**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 2,757 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 overall 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: In what ways the perspectives from Early Achievers partners explain the quantitative results reported on the statewide WELS database?
* RQ4: What are perspectives from QRIS implementation partners for improving the current system for supporting coaches?

Findings suggest the current caseload among Early Achievers coaches are significantly higher than results from other studies; types of coaching activities reported on statewide database varied across program type; 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), an overview of Continuous Quality Improvement (CQI) including its theoretical origin, coaching in early learning settings, and briefly describe coaching system in Washington QRIS.

## 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 (Lahti et al., 2015) 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, (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 et al., 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 consensus around 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).

### Roles, Models, and Dosage, Frequency, and Format of Coaching

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). Smith et al. (2012) also argued similar perspective as coaches play a key role in supporting child level outcomes, yet there’s inconsistency or lack of understanding what would be the role of coaching in the literature. Establishing a policy to ensure what is considered the model, dosage, amount, and role of on-site can deliver consistency and as noted by Smith et al. (2012), the amount of on-site coaching can be adjustable by administrators or key stakeholders in QRIS monitor and reflect the information. Reflecting on Killion (2009) and Smith et al. (2012) arguments, it seemed similar in the context of Early Achievers that 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).

The 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 importance of evidence-based practice or data-driven decision making emphasized by the state (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). And this makes it difficult for policymakers to make decisions on as there’s little information is available around dosage, frequency, and format of coaching in the literature (Artman-Meeker et al., 2015).

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).

To sum up in information about coaching in literature, coaching plays a crucial role as a catalyst to improve teachers’ teaching practices (Artman-Meeker, et al. 2015; Buell et al., 2018; Bratsch-Hines, et al., 2020; Neuman & Cunningham, 2009). It is still unclear coaching yields child level outcomes in QRIS setttings (Hong et al., 2014; Sabol et al., 2013; Sabol & Pianta, n.d.; Smith et al., 2012), yet it does improve classroom quality (Conroy & Sutherland, 2018; Isner et al., 2011; Neuman & Wright, 2010) which affects child level outcomes in distal. There is also need to clarify what’s considered recommended dosage of coaching (Smith et al., 2012) or what roles (Lloyd & Modlin, 2012; Killion, 2009), and how do coaches and system stakeholders use coaching information for better decision making processes.

### Coaching System in Early Achievers

#### *Implementation partners in Early Achievers and its role*

***Child Care Aware of Washington*** (CCA of WA) is a state non-profit agency for childcare 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 employs the majority 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).

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)*** 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.

#### *Early Achievers Coaching Framework*

Early Achievers employed a similar framework to the PDSA cycle that can be found from the implementation science field or 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.

***Practice-Based Coaching*** (PBC) was implemented as a framework in Early Achievers (CQEL, 2015 adopted from Snyder et al., 2015) and currently offered during the 2-day Coach Framework Training offered by Cultivate Learning (formerly known as CQEL). The PBC model has four key components including ***collaborative partnerships***, ***shared goals and quality improvement plans, focused observations,*** and***reflecting and sharing feedback****.*

***Collaborative partnership*** is a partnership activity between a coach and teacher to set goals and identify action steps for implementing a practice at a program level (Snyder et al., 2015). Snyder et al. (2015) suggests activities in the collaborative partnership includes discussions around why, when and how practices will be implemented; conversations around problem solving and strategy for practice implementation, and joint reflection and feedback about an observed practice by a coach. The process requires two-way interactions and the CQEL (2015) also noted the partnerships become critical aspect for coaching as it helps to individualized to the strengths, needs, shared understandings, and unique desired outcomes of both the provider and the coach.

***Shared goals*** *and* ***quality improvement plans*** includes processes for setting initial goal and processes for ongoing-goal and action plans (CQEL, 2015). During quality improvement planning, the action steps, resources needed to accomplish the action steps, and supports needed to reach the goal are specified. The plan also includes a timeline for a coach and a provider to review progress on goals.

