with the inductive process, such models or frameworks represent an end point of the inductive analysis. They are not set up prior to the analysis. It is also possible that a category may not be embedded in any model or framework.

Figure 3 further illustrates the general process of inductive analysis. After conducting an initial reflection of interview transcripts, the categories on Table 1 were developed for the current analysis.

## Validity, Reliability, and Methodological Integrity of the Study

In the field of mixed-methods research, the validity issues (i.e. quality) are still questioned across the board (Oweugbuzie & Johnson, 2006). Yet, there are several ways to address these issues by articulating each of the issues.

Zohrabi (2013) described *content validity* as a “type of validity in which different elements, skills, and behaviors are adequately and effectively measured” (p.258). Since the current research employs the secondary data source that are self-reported coaching activities and demographic data entered by Relationship-based Professional Development specialists (coaches) in the field into the agency level database (i.e. CCA of WA or ECEAP) and the WELS OLAP database (DCYF, n.d.), the quality and validity of the data source can be misinterpreted or unclear.

The other validity question to address for the current study involves *external validity. External validity* is questioned how findings from a research study can be generalized in other settings or subjects (Burns, 1999; Zohrabi, 2013). Zohrabi (2013) quoted the words from Nunan (1999) “Is the research design such that we can generalize beyond the subjects under investigation to a wider population?” (p.17). This may or may not be addressed in the current study as the interest of population (scope of population) is to inquire all coaching relevant records and information that’s available from multiple data sources by conducting a descriptive analytic inquiry.

*Reliability* should also be addressed in a mixed-methods study. Burns (1999) points out “Could an independent researcher reproduce the study and obtain results similar to the original study?” (pp. 20-21). Zohrabi (2013) describes these issues of *external reliability* can be addressed by including 1) the status of the researcher; 2) the choice of the informants; 3) the social context, situation, and conditions; 4) the analytic constructs and premises including definition, units of analysis, and premises; and, 5) methods of data collection (LeCompte & Goetz, 1982; Nunan, 1999). Particularly for the 2nd sequence of the current study (interviews) can use careful considerations based on the information above.

*Internal validity* is another threat that can be described as if another researcher obtained the same data from the original study, will the reporting of the findings generate similar findings as the original study? (Burns, 1999). Zohrabi (2013) states the threat of internal validity could be also prevented by having perspectives from multiple researchers, examining the data set with peers, record the data mechanically (i.e. interviews for the current study was recorded via Zoom and transcribed via Zoom AI), and using low inference by readily quantifying categories or behaviors.

To address most of the above threats and concerns, the below section will describe the author’s intentionality as well as the positionality to establish methodological and contextual integrity of the study. As a former pre-K teachers serving in various settings (i.e. Private, Head Start, and public school K-8 program), the researcher had a privilege to work with all of the interview participants in the past as a team lead, data analyst for the state Department of Education (Washington Office of Superintendent of Public Instruction [OSPI]), graduate student intern at Child Care Aware of Washington (CCA of WA) network office, as well as a current Research Head of Cultivate Learning evaluation and coaching/professional development team.

The intent of the study is to inquire about the ontological (status of being) aspect of the current early learning system (Early Achievers) while the revision and transition of the QRIS system is in review (Fiscal Year 2020-21). The author also wants to address due to the global COVID-19 pandemic, as of July 2020, 14% of child care sites are currently closed, suspended, or permanently closed compared to pre-COVID-19 in the state of Washington as of July 2020 (CCA, 2020). This brings down the number of child care sites available for access in Washington from 4,839 sites to 4,178 sites. Several inquiries were made to state QRIS implementation partner network offices (DCYF-QRIS, DCYF-ECEAP, and CCA of WA) and per guidance from the network office officials as well as the current circumstance, the researcher felt it is not feasible and inhumane to interview actors on the front line such as teachers, child care professionals, family child care owners, coaches, and instructional staff on the line giving their best to support the community during the hardship. The study may not be at its ideal status as the researcher hoped, yet the current study contributes to stakeholders at a state level to inquire and reflect on moments of celebration for a better system in the future.

In January 2021, the current research study was approved by the Washington State Institutional Research Board (WSIRB) under the project code Project Code 2019-039: *Partnership for Pre-K Improvement: Washington*. As an international graduate student, it is a privilege to work as a lead for coaching relevant research questions within a team that the project is supported by a grant, and a generous amount of support was provided from the WSIRB and guidance from the parent research team as well as research team members.

# Findings

I report main findings from the study including results from the quantitative sequence and qualitative sequence. As recommended by mixed methods researchers (Brown, 2001; Creswell, 1994; Lynch, 1996; Zohrabi, 2013), I will articulate results based on how the outcomes from the current study are similar and/or different from other related studies, theories, or frameworks.

## Findings from Quantitative Analysis

### Part 1. What is the status of Early Achievers coach workforce? - Demographics & Caseload

According to the QRIS implementation partners (Child Care Aware of Washington [CCA of WA] & Early Childhood Education and Assistance Program [ECEAP]) in the 2020-21 fiscal year, 316 Early Achievers coaches are either employed by CCA of WA or ECEAP programs across the state of Washington. Table 2 describes the overview of Early Achievers coach workforce analyzed for the current study.

As a primary agency for supporting Early Achievers programs via 1) coaching support; 2) Family support for child care access; and, 3) Scholarship administration for Early Achievers eligible participants, Child Care Aware of Washington launched as a nonprofit since 1986 and incorporated in 1989. As the one and only statewide child care resource and referral program in Washington, CCA of WA employs the largest number of coaches in the state as well as providing contracted coaching support to certain ECEAP contractors (i.e. school districts providing support at Early Achievers participating ECEAP sites). CCA of WA have six regional partners including Community-Minded Enterprises (Eastern WA); Catholic Family & Child Service (Central WA); Opportunity Council (Northwest WA); Child Care Resources (King & Pierce); Child Care Action Council (Olympic Peninsula); and, Educational Service District 112 (Southwest WA).

**Table 2.**

*Overview of Early Achievers coach workforce in the current study*

|  |  |  |
| --- | --- | --- |
| **Agency type** | **# of coaches in 2020-21**  **(% change from SY 2019-20)** | **Notes** |
| CCA of WA | 152 (-5%) | Instructional staff at licensed programs participating in Early Achievers including child care centers and family child care settings; Contracted via ECEAP contractors;  Caseload normally higher than ECEAP coaches |
| ECEAP | 164 (+15%) | Employed directly by ECEAP contractors;  Often a director serves as a coach; The coach in ECEAP system serves in a multiple role including education coordinator, administrator, site supervisor, etc |

According to the CCA of WA coach information report (See Appendix C. CCA of WA coach information) the number of CCA of WA coaches supporting Early Achievers programs decreased 5% in the 2020-21 fiscal year compared to 160 coaches in the previous year. 152 coaches returned to the workforce in the current fiscal year which include coaches from the following regional offices:

* Central WA: 28 coaches (18%)
* Eastern WA: 17 coaches (11%)
* King & Pierce counties: 59 coaches (39%)
* Northwest WA: 20 coaches (13%)
* Olympic Peninsula: 16 coaches (11%)
* Southwest WA: 12 coaches (8%)

Based on the coach contact information gathered from the ECEAP coach roster data set (DCYF, n.d.), 164 coaches are represented in the ECEAP coach workforce in the 2020-21 school year for 418 ECEAP programs (State of Washington Open Data Platform, 2021). The number of coaches is higher than the previous school year with 140 coaches. The crude retention rate of ECEAP coaching workforce of the current school year compared to the previous year was 84.62% with the following information:

* Number of coaches in SY 2020-21: 164
* Number of returning coaches from SY 2019-20: 132
* Number of incoming coaches: 33
* Number of outgoing coaches: 8
* Crude retention rate of ECEAP coach workforce: 100% x [132/(164-8)] = 84.62%

Additional descriptive analysis was conducted by joining two data sets (the ECEAP coach roster and the data set from Master Coach Training Tracker from Cultivate Learning) to answer the question, “What is the completion rate of ECEAP coaches in Coach Framework Training” (See Appendix A. for detailed steps for data join in R).

Per Master Data Coach Training Tracker (Cultivate Learning, n.d.; data available from 2015 to 2021 school year), 70 out of 164 ECEAP coaches (50%) in the 2020-21 school year have participated in the Early Achievers Coach Framework Training offered by Cultivate Learning. The participation rate has been slightly increased from the 2019-20 school year - 64 out of 140 ECEAP coaches (46%) - and this may be due to the following factors:

* Transition of role/position/work task of coaches during COVID-19 to remote settings instead of in-person visits to classrooms
* Delay/absence of communication between the training agency (Cultivate Learning) and the administrative partner (DCYF) due to staffing/furlough of coordination staff may also have contributed to the participation rate.
* Transition of modes of services from in-person training to a virtual synchronous (live) platform within the past six months which may have increased accessibility of the training.

The result also seemed a bit surprising especially given the rigorous performance standard stated on the 2020-21 ECEAP performance guidelines (DCYF, 2020) Exhibit E, Section 4.a. as “coaches must attend the Early Achievers Coach Framework training within six months of hire… regardless of modified or full services” (pp. 25-26), the quantitative analysis based on the existing data sources suggest not all coaches in the state of Washington are trained on the Practice-based Coaching framework, the backbone of the Early Achievers continuous quality improvement and coaching.

Another interesting result from the initial analysis was found by calculating coach caseload. A recently published DCYF report (April, 2021) states 3,845 programs are participating in Early Achievers including 2.271 center-based sites and 1,574 family child care sites across the state of Washington. Regardless of variations and conditions such as regions, program type, and coach agency, the estimated caseload per Early Achievers coach is around 12.17 sites. As validated by CCA of WA data team and ECEAP administrator that not all coaches are employed full-time. And for some cases, as coaches are serving for multiple contractors (i.e. CCA of WA coaches contracted by an ECEAP contractor who has no access to ECEAP coaches from a school district), the number of caseloads per coach questions feasibility and sustainability of evidence-based coaching practice in a dyad relationship. Despite there’s no recommendation around number of coach caseload (Smith et al., 2012; Keller, 2017) and perhaps speculation can be made that coaches are employing peer/group coaching strategies (Hobson et al., 2008; Ingersoll & Strong, 2011; Robbins, 2015), the results deemed questionable especially the Early Achievers coach framework recommends co-creating and building relationships, goals, and action steps based on the needs of individual clients.

### Part 2. What are types of coaching activities reported in the statewide database system? - Coaching Activity Reports and Objectives from WELS

After querying descriptive frequencies of coaching activities and objectives via Web-based Early Learning System (WELS; DCYF, n.d.) through connecting Microsoft Analytic Services through Tableau software, regardless of program types, Figure 1 represented coaching activities that require on-site visits (i.e. visits, classroom, on-site/out of classroom, off-site visit) were decreasing over time (from 2014 to 2021) whereas engaging coaching activities in a virtual format (i.e. virtual meeting, use of Coaching Companion tool, or webinar participation) increased in the same time frame.

This trend seemed inevitable due to the current global pandemic and results have shown little variation of types of activities reported regardless of a program type. The result from the reported coaching notes also showed promising evidence that coaches and coachees in the Early Achievers program continued to engage in continuous quality improvement virtually. Additional analysis on the topic could demonstrate in-depth inquiries of the sequence of coaching activities as the Figure 1 represented data for stakeholders yet it is insufficient and invalid to conclude whether coaching activities that are recommended by the Early Achievers coaching framework (Practice-based Coaching) were implemented and executed at a site level with fidelity.

Additional descriptive analysis was conducted on visualizing coaching objectives data from the same data set. Figure 2 represents the practice level information on 40 coaching objectives reported by coaches. The heatmap figure (Figure 2) represents frequency of coaching objectives based on the saturation of a cell value - the darker the cell value represents, the more the coaching objective was reported by a coach at a site level. Top five reported coaching objectives are *correspondence*, *other, data input, learning environment,* and *resource linking*.

Data from Figure 2 shows the majority of the coaching effort are spent on administrative activities such as correspondence (i.e. emails, phone calls) and entering data, a coach was serving as a resource hub by providing resources to support coachees as well as engaging in improving the organizational and environmental quality of a care utilizing the metrics available from the Environmental Rating Scales (ERS) (Hamre et al., 1998) tool. Also based on the design of the Early Achievers system, the *Learning Environment* standard was the criteria that allocated most eligible points to achieve high ratings in Early Achievers (55 points out of 100 points eligible from a participating licensed care).

On the other hand, Figure 3 may provide different aspects of what’s happening at a site level when time spent on each coaching objective were compared by a type of program. Despite the hours reported on coaching objectives ranging from .25 hours (15 mins) to 8 hours, there seems to be an overall trend of decreased number of hours spent on each activity over time since 2016. Clear distinction was found especially in 2020 and 2021 due to the pandemic. Specifically for ECEAP programs, the average hours spent on each activity were much higher than those in child care sites and family child care settings. As 373 sites (2019-20) are supported by 164 ECEAP coaches (2020-21) whereas the remaining 2500+ sites are supported by 152 CCA coaches, findings around higher number hours spent on each coaching objective in ECEAP programs deemed reasonable. Yet, additional in-depth inquiries by qualitative data collection will support the initial findings and inquires around why these patterns of decreased hours of coaching objectives were observed across programs. Additional information on “why” these patterns were observed will be articulated in the qualitative strand of the current study.

## Findings from Qualitative Analysis

The following represents findings from four 1-hour interviews with six Early Achievers implementation partner agency professionals. The research asked following questions during the semi-structured interview:

* After reading the WELS data gallery (the participants had a chance to review the visual presented on Figure 2 & 3), what are your general thoughts on data captured in the WELS system?
* Does the current system (QRIS in general and WELS) capture it’s intended outcomes based on your perspectives, beliefs, and coaching practices that you have observed from the field?
* If you had a magic wand, in the next 3-5 years, what suggestions do you have to the state QRIS regarding collecting and managing coaching-relevant information?

Table 3 describes the overall characteristics of the research participants.

**Table 3.**

*Demographic characteristics of interview participants (N=6)*

|  |  |
| --- | --- |
| ***Participant characteristics*** | ***n (%)*** |
| Race/Ethnicity |  |
| Caucasian / non - Hispanic | 6 (100%) |
| Avg. years of experience in the current position |  |
| 1 - 2 years | 3 (50%) |
| 3 - 5 years | 2 (33.3%) |
| 5+ years | 1 (16.7%) |
| Avg. years of experience in the early learning system |  |
| 20 + years | 6 (100%) |
| Employer – QRIS Implementation partner |  |
| Child Care Aware of Washington | 2 (33.3%) |
| Cultivate Learning | 2 (33.3%) |
| Dept. of Children, Youth, and Families -  ECEAP | 2 (33.3%) |
| Current role |  |
| Trainer/Evaluation specialist | 2 (33.3%) |
| Program administrator (Coach support) | 4 (66.7%) |

*Note.* Participant A, B, E, F: Program administrator; Participant C, D: Trainer/evaluation specialist.

### Theme 1: Perspectives from system-level lenses: Early Achievers & WELS database system does not highlight the values coaches bring to the system

Majority of the participants shared several concerns and thoughts for the Washington Quality Rating Improvement System (QRIS) – Early Achievers. Some of them commented explicitly around what is the intent of the current system:

*“…How much data captured on WELS is eventually translating to relationship? I get the feeling from the state that what the wants are about how we measure providers' quality and journey and how the score is moving and as I'm involved with the WA Compass [the new database launching July 2021] meeting... I'm on a fly while in that meeting [WA Compass meeting] yet I really don't think it's [WELS & Early Achievers] been designed to intent on acknowledging celebrating coaching perspectives and achievements” - Participant A on April 20, 2021.*

*“I get the information, I do. It [the system] is all driven by funding and it is all focused on "child outcomes" and "provider focused.” Although there’s a factor and impact around coaching, the impression is "yeah yeah yeah coaching drives that [child-level outcomes] but we don't want to hear more about it [coaching]" - Participant B on April 20, 2021.*

*“Even if you have a theory of change in this design the way you described Min [the researcher described the current theory of change from Early Achievers to the participant], everything in that has to have its own logic model if there's an outcome, so if you have a lot of outcomes in that conceptual framework, then you have to have a logic model for those outcomes, so that you can identify the activities that are going to lead to whatever that outcome is so. These are, I would say, probably like short most of the things in this list or short or medium-term outcomes, but that you still need a logic model to understand how coach is going to get to those. The theory of change, you need that but, once you have that you still you still need to identify the steps in that, which is what the logic model would do” – Participant D on April 27, 2021.*

Other concerns around the state database system (WELS) have also arose during our conversations after all participants had moments to read and reflect descriptive information represented from Figure 1, Figure 2, and Figure 3 from the quantitative sequence:

*“I'm not surprised that this year, looking at 2021, and centers. I guess I'm looking at centers… when I look at all three (FCC, CC, & ECEAP) and then I see a ECEAP is very lightly colored. I'm not surprised by this information. I think majority of focus has been placed on those first. You know the first, third of the list of options there for the [coaching] objectives [i.e. Correspondence, Other, and Data Input] … I'm a little surprised, I guess, looking at the ECEAP that there's not more purple, at least in the 2017 to 19 time frame. I'm not surprised for the last two years, because with the anticipation of WACompass [new statewide database expected to launch July 2021], and then the delays and whatnot we kind of backed off on our expectations in that area [of entering coaching activities in the state database system]” – Participant E on April 28, 2021.*

*“Thinking about what comes out from Notes [data visual] is interesting to think about… Data entry is the bane of their [coach] existence yet the form and the system is not conducive… It's [WELS] not really capturing the partnership, relationship, etc” – Participant A & B on April 20, 2021.*

There was only one participant who commented on the fit of the system, yet I thought this summed up what is currently happening how different coaching system and data system are reflected in Early Achievers.

*“The coaching system that we created in our state.* *So Early Achievers was created for childcare and family home providers and ECEAP was brought in afterwards and It was never quite the right fit. I know there's some people who say, you know that it was a great fit, but ECEAP providers did not think that, and so it immediately created a contentious relationship and it created a mentality that pitted… The organizations that were supporting coaches in in some ways inadvertently, I think, put them in opposition to each other when they didn't need to be. And it created that us [ECEAP] and them [CCA of WA] mentality of kept things as it is and there was judgment that resulted in on both sides of what Child Care Aware staff and coaches and regional staff thought about ECEAP sites and then also what ECEAP sites and directors and team thought about Child Care Aware. I think it shows the bifurcated system that we're trying to change” – Participant F on May 12, 2021.*

Majority of the concerns and comments above reflected the infrastructure challenges around multiple standards and recommendations not aligning with each other as those were organized primarily by individual sectors based on the entity level which resulted in uncoordinated system across all parties of the Early Achievers system (Tout et al., 2011).

### Theme 2: Perspectives from agency-level lenses: We all have different philosophies, approaches, and goals in the system.