***Focused observation*** is another component of PBC model for gathering information about implementation or desired teacher behavior and instructional practice during classroom routines, activities, and transitions (CQEL, 2015). Focused observation (CQEL, 2015) can be conducted by live observations or video recordings for a provider and a coach to review in the later time. The component also includes strategies such as modeling instructional practice or providing a verbal vignette/prompts.

***Reflecting*** and ***sharing feedback*** allows a coach and a provider to focus on reflecting support strategies for improving teaching practices based on the information gathered from focused observation and sharing feedback about what has been observed during the focused observation stage including implementation of teaching practices (CQEL, 2015). This step involves a coach and a provider to share and recognize progress towards desired outcomes as well as a chance for a coach to provide constructive feedback for improving and refining teaching practices. The above components of PBC are intended to support coaches and providers and to ensure the team are working towards a shared goal.

#### *Coach Training, Requirements, and Roles*

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. Despite the CCA of WA declined to share the contents as the module currently under revision process, an administrator from ECEAP described the contents include overview of Early Achievers, overview of Early Achievers partners, Early Learning Guidelines, training and guidance on cross-cultural communications, information about coach support team, and required activities as a coach such as documentations on statewide database coach log (Web-Based Early Learning; WELS), participation in monthly webinars and COPs, certified in CLASS (Pianta et al., 2008) site quality assessment tools, and complete Coach Framework Training upon six months of hire. The recent publication from Early Achievers revision overview (DCYF, 2021) provided additional information for coaches beginning July 2021. Early Achievers coaches throughout the state will also serve as a technical support assistant to co-create individual Early Achievers participant plans. DCYF (2021) stated coaches are asked to meet with Early Achievers participants before the Early Achievers will meet with participants before the process starts to any questions that participants have. Coaches will also be asked to continue provide support on online engagement platform – Coaching Companion: an online coaching application for coaches and Early Achievers professionals to engage in conversations and share exemplar practices via video observations and resource sharing (DCYF, 2021).

# Research Questions

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

* RQ1: What is the overall 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: In what ways the perspectives from Early Achievers partners explain the quantitative results reported on the statewide WELS database?
* RQ4: What are perspectives from QRIS implementation partners for improving the current system for supporting coaches?

# 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*, *participants*, *data collection and analysis*, and *validity, reliability, and methodological integrity* of the current study.

## 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). See Figure 1 for 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 COVID-19 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 and I hope the qualitative data presented by interview participants articulates what’s occurring within Early Achievers coaching system (See Table 1 for data collected for the current study).

## Participants

Administrative and support professionals (*n=22)* in the Early Achievers implementation partners were invited to participate in the latter part of the study as a case study. As recommended by officials in CCA of WA network office and ECEAP programs, as access to coaches were denied by these officials, a total of six coach support administrators/training specialist in the partner agencies participated in the 1-hour Zoom interview (See Table 6 for more information on participant demographics of the current study).

**Recruitment.** Before each interview, I informed participants on the following information (See Appendix F for more information on consent form and recruitment letter): 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 race/ethnicity; current role in the Early Achievers partner agency; years of experience in the current position; years of experience in the early childhood position; and specialty in coaching support network agency. Participants selected for the current study are considered representative sample of the early childhood professionals (Kisker et al., 1991; Saluja, Early, & Clifford, 2002) as all participants (N=6) in the current study were Caucasian/White female from non-Hispanic background with more than 20 years of experiences in the early learning field.

**Interview Questions and Procedures.** The following open-ended questions were asked in the beginning of the interview session:

* 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).
* Do you feel WELS is gathering what's considered intended information for the Early Achievers system? Please share your perspectives.
* 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. Despite the interviews were considered semi-structured, after five to ten minutes of checking in with interview participants, the interview process naturally became unstructured interviews. This may be due to the fact that the interview participants and I had established professional relationships over the past ten years in Early Achievers system. Some of the following questions were asked after the first two questions were introduced including “What are some of the characteristics that you have seen from coaches as successful implementation practices” yet it is not addressed on WELS? and “Could you share challenges of the current system that’s particularly affecting your agency?” The intent of additional two questions was to inquire case-specific scenarios that is unique to the role of each Early Achievers implementation partners.