Like the system level perspectives, the perspectives from agency-level lenses were not too different. For some programs, often coaches have multiple roles that diverge their effort to only focus on coaching activities:

*“I think the challenge in the ECEAP. It's different is that coaches in ECEAP [compared to coaches in CCA] often have multiple roles. We (DCYF ECEAP) require every contractor to have access to at least one coach to support the Early Achievers process. But those coaches are often someone who was already an education manager or some sort of management level staff person in their program and it might even be the director so at some of our programs, the director is also the coach. So, it varies widely based on the size of the program and just their internal structure of what that coach does that they do much more than Early Achievers Coaching. They do that and other duties so, I think that's where some of the complexity lies within coaching in ECEAP.” – Participant E on April 28, 2021.*

Some participants mentioned that their agency have implemented other types of coaching approaches that are different than the statewide Practice-based Coaching framework due to the issue of coach caseload:

*“As I Step back from this a little bit from ECEAP v. CCA coach and caseloads, CFT - coach framework training if you really implement that to fidelity, you should only work with eight to ten providers. That is only one coaching approach of many. CCA has adopted transformational coaching and worked with Constant Hine (External consultant – GROOMER framework) hired her to work internally to work with coaches; We have also adopted facilitated book study by bright morning in the past year and coaching for equity with the coaching system” – Participant B on April 20, 2021.*

*“…Because coaches are trained in so many different methods it's that's a good thing, different approaches that's a really good thing but there's no - to my knowledge - no graphic or anything that points to when you would use this approach to coaching in in this situation. And when you might practice based coaching in another situation or instructional co-active and that. So, the coaches try to use the approach that they are most comfortable with or the one they understand the most. But it is not necessarily the most effective approach for the goal that they're trying to reach”- Participant D on April 27, 2021*

*“Yeah. I'm glad you brought that up ‘Participant D’ because that makes me think that it's also about individualized and with their clients right with the teachers and providers, and so what’s most appropriate approach or relevant approach for this particular client rather than everybody fits into this little box of practice-based coaching – Participant C on April 27, 2021 responding to Participant D’s comment.*

If I reflect some of the literature around coaching in the past that have conceptualized or shown successful implementation of a strategy (Bush, 1984; Eckman, 2003; Fox et al., 2011; Gottman, 2001; Knight 2007; Joyce & Showers, 1982; Prochaska et al., 1994), these all included sets of expectations, frameworks, and controlled caseloads that are feasible and manageable from coaches to intervene at a site level. I also believe the participants have commented the issue of “infrastructure” (Halle et al., 2013) as reflected by some of the participants that the QRIS was implemented on top of the currently established layers of system, which makes it harder for professionals from oversight and administration agencies (Metz & Bartley, 2012) to align with the agency level policies to the expectations from QRIS.

### Theme 3: Perspectives from practice-level lenses: We have seen coaches made progress through this complex system – and we have seen some positive changes.

Despite the complex system in the Early Achievers and its coaching system, participants have demonstrated successful cases of how coaching brought lights to the clients from multiple examples:

*“This past year has been very difficult for coaches. Their providers are crying, worried about losing their business, and juggling this. Everyone is focused on COVID-19, they don’t care about Early Achievers revision. I have someone who’s ready to go, but we don’t have information to give away what’s happening with the revision.” – Participant B on April 20, 2021*

*“But then, we became the amazon drivers and deliver toilet papers, deliver masks, etc. I’ve heard coaches were saying “I miss coaching” but this is coaching. If you meet the needs of providers today, that is coaching - that is not Early Achieves coaching, but we’re still coaching. You’re checking in emotional well-being of people and what is needed today… Prior to the pandemic. when I come to a place that I can improve and understand in this area/career/professional life day-to-day and make my day easy. The kind of support helps me recognizes ways to address what I can do differently with supportive dialogue. It's not my boss measuring my [coaching] performance with metrics and trying to celebrate and reflect what can be done did moved my personal goal a little bit… I(Coach) am your ally and it's more about "What do you want to push" and inquiring different practices? – Participant A on April 20, 2021.*

*“I've heard lots of success stories from coaches and directors breaking down the different quality standard areas; being able to. just sit down the in there; I heard from one director who was also the coach she did everything for their program of a very small in central Washington and she had weekly meetings with her staff, and they would take like one piece of the CLASS [classroom teacher-child interaction observation tool] because that was an area they really wanted to focus on was the instructional support section of CLASS, and so they broke it down into small chunks and talked about a piece every week and then how they could improve their practice in the classroom setting over time. Thinking and reflecting they had peers observing each other in in classes and providing feedback and doing some in-depth work around that one piece of CLASS specifically. And, and it helped them they showed, you know growth in that area from one rating to the next” – Participant E on April 28, 2021.*

Communication was another area of strengths and challenges that participants acknowledged that provided a bit of mixed-bag of results:

*“I think one of the things that we've done is maintaining that level of communication, so we really tried to keep folks informed we're constantly emailing putting reminders in our newsletter putting you know letting them know of opportunities and engaging with directors in ways we have our CQI team has monthly calls with the directors of each program and so there's opportunities to share information regularly, and I think, from a large perspective, our ECEAP contractors know like we're going to let them know if they need to pay attention to something or if there's a change coming” - Participant E on April 28, 2021.*

*“Cultivate Learning team seems to be providing a positive change on training coaches including webinars, revising training contents, etc including How to understand QRIS? How do navigate providers through journey system and other support soft skills and 30/60/90-day checklists” – Participant A on April 20, 2021.*

*“We're also in this revision[QRIS and coach system], and this is a really important piece I think CCA doesn't realize that yet because … they don't have a solid onboarding process [for coaches] in place yet [for remote modules that the system is trying to accomplish].*

*It's been in flux for about four years, because I think it was about four years ago, when I first started asking them. And now it's going to be critical that we have the onboarding process because to train coaches virtually, we either have to have them come to the training with certain skills in place already from onboarding or we have to provide a workbook for them to practice the things that they would have done in the past in person, which are really challenging to do virtually. I mean you have to practice what you're supposed to know how to do in your job, you have to practice that in the training. And there's just no easy way for them to practice filling out forms and stuff like that, so they either have to get that stuff before they come in the training, so we could say: Okay now, pull out your form on how to write a goal. And now you're going to practice it here, or we have to give them a workbook something like that.*

*Moving to the virtual environment around a practice and coaching practice where people need to practice that is challenging” – Participant C on April, 27, 2021.*

### Theme 4: What’s our next steps? Different ideas were presented.

All participants have commented different ideas and thoughts for what the system should focus on in terms of next steps. For those who support coaches commented there should be more equitable access to coach workforce and early childhood education workforce to continue professionalize the workforce:

*“It doesn’t help coaches (there's a support from Coach certificate) if they[system actors and policy makers] really want to professionalize coaching workforce and/or ultimately recognize other professional development than a degree. Or even ECE degree for director, make one for early learning coaches, and alternative pathways. Degrees are not something that’s considered accessible to our workforce and I don't know any other degree programs that's offered other than in English” – Participant B on April 20, 2021.*

Another thought was reported around the feasibility and intentionality around the current reporting system that there should be different approach when it comes to collecting coach activity relevant information.

*“I think the first thing that comes to my mind, is involving coaches in figuring that out so it's not top-down so it's not like ‘Okay, here we are. DCYF v. CCA decided and this is what you have to input every day or this is what you have to collect.’ Instead, asking them [coaches] what makes the most sense to you. Looking at that list [of WELS coaching documentation], it is overwhelming and it's not helping people to organize... what's the purpose like, why is this even being collected. And really figuring out, is there a better way or a different way to get data from coaches ongoing that will really be more meaningful” – Participant C on April 27, 2021.*

*“I think the biggest thing for me, from my perspective… is having one data system that everybody could input into so that we actually have a consistent and accurate coach data to begin with. Because right now, data feels very skewed towards licensed childcare and I think CCA has some great data on their coach workforce and coach needs because of the system they've implemented for tracking all of that (CCA has a dedicated data team of two professionals supporting from the network office). We need that as a state level to really get all of the demographic data, the needs the education that all of those pieces. For me that's like step one: We need to know what we have, because we don't have combined data that matches” – Participant E, April 28, 2021.*

One participant has commented an interesting idea for next steps - Train coaches similar to the system in the Public Health field:

*“My magic wand would to be to have a nurse or group of nurses from that profession, who take over the leadership of early learning in Washington state. And they apply the model that nursing uses in its profession to early learning and especially to coaching because I think nurses - nursing profession - is the closest profession, I can think of to coaching, but when we think of nurses, we think of people who are highly trained, who have multiple entry points into the profession, with a lot of different degrees, and they have to deal with people who a hierarchy in the medical profession. And they have to deal with a lot of people outside of their profession… they're connected to a lot of different things, and they have to be very aware of the context of the patients that they're dealing with. And they have to be incredibly organized to have super high executive function skills… everyone needs to think that this is a profession that should have really high standards like nursing and there's a clear pathway to each of the levels of participation” – Participant D on April 27, 2021.*

Finally, one participant mentioned there could be some venues for appreciation that uniqueness and diversifying options for programs to adopt rather than one-size-fit all approaches:

*“Well, I think it would be a system that takes into account the requirements in ECEAP that meet the Early Achievers requirements or the intention that it's a system that across the state in early learning programs with opportunities to be able to have a menu of options for them (coaches) to really be able to specialize and to be able to have their you know their unique programming and the effort that places where they put their efforts to have that be recognized. I'm really hoping that in the new system, that will be able to happen and that there will be especially for ECEAP sites to be able to self-determine the areas that they're going to focus in on.”*

In conclusion, based on four strands of perspectives reported by six research participants, Early Achievers – particularly the system the coaching system – is facing some of the challenges identified by the systems initiatives framework in the early learning context (Blase & Fixsen, 2011; Coffman, 2007; Tout et al., 2013). Some of practical strategies to address issues reported by participants are described by Tout et al., 2013:

* Form implementation teams to provide an accountable structure to address what’s the system’s intent of professional development (i.e. coaching) strategies;
* Develop communications protocols to communicate progress and celebrate success on actions, decisions, and agreements made in the progress;
* Consider key questions and address those during each stage of the implementation cycle; and,
* Institute continuous improvement cycles by implementing the Plan Do Study Act (PDSA) cycle (DeFoe & Barnard, 2005; Deming, 1986; Shewhart, 1924) from practice level and system level.