I will explain more around how the qualitative information was used for interpreting quantitative results in the *data collection* *and analysis* section.

## Data Collection and Analysis

**Quantitative data(WELS)**I collected two sets of quantitative data via 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*** - OLAP 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). OLAP is a certain classification of a database which enables educational organizations to support implementation of business intelligence (Subotic, et al., 2013). Originated from E.F. Codd, a British mathematician in the 1970s, 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...” (Luisi, 2014, p.189). 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.

Similar to the findings from literature, as states do not systematically collect information on how early childhood education programs collect and use such data (Zweig et al., 2018), I created a WELS data pipeline for the purpose of current study (See Figure 2).

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. As over 30 variables were recorded, the following presents measures of top five reported coaching objectives (DEL, 2015, pp 31-34) addressed in the current analysis (See Table 3 for all variables included in the current study):

***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.

**Data Analysis (WELS).**Once the data collection was complete, I conducted a series of descriptive trend analysis and data visualization by adopting a Business Intelligence (BI) analysis approach via Tableau – a computerized support for outlining a set of concepts and methods for business decision making processes (Guran et al., 2009; Nylund, 1999). BI software is used in educational organizations to reduce the complexity of administrative management and sometimes applied for statistical analysis of data warehouse which contains large amount of data (Namana & Venkatesh, 2017). The following fields were queried in WELS-DW to analyze measures of coaching objectives:

***Site Type Name:*** Text variable describing the characteristic of an Early Achievers program including Family Home, Child Care center, and ECEAP;

***Note Objectives*:** Coaching objectives selected by a coach from drop down menu of 30+ categories including administrative items such as *data input*, *travel time, grant or award assistances;* practice-based coaching activity items such as *goal setting/action plans, collaborative partnership/parallel process, live classroom/teacher observation, Community of Practice, etc;*

***Site note count***: Raw counts of coaching objectives reported on the WELS – Notes cube, and;

***Site note duration****:* Hours of coaching objectives reported on the WELS – Notes cube.

**Data visualization (WELS).** *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) from 2014 to 2021 school year. *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 from 2014 to 2021 school year.

The WELS data set did not include manuals, documentation describing variables available in WELS, nor how data quality check was conducted on coaching logs. This could be in fact due to the upcoming revision of the Early Achievers system (2021) as well as the retirement of WELS which is projected in July 2021. WELS will be substituted by WACompass, a Salesforce platform effective mid-2021. All measures in the data sets were treated as raw string values (frequency of text data or selected item from a dropdown menu) and described into either count of frequency or precalculated field (i.e. average time spent on coaching objectives) as structured in the system. Extraction of individual cases were prohibited by DCYF and I was able to access the data set using application programming interface via restricted connection to Microsoft Analytic Services.

**Data Collection (Coach Demographics).** 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). I also acquired a series of Coach Framework Training participant information from University of Washington Professional Learning and Coaching team (from 2015 - 2020). Since the coach workforce data sets collected by agency representatives included individual level information that can be later linked to WELS database for further analysis, representatives from CCA of WA raised concern; instead CCA of WA data team shared a pre-populated report in a PDF format (see Appendix E for more information). For ECEAP programs, per information provided by the ECEAP representative, the ECEAP system currently does not collect any demographic information for coaches or directors who share coaching duties yet shared their interest in collecting such information in the future.

**Data Analysis (Coach Demographics).** By outer joining (Rockoff, 2017) the data sets acquired from ECEAP programs and Cultivate Learning via RStudio tidyverse package (Wickham et al., 2019), I was and link matching records by a primary key (i.e. Full name of a coach) for calculating proportion of ECEAP coach workforce completed Coach Framework Training. The code for this process is presented in Appendix B.

In addition, for the last iteration of quantitative data analysis, I calculated the retention rate of Early Achievers coach workforce in CCA of WA and ECEAP. 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*

Calculating the retention rate of the workforce may explain the trends in lack of information around coach overview and lack of in-depth engagement in coaching practices. As above three quantitative data analysis may present some values to the status of coaching system in Early Achievers, this does not provide a holistic understanding of what practices are currently adopted by coaches nor how the system values and capture the intended beliefs that partner agencies provide to the system. I decided to inquire additional information by interviewing system actors of Early Achievers as described in the *Participant Recruitment* section.