Based on the results provided by the empirical evidence followed by the comments from system actors, careful consideration needs to be addressed for revising the statewide database that are needed for documentation of effective practices across the targets of coaching activities as well as other professional development activities such as trainings, webinars, and institutes (Tout et al., 2012). Tout et al. (2012) stated “the issues described in the PD system as is will be resolved not only by focusing on individual practitioners but also by recognizing that achieving the system to be requires changes that are implemented across all levels and targets of the systems” (p.265). As of 2020, Washington has one of the best integrated data systems among QRIS participating sites, yet majority of the focus governed by the state Education Research & Data Center are focused on gathering patterns of access or outcomes that emphasize school readiness for children who are later in the developmental trajectories in the Early Achievers programs (Lopez et al., 2017).

# Discussions

In the final chapter of the study, I will describe the methodological aspect of the current study and reflecting topics addressed from the findings from previous literatures. The goal of the current study has been to highlight the overview of status of coaching and its workforce in the Washington Early Achievers program, the characteristics of coaching activities reported on the state database, the perspectives from Early Achievers implementation actors around the strengths and challenges of the current system, and inquiring ways for Early Achievers implementation partners to work together. To achieve above goals, I have collected quantitative data including demographics information from coach support agencies as well as coaching activity information from the statewide WELS database; and qualitative data by interviewing six Early Achievers implementation partners for intended convergence that provided validity to the empirical evidence collected from the initial quantitative sequence.

The advantages of employing the sequential explanatory mixed method design (QUAN -> qual | Creswell & Plano Clark, 2018) increase the construct validity of the findings by having multiple forms of evidence which enhances the trustworthiness of the analysis (Gorard & Taylor, 2004), reduces the bias of researcher (Smith et al., 2016), and compensate for the weakness of quantitative information of what’s happening in the system by layering how and why such information were captured among Early Achievers implementation partners.

The study also has some potential limitations. First, the information collected during the quantitative sequence are secondary data sets previously collected from other entities (i.e. CCA of WA, Cultivate Learning, or DCYF – ECEAP). The data sets were mostly self-reported assessments or reports created by Early Achievers implementation partners. Second, the interview participants recruited for the current system may not necessarily present the opinions of Early Achievers coaches. Due to the conflict of interest, strong hesitation from the coach employing agencies to conduct interview from coaches because of the current COVID-19 pandemic to solely focus coaches’ time on providing support for providers, as well as the restrictions from the IRB to permit site visit and data collection resulted in interviewing Early Achievers implementation partners providing oversight and administration rather than those who directly support teachers, childcare owners, and directors. Finally, since the intent of research question was to inquire ontological aspects of the current system, the goal of the study may prevent from focusing on specific research question. Alternative design was discussed in the initial phase of the current study (i.e. conducting a quantitative forecast/modeling study on whether coaching activities are associated QRIS outcomes) yet the research is still unclear around whether there’s an association between coaching activities and QRIS outcomes (Boller & Maxwell, 2015; Lloyd & Mollin, 2013; Smith et al., 2017; Zaslow & Tout, 2014) nor the data captured in the quantitative sequence was not sufficient to inquire questions around association or causality. Nevertheless, the current study attempted to use the quantitative to highlight trends of population level coaching activities that are observed from the statewide early learning database (WELS) which validated some of the findings found from other QRIS researchers (Smith et al., 2012/2019; Keller, 2017; Zeng, 2016; Zaslow et al., 2010).

As I articulate and reflect on the findings of the current study and the history of Early Achievers, data collection and building a data system that works for all implementation agencies and partners seemed to be soaring over the years of as Early Achievers was in place for more than a decade. One of the last manuals that articulated process for Early Achievers coaches for data entry and step-by-step guidelines were designed in 2015 and in fact, there seems to be lack of revision, update, nor discussion around what information of coaching activities, demographics, or characteristics could be captured under the current or for renewed system. Since the introduction No Child Left Behind requirements (Stipek, 2006; Marsh et al., 2006), the needs for addressing data-driven decision-making processes have increased over time (Gullo, 2013); however, there’s a lack of practical guidelines around how to create such database. It seems researchers agree that having such process (i.e. data management) enables early childhood education professionals and stakeholders to make decisions based on the needs described on data (Gischalar et al., 2019); yet from the current Early Achievers theory of change and model (Goodvin et al., 2019; Soderberg et al., 2016; Zellman & Fiene, 2012), it is still unclear how these data-driven decision making processes play its role when it comes to supporting coaches, coaches making decision on what coaching practices needed to be implemented from a client’s perspective, or what are considered effective/feasible coaching strategies based on the data captured from the system.

Sandall et al. (2014) shared insights on why collecting and using data in early learning settings are challenging and perhaps different than the needs currently shown by Early Achievers implementation actors around building a system-wide database to capture coaching-relevant information. Sandall et al. (2014) stated the three primary tenets of data collection in the early childhood settings by referencing the work of Wolery (2014) includes: a) to validate initial assessment information; (b) to develop a record of progress over time; and (c) to evaluate instructional effectiveness and make instructional decisions” (p.161).

Comparing with the computer science reference suggested from Luisi (2014), it seems clear that the information architecture system held by the QRIS system can be among the most difficult for the general population to understand. According to Luisi (2014) structures in information technology (i.e. WA QRIS WELS-DW) is one of the most complex architecture to understand “due to the need to intimately understand the business as well as a vast array of IT areas of specialization involving data architecture, reference data, master data, data governance, data stewardship, data discovery, data in motion, and a variety of associated disciplines that reside in operations architecture, business architecture, and the main body of enterprise architecture in the previous major section” (p.189). As the current system lack understanding nor consensus around what needs to be collected by whom, it isn’t surprising that the current system is not capturing the diverse needs and goals presented by different stakeholders. We also need to reflect the claims from Sandall et al. (2004), the nature of setting in an early childhood program often tends to be play-based which are led by child’s intrinsic motivation or open-ended play, which becomes harder to classify individual level activity into a form that’s articulated in an instructional objective. Unless there’s a specific reference category or a goal determined by a coach-coachee, it becomes extremely difficult for a data system to capture what’s intended goal of the activity.

Data management itself is challenging given the fact a teacher is likely to work with at least 15-20 children in setting. Unless there’s a dedicated time for teachers to record such progress of a child's development, it often becomes a challenge to teachers to organize, collect, record, and reflect data. This can be alleviated by having an on-site coach, yet it is rarely the case that a coach is hired by an agency (Knight et al., 2019) due to the funding/cost. This was also validated by one of the interview participants that since the coaching for their programs are “unfunded mandates by legislature,” the participant expressed extreme difficulty to follow all guidelines suggested by the state legislator and the system performance guidelines.

Especially for programs serving as an inclusion classroom or setting, the added nature of the documentation process mandated for the Individualized Education Program/Individualized Family Service Plans makes it harder for an instructional staff in a classroom setting to document such progress (Sandall et al., 2004). I also speculate that this would be particularly true to state funded programs in the state of Washington, as there are more strict performance standards and guidelines that have to be followed in each school year.

Finally, from the current study, I believe more attention is needed on how these Early Achievers implementation partners implement the notion of research-practice partnerships (RPP) (Byrk et al., 2015; Coburn et al., 2013). Coburn et al. (2013) defines as a long-term, mutually beneficial collaborations that promote the production and use of rigorous research about problems of practice that are intentionally organized, and hold promise for improving the relevance of the research produced, the use of research by organizations, and outcomes for youth. The partnerships among Child Care Aware of Washington, Cultivate Learning, and Department of Children, Youth, and Families under the umbrella of Early Achievers have at least lasted for over a decade. Henrick et al. (2017) quoted the words from Vivian Tseng (2017):

*“Research-practice partnerships can address persistent challenges by*

*producing new knowledge, building capacity, and informing action.”*

All implementation partners were engaging in research-policy-practitioner partnerships for multiple years, yet it was interesting to reflect some of the quotes from interview participants that there’s a lack of communication among implementation partners up until COVID-19 for Early Achievers process revision or the system was designed to diverge coaching networks into you v. them mentality, which made an invisible crack between partnership and rapport among partner agencies. From my reflection, the system was lacking one of the five dimensions of research-practice partnerships (Henrick et al., 2017): Supporting the partner practice organization in achieving its goals. As the current system (i.e. Early Achievers is promoting having higher quality programs) has its own goal whereas the system actors have different agency level goals (i.e. ECEAP wants to increase the subsidy slots for children serving in ECEAP programs; Cultivate Learning would like to see more practitioners using their online coaching platform *Coaching Companion*; CCA of WA wants to employ transformational coaching rather than an evidence based approach), it doesn’t seem that there’s a primary goal for RPPs to have an explicit goal “to support a practice organization’s achievement of its goals” (Henrick et al., 2017) that also reflect the goal as a system. Henrick’s group (2017) suggested these challenges can be addressed by providing research and evidence to support improvements in the partnering organization; helping RPP partners to identify and organize strategies for addressing problems of practice and informs the ongoing adjustment of improvement strategies. From all six interviews conducted for the current study, one thing that participants have mentioned was that it is their first time reflecting coaching information from state database visuals for them to understand what’s being collected in which degree on what coaching objectives from a state-level database. Perhaps providing holistic results around what is currently captured among partner agencies creates a moment of data-driven dialogues around such practice, which then informs and helps stakeholders to be interested in and engaging in such activities for improvement. As Wellman & Lipton (2011) described, I felt fortunate that current study at least contributed to the field from having data that has no meaning to a round of inquiry, experimentation, and reflection that accelerate continuous growth and learning.

# References

Berkel, C., Gallo, C. G., Sandler, I. N., Mauricio, A. M., Brown, C. H., & Smith, J. D. (2019). Redesigning implementation measurement for monitoring and quality improvement in community delivery settings. *The Journal of Primary Prevention, 40,* 1(Special issue on Measurement and Monitoring Systems and Frameworks for Assessing Implementation and Adaptation of Prevention Programs).

Boller, K., Del Grosso, P., Blair, R., Jolly, Y., Fortson, K., Paulsell, D.… & Kovas, M.. (2010). *The seeds to success modified field test: Findings from the impact and implementation studies.* Mathematica Policy Research. Retrieved from <https://www.mathematica-mpr.com>

Boller, K. & Maxwell, K. (2015). QRIS research: Looking back and looking forward. *Early Childhood Research Quarterly. 30*(Part B), 339-342.

Boller, K., Tarrant, K. & Schaack, D.D. (2014). Early Care and Education Quality Improvement: A Typology of Intervention Approaches. OPRE Research Report #2014-36. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Boushon, B., Provost, L., Gagnon, J., & Carver, P. (2006). Using a virtual Breakthrough Series Collaborative to improve access in primary care. *The Joint Commission Journal on Quality and Patient Safety, 32*(10), 573-584. doi:10.1016/S1553-7250(06)32075-2

Boyd, S., & Joseph, G. (2016). *Pre-service teachers' mathematics language and reflection in the context of an early childhood mathematics methods course*. Seattle: University of Washington.

Bromer, J., & Korfmacher, J. (2017). Providing high-quality support services to home-based child care: A conceptual model and literature review. *Early Education and Development, 28*(6), 745–772.

BUILD Initiative (BUILD). (2013). *Continuous quality improvement: An overview report for state QRIS leaders.* Denver, CO: Wiggins, K. & Mathias, D..

BUILD Initiative (BUILD). (2020). *QRIS State Contacts & Map* [Dataset]. BUILD. <http://www.qrisnetwork.org/qris-state-contacts-map>

Burns, A. (1999). *Collaborative action research for English language teachers.* Cambridge: CUP.

Buysse, V., & Wesley, P. W. (2005). *Consultation in early childhood settings.* Baltimore, MD: Paul H. Brookes Publishing.

Byrk, A. S., Gomez, L. M., & Grunow, A. (2011). Getting ideas into action: Building networked improvement communities in education.  In Hallinan, M. (2011). *Frontiers in sociology of education.* New York, NY: Springer.

Bryk, A., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to improve: How America's schools can get better at getting better*. Cambridge, MA: Harvard Education Press.

Carr, R. C., Mokrova, I. L., Vernon-Feagans, L., & Burchinal, M. R. (2019). Cumulative classroom quality during pre-kindergarten and kindergarten and children’s language, literacy, and mathematics skills. *Early Childhood Research Quarterly, 47,* 218–228. doi:10.1016/j.ecresq.2018.12.010

Cassidy, D. J., Hestenes, L. L., Hegde, A., Hestenes, S., & Mims, S. (2005). Measurement of quality in preschool child care classrooms: An exploratory and confirmatory factor analysis of the Early Childhood Environment Rating Scale-Revised. *Early Childhood Research Quarterly,* *20*, 345–360.

Child Care Aware (n.d.). *How have individual neighborhoods been impacted by child care closures due to COVID-19?* [Dashboard]. Retrieved from <https://www.childcareaware.org/ccdc/state/wa/>

Child Care Aware of Washington (n.d.). *2019 & 2020* *CCA of WA coach demographics report* [Unpublished Data].

Christie, C., Lemire, S., & Inkelas, M. (2017). Understanding the similarities and distinctions between improvement science and evaluation. *New Directions for Evaluation,* *2017*(153), 11-21.

Cobb, P., Jackson, K., Henrick, E., Smith, T. M., & MIST Team. (2018). *Systems for instructional improvement: Creating coherence from the classroom to the district office.* Cambridge, MA: Harvard Education Press.

Conradi, L., Agosti, J., Tullberg, E., Richardson, L., Langan, H., Ko, S., & Wilson, C. (2011). Promising practices and strategies for using trauma-informed child welfare practice to improve foster care placement stability: A Breakthrough Series Collaborative. *Child Welfare, 90*(6), 207. Retrieved from https://www. ncbi.nlm.nih.gov/pubmed/22533050

Creswell, J. (2007). *Qualitative inquiry & research design: Choosing among five approaches* (Second ed.). Thousand Oaks: Sage Publications.

Creswell, J. W. & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (Third ed.)*.* London, UK: Sage Publications.

Creswell, J. W., Plano Clark, V. L., Gutmann, M., & Hanson, W. (2003). Advanced mixed methods research designs. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research (pp. 209–240)*. Thousand Oaks, CA: Sage Publications.

Coburn, C.E., Penuel, W.R., & Geil, K.E. (January 2013). *Research-Practice Partnerships: A Strategy for Leveraging Research for Educational Improvement in School Districts.* William T. Grant Foundation, New York, NY.

Codd E.F., Codd S.B., & Salley C.T. (1993). *Providing OLAP (On-line Analytical Processing) to User-Analysts An IT Mandate.* Codd & Date, Inc., *32*, 31.

Cummings, K., & Joseph, G. (2015). *Educating English language learners in early childhood classrooms: A survey of teachers' sense of preparedness and self-efficacy in Washington State*. Seattle]: University of Washington.

Daily, S., Tout, K., Douglass, A., Miranda, B., Halle, T., Agosti, J., Partika, A., & Doyle, S. (2018). *Culture of Continuous Learning Project: A literature review of the Breakthrough Series Collaborative (BSC)*. OPRE Report #2018-28, Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Daniel, D. M., Norman, J., Davis, C., Lee, H., Hindmarsh, M. F., McCulloch, D. K., ... & Sugarman, J. R. (2004). Case studies from two Collaboratives on diabetes in Washington State. *Joint Commission on Quality and Safety Journal. 6*(2), 103. doi: 10.1016/S1549-3741(04)30012-2

Deming, W. E. (1986). *Out of the crisis*. Cambridge, MA: Massachusetts Institute of Technology, Center for Advanced Engineering Study.

Dewey, J. (1997). *How we think.* Dover Publications, 1997. (originally published 1910).

Domitrovich, C. E., Gest, S. D., Jones, D., Gill, S., DeRousie, R. S. (2010). Implementation quality: Lessons learned in the context of the Head Start REDI trial. *Early Childhood Research Quarterly, 25*, 284-298.

Early, D., Maxwell, K. L., Burchinal, M., Alva, S., Bender, R. H., & Bryant, D. et al.(2007). Teachers’ education, classroom quality, and young children’s academic skills: Results from seven studies of preschool programs. *Child Development, 78*, 558–580. http://dx.doi.org/10.1111/j. 1467-8624.2007.01014.x

Feldman, R. (2002). *Epistemology.* Prentice Hall.

Fox, L., Hemmeter, M. L., Snyder, P., Binder, D., & Clarke, S. (2011). Coaching early childhood special educators to implement a comprehensive model for promoting young children’s social competence. *Topics in Early Childhood Special Education, 31*, 178–192.

Franko, M. D., Zhang, D., & Hesbol, K. (2018). Alignment of learning experiences from prekindergarten to kindergarten: Exploring group classifications using cluster analysis. *Journal of Early Childhood Research, 16*(3), 229–244. doi:10.1177/1476718X18775761

Fullan, M. (2011). *Change leader: Learning to do what matters most.* San Francisco, CA: Jossey-Bass.

Goffin, S., & Barnett, W. (2015). Assessing QRIS as a change agent. *Early Childhood Research Quarterly, 30,* 179-182.

Gorard, S. & Taylor, C. (2004). What is ”triangulation?” *Building Research Capacity, 7,* 7-9.

Greene, J. C., Valerie J. C., and Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11,* 255–274.

Hallam, R., Hooper, A., Bargreen, K., Buell, M., & Han, M. (2017). A Two-State Study of Family Child Care Engagement in Quality Rating and Improvement Systems: A Mixed-Methods Analysis. *Early Education and Development, 28*(6), 669–683.

Halle, T., Metz, A., & Martinez-Beck, I. (2013). *Applying implementation science in early childhood programs and systems*. Baltimore: Paul H. Brookes Pub.

Harms, T., Clifford, R. M., & Cryer, D. (1998). *Early childhood environment rating scale (ECRS)*. New York: Teachers College Press.

Harms, T., Cryer, D., & Cliford, R. M. (2007). *Family child care environment rating scale-revised edition (FCCERS-R)*. New York, NY: Teachers College Press

Hatch, J. A. (2002). *Doing qualitative research in education settings.* Albany, NY: SUNY Press.

Heifetz, R. A., & Linsky, M. (2002). *Leadership on the line: Staying alive through the dangers of leading.* Cambridge, MA: Harvard Business Review Press.

Hemmeter, M. L., Snyder, P. A., Fox, L., & Algina, J. (2016). Evaluating the implementation of the Pyramid Model for promoting social-emotional competence in early childhood classrooms. *Topics in Early Childhood Special Education, 36*(3), 133-146. Doi: 10.1177/0271121416653386.

Henrick, E.C., Cobb, P., Penuel, W.R., Jackson, K., & Clark, T. (2017). *Assessing Research-Practice Partnerships: Five Dimensions of Effectiveness.* New York, NY: William T. Grant Foundation.

Holloway, S. D., Kagan, S., Fuller, B., Tsou, L., & Carroll, J. (2001). Assessing child-care quality with a telephone interview. *Early Childhood Research Quarterly*, *16*(2), 165–189.

Hong, S. L. S., Howes, C., Marcella, J., Zucker, E., & Huang, Y. (2015). Quality Rating and Improvement Systems: Validation of a local implementation in LA County and children’s school-readiness. *Early Childhood Research Quarterly, 30,* 227–240.