**Data Collection (Interview).** For the latter sequence of the study, 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 D for original interview questions for Early Achievers coaches). Early Achievers implementation partners across programs declined my request due to 1) conflict of interest around the research questions being evaluative on identifying coaching practices among Early Achievers coaches and 2) concerns around coaches’ 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.

Upon the interview was held, I reviewed the interview recordings within 48 hours by segments based on the timestamp collected from the Zoom transcription system in the Words format. 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.

**Data Analysis (Interview).** For analyzing qualitative interview data sets (N=6), I adopted Thomas’s general inductive approach for developing codes for the current analysis by following below steps (2006, p.241):

* *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 and Figure 4 describes the codes created for the current analysis After conducting an initial reflection of interview transcripts, the categories on Table 2 were developed for the current analysis by analyzing the context of each perspectives via cross-case analysis based on participants’ association of Early Achievers partners. *Cross-case analysis* is one of the forms for examining more than one cases (Stake, 1995; Yin, 2009) which involves articulating all themes that are similar and different in all cases in the study (Creswell, 2005). *With-in case* analysis (Creswell, 2005) was first applied to generate broader contextual themes for each case and themes addressed during with-in case analysis were presented as a whole in the findings (See Figure 7, 8, & 9 for concept maps yielded from with-in case 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 my 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). I also want to address due to the global COVID-19 pandemic, as of July 2020, 14% of childcare 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 childcare 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, childcare 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*.

# 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.

### RQ1. Status of Early Achievers workforce: Demographics, Caseload, and Participation in Early Achievers Coach Framework Training.

***Coach Demographics and Caseload – CCA.*** QRIS implementation partners (Child Care Aware of Washington [CCA of WA] & Early Childhood Education and Assistance Program [ECEAP]) reported 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 4 describes the overview of Early Achievers coach workforce analyzed for the current study.

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%)

According to the dashboard information from Early Achievers team (DCYF, 2021), as of April 2021, 3,845 sites are currently enrolled in Early Achievers including 1,574 center-based cares and 2,271 Family Childcare (FCC) programs. From the available data sources, despite limited information is available to examine how distribution of coaches employed by each region are considered equitable based on geographical characteristics (i.e. urban v. rural) or CCA partner agencies (i.e. Central, Eastern, King & Pierce, etc), each CCA of coaches support on average 25.2 sites in 2020-21. The findings also suggest a licensed program in Early Achievers is required to work with a coach with capacity of supporting .04 per given year. This ratio is one of the lowest among available literatures (Artman-Meeker et al., 2015; See Figure 3 for more information). This was alarming to me as majority of the studies included in the meta-analysis (Artman-Meeker et al., 2015) calculated coach/teacher ratio whereas the current analysis represents coach/site ratio of Early Achievers programs. If the current study examined number of teachers in each Early Achievers site, the result would be much lower than the study conducted by Powell (2010a) at 0.03 rate.

About 50% of the CCA of WA coach workforce (n=152) represented in the pre-populated report (Appendix E) were White/Caucasian. 20% of CCA coaches were identified as Hispanic or Latino. Less than 15% of the CCA workforce represented coaches from African American, Asian American, or Alaskan/Pacific Islander Native. Experiences in the early childhood field represented homogeneous characteristics. 148 (98%) out of 152 CCA coaches have experiences in working in childcare settings. 121 (79%) out of 152 CCA coaches worked in the field over 10 years whereas 107 (70%) out of 152 CCA coaches reported they have less than 5 years of experiences as a Relationship-Based Professional Development (RBPD) specialist – a coach. As the term RBPD specialist was used in the system since 2015 (DEL, 2015) and coaches are expected to perform multiple roles in Early Achievers (Keller, 2017), the difference between coach’s experiences in early childhood settings and current role was not surprising.