Howes, C., Phillips, D. A., & Whitebook, M. (1992). Thresholds of quality: Implications for the social development of children in center-based child care. *Child Development*, *63*, 449–460.

Hwangbo, M., Votry, K., Joseph, E. G., & Boyd, S. (March, 2019). *Preliminary analysis: Coaching to fidelity pilot study.* Presented at the 2019 Society for Research in Child Development Biennial Meeting. Baltimore, MD. All Academic Code: 1452126

Ichikawa, J.J & Steup, M. (2018). The analysis of knowledge, *The Stanford Encyclopedia of Philosophy*(Summer 2018 Edition), Edward N. Zalta (ed.), Retrieved from <https://plato.stanford.edu/archives/sum2018/entries/knowledge-analysis>

Inmon, W., & Nesavich, A. (2008). *Tapping into unstructured data: Integrating unstructured data and textual analytics into business intelligence*. Upper Saddle River, N.J.: Prentice Hall.

Isner, T., Tout, K., Zaslow, M., Soli, M., Quinn, K., Rothenberg, L., & Burkhauser, M. (2011). *Coaching in early care and education programs and quality rating and improvement systems (QRIS): Identifying promising features.* Washington, DC: Child Trends.

Ivankova, N., Creswell, J., & Stick, S. (2006). Using Mixed-Methods Sequential Explanatory Design: From Theory to Practice. *Field Methods, 18(1)*, 3-20.

Johnson, R. B., Onwuegbuzie, A. J., Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research.* *1*, 112–133.

Joo, Y. S., Magnuson, K, Duncan, G. J., Schindler, H. S., Yoshikawa, H., & Ziol-Guest, K. M. (2020). What Works in Early Childhood Education Programs?: A Meta-Analysis of Preschool Enhancement Programs. *Early Education and Development,* *31*(1), 1-26. <https://doi.org/10.1080/10409289.2019.1624146>

Joseph, G. E., Feldman, E. N., Brennan, C., & Cerros, Cassandra, C. (2010). Seeds to Success modified field test year two preliminary descriptive report. *University of Washington Childcare Quality and Early Learning Research and Training.* Retrieved from <https://depts.washington.edu/cqel>

Karoly, L. (2014). *Validation Studies for Early Learning and Care Quality Rating and Improvement Systems.* RAND Education and RAND Labor and Population.

Killion, J. (2009). Coaches' roles, responsibilities, and reach. In J. Knight (Ed.), *Coaching: Approaches and perspectives*. (pp. 7-28). Thousand Oaks, CA: Corwin Press.

Kirby, G., Caronongan, P., Malone, L. M., & Boller, K. (2015). What do quality rating levels mean? Examining the implementation of QRIS ratings to inform validation. *Early Childhood Research Quarterly, 30,* 291–305.

Kline, R. B. (2016). *Methodology in the social sciences. Principles and practice of structural equation modeling (4th ed.).*Guilford Press.

Knight, D. S., Landry, S., Zucker, T. A., Merz, E. C., Guttentag, C. L., & Taylor, H. B. (2019). Cost-effectiveness of early childhood interventions to enhance preschool: Evidence from a randomized experiment in Head Start centers enrolling historically underserved Populations. *Journal of Policy Analysis and Management*, *38*(4), 891–917.<https://doi.org/10.1002/pam.22145>

Knight, J. (2009). Instructional coaching. In J. Knight (Ed.), *Coaching: Approaches and perspectives.* Thousand Oaks, CA: Corwin Press.

Kraft, M.A., Blazar, D., Hogan, D. (2016). *The effect of teaching coaching on instruction and achievement: A meta-analysis of the causal evidence.* Brown University. Working Paper.

Kraut, R. (2018). Aristotle's Ethics. *The Stanford Encyclopedia of Philosophy*(Summer 2018 Edition), Edward N. Zalta (ed.), Retrieved from <https://plato.stanford.edu/archives/sum2018/entries/aristotle-ethics/>

Keller, W. (2017). *Survey of Washington state early childhood coaches' communities of practice*. Seattle: University of Washington.

Langley, G. J., Moen, R. D., Nolan, K. M., Nolan, T. W., Norman, C. L., & Provost, L. P. (2009). *The improvement guide (2nd ed.).* San Francisco, CA: Jossey-Bass.

Lahti, M., Elicker, J., Zellman, G., & Fiene, R. (2015). Approaches to validating child care quality rating and improvement systems (QRIS): Results from two states with similar QRIS type designs. *Early Childhood Research Quarterly,* *30*, 280–290.<https://doi.org/10.1016/j.ecresq.2014.04.005>

LeCompte, M. & Goetz, J. (1982). Problems of reliability and validity in ethnographic research. *Review of Educational Research. 52*(1). 31-60.

Lemire, S., Christie, C., & Inkelas, M. (2017). The Methods and tools of improvement science. *New Directions for Evaluation,* *2017*(153), 23-33.

Loeb, S., Dynarski, S., McFarland, D., Morris, P., Reardon, S., & Reber, S. (2017). *Descriptive analysis in education: A guide for researchers. (NCEE 2017–4023).* Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance.

Lugo-Gil, J., Sattar, S., Boss, C., Boller, K., Tout, K., & Kirby, G. (2011). *The quality rating and improvement system (QRIS) evaluation toolkit (OPRE Report #2011-31).* Washington, DC: U.S. Department of Health and Human Services, Administration for Children and Families, Office of Planning, Research, and Evaluation.

Luisi, J. (2014). Part IV: Information Architecture. In *J. Luisi (Eds.), Pragmatic enterprise architecture: Strategies to transform information systems in the era of big data (pp.189-261).* Elsevier. <https://doi.org/10.1016/C2013-0-15404-9>

López, M. L., Watt, R., Litwok, D. & Grindal, T. (2017). *“Getting Ready to Succeed”; Washington State Integrated Data System (WA-IDS) Early Childhood Data Review Report.* Education Research and Data Center, Washington State Office of Financial Management, Olympia, WA.

Lynn, J., Baily, M. A., & Bottrell, M., et al. (2007). The ethics of using quality improvement methods in health care. *Ann Intern Med*. *146*(9), 666–673. Doi: https://doi.org/10.7326/0003-4819-146-9-200705010-00155

Mathias, D., Robinson, M., Agnamba, L. A., Talan, T., & Bandy, C. (2014, April). Engaging Directors/Practitioners in a CQI Approach. *Continuous Quality Improvement in Quality Rating and Improvement Systems (QRIS) BUILD Initiative*. 2014 QRIS National Meeting, Denver, CO.

Metz, A. & Bartley, L. (2012). How to use implementation science to improve outcomes for children. *Zero to Three, 32*(4). 11-18.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2013). *Qualitative data analysis: A methods sourcebook*. Thousand Oaks, CA: Sage Publications

Miller, O. A., & Ward, K. J. (2008). Emerging strategies for reducing racial disproportionality and disparate outcomes in child welfare: The results of a national Breakthrough Series Collaborative. *Child Welfare, 87*(2), 211. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/18972940

Moen, R. D., Nolan, T. W., & Provost, L. P. (2012). *Quality improvement through planned experimentation.* New York, NY: McGraw Hill.

National Center on Early Childhood Development, Teaching, and Learning. (n.d.). *Early care and education coaching: A closer look at coaching models in child care and head start.* Washington, DC: U.S. Government Printing Office.

Neuman, S. B. & Cunningham, L. (2009). The impact of professional development and coaching on early language and literacy instructional practices. *American Educational Research Journal.* *46*(2). 532-566. doi:10.3102/0002831208328088

Neufeld, S. B., & Roper, D. (2003). *Coaching: A strategy for developing instructional capacity: Promises & practicalities.* Boston, MA: Education Matters, Inc.

Nunan, D. (1999). *Research methods in language learning.* Cambridge: CUP. Eighth printing.

O’leary, Z. (2010). *The essential guide to doing your research project.* Thousand Oaks, CA: SAGE.

Oweugbuzie, A. J. & Johnson, R. B. (2006). The “validity” issues in mixed research. *Research in the Schools. 13*(1), 48-63.

Paulsell , D., Tout, K., & Maxwell, K. (2013). Chapter 14: Evaluating implementation of Quality Rating Improvement System In *Halle, T., Metz, A., & Martinez-Beck, I. (2013).* *Applying implementation science in early childhood programs and systems (pp 269-293)*. Baltimore: Paul H. Brookes Pub.

Perlman, M., Zellman, G. L., & Le, V. (2004). Examining the psychometric properties of the early childhood rating scale-revised (ECERS-R). *Early Childhood Research Quarterly*, 19(3), 398–412.

Perla, R. J., & Parry, G. J. (2011). The epistemology of quality improvement: It's all Greek. *BMJ Quality & Safety,* *20*(Suppl. 1), 24-7.

Perla, R. J., Provost, L. P., & Parry, G. J. (2013). Seven propositions of the science of improvement: exploring foundations. *Quality management in health care*, *22*(3), 170–186. doi:10.1097/QMH.0b013e31829a6a15

Preston, S. H., Heuveline, P., & Guillot, M. (2001). *Demography: Measuring and modeling population processes.* Blackwell Publishers Ltd. Oxford:United Kingdom.

Phillipsen, L. C., Burchinal, M. R., Howes, C., & Cryer, D. (1997). The prediction of process quality from structural features of child care. *Early Childhood Research Quarterly, 12,* 281–303.

Phillips, D., Mekos, D., Scarr, S., McCartney, K., & Abbott-Shim, M. (2000). Within and beyond the classroom door: Assessing quality in child care centers. *Early Childhood Research Quarterly, 15,* 475–496. Sakai, L., Whitebook, M., Wishard, A., & Howes, C. (2003). Evaluating the early childhood rating scale: Assessing differences between the first and revised edition. *Early Childhood Research Quality, 18,* 427–445.