***Coach Demographics and Caseload – ECEAP.*** 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. On average, each ECEAP support 2.55 sites across the programs. The result was much feasible than the findings from CCA of WA coach workforce (1:0.04) as each ECEAP program has access to .39 coach across the programs.

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%

ECEAP coaches are mostly working with 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 transition of role among ECEAP coaches during COVID-19 to for providing remote support instead of in-class visits; there was a brief period of suspension of communications of all training information due to staffing and furloughing at partner agencies in the beginning of 2020; the training, which used to be offered in in-person format to a virtual synchronous (live) platform in the past six months may have increased the participation rate and accessibility to 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. Despite the framework is considered the backbone of the Early Achievers continuous quality improvement and coaching, not all Early Achievers coaches in Washington state are trained on its coach framework.

Attention is needed when articulating the current findings. As validated by CCA of WA data team and ECEAP administrator, not all coaches in Early Achievers are employed full-time. 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. The current body of literature does not recommend what is considered feasible coach caseload nor dosage, (Artman-Meeker et al., 2015; Smith et al., 2012; Keller, 2017), yet based on the initial findings, I recommend DCYF to consider increasing the number of coach workforce across the state or reduced the roles and caseload of coaches from the umbrella term – “RBPD” specialists (DCYF, 2020).

### RQ2. Reported Coaching Activities in WELS

***Type of Coaching Activities.*** Findings from WELS notes cube represents regardless of program type, the number of reported coaching notes have increased 1280% from a total of 9,185 notes in 2014 to 117,606 notes in 2019. As the number of participating Early Achievers sites recorded on WELS have increased 130% over from 1190 sites in 2014 to 2742 in 2019. Compared to pre COVID-19 era, despite the number of reported sites on WELS have decreased 16.27% in 2021, coaches have entered over 105,602 notes across all programs. (See Figure 5 for more information). Across all three types of programs (FCC, center-based care, ECEAP programs), majority coaching activities recorded on WELS presented increased proportion of communication activities among coaches and providers such as e-mail and phone from 2016 to 2020 whereas decreased allocation of coaching visit in the same time periods. For instance, 41.17% of the reported coaching activities were e-mail and phone calls in FCC programs and 33.14% in center-based programs in 2016. The proportion has increased to 81.33% in FCC programs and 75.46% in center-based programs. In other words, majority of the activities coach allocates for licensed programs were activities that could be viewed as relationship-building activities in the PBC model (CQEL, 2015; Snyder et al., 2015), yet this prevents coaches from spending time for known effective coaching strategies (Neuman & Cunningham, 2009; Pierce & Buysee, 2015; Wehby et al., 2012) including goal settings, observations, or providing feedback based on reflecting observations or documentation of instructional practices.

On the other hand, in the ECEAP programs, despite similar trend of increased activities of emails or phone calls, distribution of coaching activities represented evenly from 2016 to 2019. Especially in 2019, each reported measure of coaching activities include 25.95% of e-mails or phone calls, 33.94% for visits, and 37.16% for in and outside-classroom visits. Interestingly, the coaching records in ECEAP also represented participation in webinar throughout the 2016 to 2021 period ranged from 11.87% in 2016 to 8.45% in 2021. This could be due to the one of the ECEAP performance standards as coaches are required to document titles and dates of coach webinars in WELS (DCYF, 2021 on *PDTR-16 Coach role)*

During the COVID-19 era, coaches reported increased number of activities on virtual meeting and use of Coaching Companion. In FCC programs, the proportion of virtual meetings have increased from 2.06% in 2020 to 4.46% in 2021. Similar pattern was observed in center-based programs as coaches have reported 3.59% in 2020 and 10.89% in 2021 were allocated for virtual meeting sessions. Surprisingly, ECEAP programs represented significant increased number of virtual meetings from 14.09% in 2020 to 31.06% in 2021 as the proportion for any types of visit have significantly reduced from 42.32% in 2020 to 16.63% in 2021. Limited information around virtual coaching is available to date yet studies feedback (Israel et al., 2013; Carnahan et al., 2013; Artman et al., 2015) have found use of video-based technology or virtual coaching to with written and verbal feedback can contribute to positive impact of coaching on teaching practices. The trend in adopting online/virtual coaching is inevitable due to the current global pandemic.

The result from the reported types of coaching notes also showed promising evidence that coaches and coachees in the Early Achievers program continued to engage in continuous quality improvement virtually through the COVID-19 pandemic. On the other hand, prior to the COVID-19, decreased number of reported coaching evidence on effective coaching activities seemed concerning among family childcare programs and center-based programs. As the coach overview represents the current caseload of coaches in Early Achievers (especially among CCA of WA coaches), it seems impossible for coaches to continuously engage in strategies that are encouraged by Practice-based Coaching framework and providing experiences for providers and coaches to employ cyclic processes.

***Coaching Objectives.*** Additional in-depth analysis was conducted in the same data set to inquire coaching objectives data (See Figure 6 &7). Figure 4 represents the practice level information on 40 coaching objectives. The heatmap 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*.

FCC programs prior to COVID-19 have reported 4727% increased number of records in *correspondence*, 9454% increase in *other*, and 378% increase in *data input* activities from 2016 to 2019. Similar patterns were examined in childcare centers as 182% increase in *correspondence,* 244 % increase in *other* records, and 125% increase in *data input*. Another interesting finding from the analysis represents reporting of *travel time* and *classroom observation*.

In the same time period, the reported activities on *travel time* (2,049 records in 2016; 3,447 records in 2019) and *live classroom*/*teacher observation* (2,262 records in 2016; 3,455 records in 2019) shared similar trends among childcare centers whereas in FCC programs, despite the *travel time* for coaches have increased over time for 401% (713 records in 2016; 3,572 in 2019), *live classroom*/*teacher observation* (341 records in 2016; 1,046 in 2019) was reported less than 30% of recorded compared to the recorded measures of *travel time.* This may be due to different needs or priorities examined from previous studies (Bromer et al., 2020; Zeng et al., 2021) as *Communities of Practice* or assisting programs with *business needs* were considered more popular coaching methods among FCC programs. The current data also provides similar result as *grant or award assistance* among FCC programs have increased 2800% (461 to 3,277 records) from 2016 to 2019 as well as records of Communities of Practice have increased 2864% (337 to 3,201 records) in the same period.

Among effective coaching practices, programs have all shared common trends of increased reported objectives around *goal setting/action plans* and *establishing the coach relationship.* For instance, in FCC programs, 685% of increase in *goal setting/action plans* (620 to 4.871 records) from 2016 to 2019 as well as 604% of increase in *establishing the coach relationship* (531 to 3,740 records) in the same time periods. Programs in childcare centers have reported consistent measure of *goal setting/action plans* by 64% increaseand *establishing the coach relationship* by 75% increase. Another findings suggest childcare centers also adopted *reflection & feedback* as a measure of coaching objectives that are consistently reported on WELS (1,909 in 2016 to 2,295 in 2019) whereas FCC programs have shown 405 records in 2016 to 420 records in 2019. This may be another evidence based on Bommer et al. (2021) findings that professionals in FCC settings prefer to reflect and engage in coaching processes by other forms of practice such as CoPs addressed above.

Among ECEAP programs, records of coaching objectives available on WELS did not yield meaningful findings. There was a slight increase in *planning* from 2016 to 2017 (992 records to 1,078 records), yet most records seem to be fairly distributed across 2016 to 2019. The popular items addressed in FCCs and childcare centers including *correspondence, other, or data input* increased over time. From 2016 to 2019, *Correspondence* increased 94%, *other* increased 196%, and measures of *data input* 103%. Other findings suggest coaches in ECEAP programs have 46% decreased records of *planning* yet it is still unclear why these patterns were occurring at ECEAP programs.