Pianta, R. C., La Paro, K. M., & Hamre, B. K. (2008). *Classroom assessment scoring system (CLASS) manual, pre-K*. Baltimore, MD: Paul H. Brookes Pub. Co..

Pianta, R. C., Mashburn, A. J., Downer, J. T., Hamre, B. K., & Justice, L. (2008). Effects of web-mediated professional development resources on teacher–child interactions in pre-kindergarten classrooms. *Early Childhood Research Quarterly*. *23*(4). 431-451.

Raudenbush, S., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed., Advanced quantitative techniques in the social sciences; Thousand Oaks: Sage Publications.

Sandall, S. R., Schwartz, I. S., & Lacroix, B. (2004). Interventionists’ Perspectives about Data Collection in Integrated Early Childhood Classrooms. *Journal of Early Intervention*, *26*(3), 161–174.<https://doi.org/10.1177/105381510402600301>

Scarr, S., Eisenberg, M., & Deater-Deckard, K. (1994). Measurement of quality in child care centers. *Early Childhood Research Quarterly, 9,* 131–151.

Schoonenboom, J. & Johnson, R. B. (2017). How to construct a mixed methods research design. *Köln Z Soziol. 69*(2). 107-131

Smith, S., Schneider, W., & Kreader, J.L. (2010). *Features of professional development and on-site technical assistance in child care quality rating improvement systems:* *A survey of state-wide systems.* New York, NY: National Center for Children in Poverty, Columbia University Mailman School of Public Health.

Shewhart, W. A. (1928; 1931). *Economic control of quality of manufactured product.* Lancaster, PA: Lancaster Press, Inc.

Shilder, D. (2019). *Washington’s Expanded Learning Opportunities: A promise of a systems approach.* The BUILD Initiative | Raikes Foundation. <https://elevatewashington.org/wp-content/uploads/2020/06/Digital-ELO-Report_6-19.pdf>

Soderberg, J., Joseph, G. E., Stull, S., & Hassairi, N. (2016). *Early Achievers standards validation study: Final report*. Washington State Department of Early Learning.

Spillane, J. P., Reiser, B. J., & Reimer, T. (2002). Policy implementation and cognition: Reframing and refocusing implementation research. *Review of Educational Research, 72*(3), 387–431.

State of Washington Open Data Platform. (2021). *Education research and data center.* Washington State Department of Early Learning. Retrieved from<https://data.wa.gov/>

Stipek, D., Clements, D., Coburn, C., Franke, M., & Farran, D. (2017). PK–3: What does it mean for instruction? Social Policy Report, 30(2), 1–22.

Stull, S. (2015). *The predictive validity of the Washington kindergarten inventory of developing skills GOLD’s literacy domain: Why assessment matters for Washington’s earliest readers* (Unpublished doctoral dissertation). University of Washington, Seattle, Washington, United States.

Subotić, D., Poščić, P., & Slavuj, V. (2013). OLAP tools in education*.* *Media, culture, and public relations. 4*(1)*.* 34-44.

Tang, J., Hallam, R. A., Francis, J., & Sheffler, K. (2020). Exploring the Relationship Between Quality Rating and Improvement System Supports and Global Quality in Family Child Care. *Child & Youth Care Forum*, *49*(6), 893–914.<https://doi.org/10.1007/s10566-020-09565-2>

Tarrant, K., & Huerta, L. A. (2015). Substantive or symbolic stars: Quality rating and improvement systems through a New Institutional lens. *Early Childhood Research Quarterly, 30,* 327–338. doi:10.1016/j.ecresq.2014.04.002

Thagard, P. (1988). *Computational philosophy of science.* Cambridge, MA: MIT Press.

Tout, K., Zaslow, M., Halle, T., & Forry, N. (2009). *Issues for the next decade of quality rating and improvement systems, OPRE Issue Brief.* Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Tout, K., Isner, T., & Zaslow, M. (2011). *Coaching for Quality Improvement: Lessons Learned from Quality Rating and Improvement Systems (QRIS)*. Child Trends. <https://www.childtrends.org/publications/coaching-for-quality-improvement-lessons-learned-from-quality-rating-and-improvement-systems>

Tout, K., Starr, R., Isner, T., Daily, S., Moodie, S., Rothernberg, L., & Soli, M. (2012). *Executive summary of the Kentucky STARS for KIDS NOW Process Evaluation, Evaluating Brief #1.* Washington, DC: Child Trends.

Tout, K., Starr, R., Soli M., Moodie, S., Kirby, G., & Boller, K. (2010). *Compendium of quality rating systems and evaluations.* Washington, DC: Child Trends.

U.S. Department of Education. (2011). *Race to the Top Early Learning Challenge application for initial funding.* Retrieved from http://www2.ed.gov/programs/ racetothetop-earlylearningchallenge/applicant-phase-1.html

Washington State Department of Children, Youth, and Families (DCYF). (2017). *Racial Equity Initiative Data Report 2017.* Washington State Department of Children, Youth, and Families.

Washington State Department of Children, Youth, and Families (DCYF). (2018). *The early start act 2018 annual report.* <https://www.dcyf.wa.gov/sites/default/files/pdf/reports/2018_Early_Start_Act_Report.pdf>

Washington State Department of Children, Youth, and Families (DCYF). (2019). *Report on outcome measures and progress on agency goals.* Washington State Department of Children, Youth, and Families.

Washington State Department of Children, Youth, and Families (DCYF). (2020). *Early Achievers participant operating guidelines.* Washington State Department of Children, Youth, and Families.

Washington State Department of Children, Youth, and Families (DCYF). (n.d.). *Race to the Top - Early Learning Challenge.* <https://www.dcyf.wa.gov/about/government-community/legislative-federal-relations/race-to-top>

Wellman, B. & Lipton, L. *Data-driven dialogue: A facilitator’s guide to collaborative inquiry* (5th ed.)*.* MiraVia LLC.

WestEd. (n.d.). *Effective coaching: Improving teacher practice and outcomes for all learners.* WestEd National Center for Systemic Improvement. <https://files.eric.ed.gov/fulltext/ED591448.pdf>

Wolery, M. (2004). Monitoring children’s progress and intervention implementation. In *M. Mclean, M. Wolery, & D.B. Bailey (Eds.), Assessing infants and preschoolers with special needs (3rd ed. pp. 545-584).* Upper Saddle River, NJ: Pearson Merrill Prentice Hall.

Whitebook, M., Howes, C., & Phillips, D. (1989). *Who cares? Child care teachers and the quality of care in America. Final report of the National Child Care Staffing Study.* Oakland, CA: Child Care Employee Project.

Vygotsky, L. S. (1987). *The collected works of l.S. Vygotsky: Problems of general psychology including the volume thinking and speech (N. Minick, Trans. Vol. 1).* New York, NY: Plenum.

Zaslow, M., Martinez-Beck, I., Tout, K., & Halle, T. (2011). *Quality Measurement in Early Childhood Settings*. Washington DC: Brookes Publishing Company.

Zaslow, M. & Tout, K. (2014). Reviewing and Clarifying Goals, Outcomes and Levels of Implementation: Toward the Next Generation of Quality Rating and Improvement Systems (QRIS). OPRE Research Brief #2014-75. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Zaslow, M., Tout, K., Halle, T., Vick Whittaker, J., & Lavelle, B. (2010). *Toward the identification of features of effective professional development for early childhood educators*. Child Trends for the U.S. Department of Education, Office of Planning, Evaluation and Policy Development.

Zellman, G. L., & Fiene, R. (2012). Validation of quality rating and improvement systems for early care and education and school-age care. *Research-to-policy*, research-to-practice brief. OPRE 2012-29. Retrieved from <https://eric.ed.gov/?id=ED534457>

Zellman, G. L., & Karoly, L. A. (2015). Improving QRISs through the use of existing data: A virtual pilot of the California QRIS. Early Childhood Research Quarterly, 30, 241–254.

Zeng, S., Douglass, A., Lee, Y., & DelVecchio, B. (2021). Preliminary efficacy and feasibility of a business leadership training program for small child care providers. *Early Childhood Education Journal, 49*(1), 27–36. <https://doi.org/10.1007/s10643-020-01046-4>

Zeng, S., & Sandall, S. R. (2017). *Comparing validity evidence of two ECERS-R scoring systems*. Seattle: University of Washington.

Zohrabi, M. (2013). Mixed method research: Instruments, validity, reliability and reporting findings. *Theory and Practice in Language Studies.* 3(2), 254-262. doi:10.4304/tpls.3.2.254-262

Zweig, J., Irwin, C. W., Kook, J. F., & Cox, J. (2015). *Data collection and use in early childhood education programs: Evidence from the Northeast Region (REL 2015–084).* Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northeast & Islands. <http://ies.ed.gov/ncee/edlabs>.

**List of Figures and Tables**

**Figure 1**

Table

Description automatically generated*The Major Mixed Methods Design Types (Creswell, 2006, p.87)*

**Figure 2**

*WELS/PRISM Early Achievers Data Management Process PipelineDiagram

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*Note.* The access to WELS data set is currently restricted to Early Achievers network administrators and the raw data acquired for the current study will not be shared publicly; the author inquired access to WELS via *Application Programming Interface* (API) - A set of ID and Password which enables access to the backend database of WELS: PRISM. The data set is scheduled to be retired in July 2021 and will be replaced by WACompass (TBD) - a *Salesforce* based database platform; MERIT (DCYF, n.d.) is the Workforce Registry and official system of record for early learning professionals in Washington State. MERIT is used for record and recognize the growth and achievements of the early learning field statewide (DCYF, n.d.).

**Figure 3**

*The coding process in inductive analysis (Thomas, 2006, p.242)*

**![Table

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**Figure 4**

*Reported Coaching Activities on WELS-PRISM-Notes Cube by Early Achievers Program Type (January 1, 2016 - May 12, 2021)*Chart, bar chart

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Chart, bar chart

Description automatically generated

Data retrieved from Washington State Dept. Children, Youth, and Families Web-based Early Learning System (WELS)

*Note.* Figure 4 demonstrates the proportion of coaching activities reported per program type of Early Achievers visualized from WELS data set in a bar chart. ECEAP represents Early Childhood Education and Assistance Program funded by Washington State for children 3 and 4.

**Figure 5**

*Reported Frequency of Coaching Objectives on WELS-PRISM-Notes Cube by Early Achievers Program Type (January 1, 2016 - May 12, 2021)*Application

Description automatically generated with low confidence

Data retrieved from Washington State Dept. Children, Youth, and Families Web-based Early Learning System (WELS)

*Note.* Figure 5 demonstrates the frequency of coaching objectives reported per program type of Early Achievers. The data set was queried from the statewide WELS database and visualized on a heat map. The color density represents frequency of reported coaching objectives. Darker cells present relatively higher rates of reported objectives compared to cell values across all three programs whereas the lighter color represents low frequency of coaching objectives. The site note count reported on this figure ranged from 1 to 10,663 records. ECEAP represents Early Childhood Education and Assistance Program funded by Washington State for children 3 and 4.

**Figure 6**

Graphical user interface

Description automatically generated with medium confidence*Reported Avg. Hours of Coaching Objectives on WELS-PRISM-Notes Cube by Early Achievers Program Type (January 1, 2016 - May 12, 2021)*

*Note.* Figure 6 demonstrates the average hours of coaching objectives spent per program type of Early Achievers. The data set was queried from the statewide WELS database and visualized on a heat map. The color density represents average hours of reported coaching objectives. Darker cells present relatively higher hours spent on reported objectives compared to cell values across all three programs whereas the lighter color represents low average hours spent on coaching objectives. The site note avg. hours reported on this figure ranged from .25 hours (15 mins) to 8 hours. ECEAP represents Early Childhood Education and Assistance Program funded by Washington State for children 3 and 4.

**Table 1.**

*Categories for inductive analysis: QRIS implementation partner perspectives*

|  |  |  |
| --- | --- | --- |
| **Category** | **Subcategory** | **Description** |
| *System-level* | QRIS | Comments/concerns/challenges around the design of Early Achievers system |
| WELS | Comments/concerns/challenges around WELS database system |
| *Agency-level* | Philosophy | Comments/concerns/challenges around agency coaching philosophy |
| Structure | Comments/concerns/challenges around agency structure for coaches |
| Training | Comments/concerns/challenges around onboarding training for coaches offered by the agency |
| *Practice-level* | Buy-in | Comments/concerns/challenges around buy-in and rapport from coachees (i.e. providers, directors, etc). |
| Caseload | Comments/concerns/challenges around coach caseload |
| Intentionality | Comments/concerns/challenges around intentionality and goals around coaching |
| Success | Comments/thoughts on successful cases on coaching practices |
| Virtual Coaching | Comments/concerns/challenges around virtual coaching approaches |
| *Wishes & Hopes* | | Wishes addressed by interviewee |

**Table 3.**

*Overview of sites characteristics included in the coaching activity analysis*

|  |  |  |  |
| --- | --- | --- | --- |
| **Year / Program Type** | **Family Home Care (% of program in the reported year)** | **Child Care Center**  **(% of program in the reported year)** | **ECEAP**  **(% of program in the reported year)** |
| 2016 | 379 (31.8%) | 574 (48.2%) | 239 (20.1%) |
| 2017 | 565 (38.6%) | 663 (45.3%) | 234 (16.0%) |
| 2018 | 1095 (54.0%) | 777 (38.3%) | 155 (7.6%) |
| 2019 | 1606 (58.5%) | 1004 (36.5%) | 137 (5.0%) |
| 2020 | 1654 (60%) | 999 (36.2%) | 104 (3.8%) |
| 2021 | 1373 (59.8%) | 858 (37.4%) | 65 (2.8%) |

# List of Appendices

**Appendix B.** Codes for R data merge (Coach roster & training data) in RStudio

**Appendix C.** Interview questions – Coach & Coach leads

**Appendix D.** CCA of WA Coaching Staff Information (March 2021)

**Appendix A.**

*Current Status of QRIS in States (BUILD, 2017)*

**Map

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**Appendix B.**

*House Framework in Early Achievers (Keller, 2017) & House Framework in QRIS (BUILD, 2017)*

A picture containing website

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**Text

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## Appendix B. Codes for R data merge (Coach roster & training data) in RStudio

---

title: "Codes for Merging Coach Data to Training Data"

author: "Min Hwangbo"

date: "4/6/2021"

output:

html\_document:

preserve\_yaml: true

toc: true

toc\_float: true

keep\_md: true

published: false

---

```{r setup, include=FALSE}

knitr::opts\_chunk$set(echo = TRUE)

```

# Step 1: Load packages

```{r}

library(readxl) # Excel file loading package

library(readr) # CSV file loading package

library(tidyverse) # Data transformation package

```

# Step 2: Loading data sets

```{r}

rosterdata <- read\_excel("Data/ECEAPCoachData\_DCYFXPPIRP\_2019-21.xlsx")

trainingdata <- read\_csv("Data/CleanRoster\_CFT\_2015-2021.csv")

# Quality check

ls(rosterdata)

ls(trainingdata)

```

# Joining data set - next steps: Create a column for "Name" as a unique primary key(s)

```{r}

df <- inner\_join(rosterdata,

trainingdata, by = "Name")

```

# Step 3: Data transformation: `Select` vars names

```{r}

dataFY1920 <- df %>%

select("Region", "Name", "E-mail", "Training\_StartDate", "Coach\_FY1920Active", "Coach\_FY2021Active", "Completion") %>%

filter(Coach\_FY1920Active == "1") %>%

filter(Completion == "1") %>%

as.data.frame()

# Data framed the 2019-20 coaches who have completed the Coach Framework Training.

dataFY2021 <- df %>%

select("Region", "Name", "E-mail", "Training\_StartDate", "Coach\_FY1920Active","Coach\_FY2021Active", "Completion") %>%

filter(Coach\_FY2021Active == "1") %>%

filter(Completion == "1") %>%

as.data.frame()

# Data framed the 2020-21 coaches who have completed the Coach Framework Training

```

## Step 3a: So... what did we find?

```{r}

count(dataFY1920) # 64 out of 140 (46%) ECEAP coaches in FY 19-20 have completed CFT

count(dataFY2021) # 82 out of 164 (50%) ECEAP coaches in FY 20-21 have completed CFT

```

## Step 3b: Filter only needed variables by `select` fcn including the following:

\* "Region"

\* "ECEAP\_Contractor\_Name"

\* "ContractorOrganizationID"

\* "First\_Name"

\* "Last\_Name"

\* "CCA\_affiliated"

\* "E-mail"

\* "Coach\_FY1920Active"

\* "Coach\_FY2021Active"

\* "Coach\_FY2021Change"

\* "Date\_ECEAPCoachTraining"

\* "Date\_UWCFT"

\* "Training\_StartDate"

```{r}

finaldf <- df %>% select("Region", "ECEAP\_Contractor\_Name", "ContractorOrganizationID", "First\_Name", "Last\_Name", "CCA\_affiliated", "E-mail", "Coach\_FY1920Active", "Coach\_FY2021Active", "Coach\_FY2021Change", "Date\_ECEAPCoachTraining", "Date\_UWCFT", "Training\_StartDate") %>% as.data.frame()

```

# Step4:: Save it as a csv file

```{r}

write.csv(finaldf, "CFTRoster\_ECEAP\_042121.csv")

```

## Appendix B. Interview questions – Coach & Coach leads

# *(adopted from California Coaching Certification Task 2 Workgroup: the current state of coaching, n.d.)*

**Overview**

1. Tell me how coaching currently works in your community.
2. What types of programs receive coaching? (e.g., centers, FCC, Head Start, public school facilities, etc)
3. Who do you usually coach? (Directors? Teachers? Teaching staff? Others?)
4. What happens in a typical coaching visit? Describe what happens when a coach visits a provider.
5. What are topics (content, focus) on which coaching is typically provided? How are these selected? (e.g., coach selects, teacher selects, director selects, co-selected based on program assessment, etc.)
6. How frequent are the coaching sessions (is it mandated or flexible)?
7. How long does a coaching session last?
8. Is the coaching session always face to face? If remote, describe
9. Do you use any forms of technology to document or facilitate coaching?
10. Does your organization provide a cultural and linguistic match between the coach and coachee? What success/challenges have you had on this?

**Coach Skills and Training**

1. What does an effective coach look like to you?
2. Do coaches have education or experience requirements? How was that decided?
3. How do you measure a coach’s skill and value?
4. How is the impact of coaching measured? (tool, frequency, etc)
5. What initial onboarding do your coaches receive? Can you share training models, agendas, etc. for coach onboarding training?
6. What ongoing training and support do your coaches receive? Can you share training models, agendas, cost, funding source, etc.?

**Lessons Learned**

1. What positive outcomes have you seen come from coaching, specifically aligned with QRIS outcomes?
2. What have been your greatest challenges with coaching as an Early Achievers coach?
3. What changes would you like to see in the next iteration of Early Achievers?
4. What are your concerns about the change in QRIS?
5. If you had a magic wand, where would you want the Early Achievers system to be in 1 year, 3 years, or 5 years? Why?

## Appendix C. CCA of WA Coaching Staff Information (March 2021)

Graphical user interface

Description automatically generated with medium confidence

Graphical user interface

Description automatically generated