During COVID-19, despite majority of the coaching objectives records have decreased, *travel time, live/classroom/teacher observation, and classroom modeling* are one of the least reported coaching objectives across all programs. For instance, in 2021, 31 records of *travel time* were reported among FCC programs, 4 in childcare centers, and 24 in ECEAP programs. *Live classroom observation* records also have decreased from 1,046 records in 2019 to 26 records in 2021 among FCC programs, 3,455 records in 2019 to 76 records in 2021 among childcare centers, and 340 records in 2019 to 36 records in 2021 among ECEAP programs. The result may suggest coaches have shifted priorities for supporting programs by continuously engage with the professional via *correspondence* or *email* or due to the current revision of the Early Achievers system (DCYF, 2021) in addition to the global pandemic, findings from WELS record suggest minimum information about what are the current strategies initiated and implemented among coaches and professionals. In the following section on interpreting interview data set, I hope to articulate perspectives Early Achievers implementation partners answer some of the findings from WELS database.

### RQ3 & 4. Perspectives from Implementation Partners on Coaching in Early Achievers, WELS, and Next Steps

***Theme 1: Perspectives from system-level lenses: Early Achievers 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. Themes emerged from the current section includes purpose of coaching, intent of data collection in WELS, and partnerships and relationship among partners. Some of them raised concerns around what is the intent and purpose 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.*

*“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.*

The comments provided by Participant A, B, and F presented unintended outcomes of implementation of coaching in the Early Achievers system. As the system is designed to appreciate and prioritize its intent to leverage all inputs of services provided by system actors to focus on improving child-level outcomes, it seemed clear to me some of the participants posed concerns around the current system. Participants reported the system does not capture what is important for building successful coach and coachee relationships nor the philosophy or values each agency brings to the table. The system also resulted in building a contentious relationship among agencies similar to what’s observed from Isner et al. (2011) that QRIS guidelines were in placed without considering pre-existing system features or agencies.

The system seems lacking opportunities to celebrate and reflect what is working well from coach perspectives and how these coaching activities are important in the Early Achievers theory of change. It also resonated with me that most researchers displayed coaching improves instructional practices or classroom quality (Diamond & Powell, 201l; Dickinson & McCabe 2001; Goffin & Barnett, 2015; Howard et al., 2014; Snyder et al., 2011; Tarrant & Huerta, 2015), on the other hand, there seems to be little research on practical strategies on how to support coaches other than broad guidelines for workforce support. To me, coaches are considered the givers in the system rather than learners or key players in the system, and perhaps viewed as neglected in the current version of Early Achievers. Participant D also shared similar perspective displayed in the current system.

*“Even if you have a theory of change in this design the way you described Min [I 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...” – Participant D on April 27, 2021*

*“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.*

*“I think the other thing that really strikes me is how many different topics there are [in WELS] and how* ***overwhelming*** *that would be for a coach to look at that and have to figure out” – Participant C on April 27, 2021.*

After all participants had moments to read and reflect descriptive information represented from the quantitative sequence. Majority of the concerns and comments above reflected the infrastructure challenges around intentionality and purpose of collecting data for decision making processes that is not evident in the current system. As individuals from agencies have multiple standards, policies, or procedures to follow in addition to having a data system that is complex to navigate, the system becomes uncoordinated across all parties of the Early Achievers system (Tout et al., 2011) which may have reflected the contentious relationship reflected earlier by a participant. Perhaps the reason I was not able to see holistic information about coach workforce and its activities are not around rules or policies are in place; rather, the relationship among implementation partner agencies are the primary factors.

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

For the agency level, sub themes including coach caseload and roles, coaching approaches, support for coaches, and coach onboarding process have been emerged. 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*** *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.*

Comments from participants also resonate some of the findings from literature. Successful implementation of a coaching strategy includes sets 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.

Participant comments also validated frequency of coaching addressed on the WELS coaching objective records. As participants stated coaches are more likely to follow convenient practices or coaching approaches that are matching the needs of the practitioners, low frequency of Practice-based Coaching (CQEL, 2015; Snyder et al., 2015) relevant activities may or may not concern the stakeholders depends on the goal of the system. If the goal of the system is to encourage evidence-based coaching practices, the governing body of Early Achievers could provide more opportunities for coaches to practice and engage in Practice-based Coaching activities as researchers (Garet et al., 2001; Lloyd & Bangser, 2009; Joyce & Showers, 2002; Knight, 2009; Raver et al., 2008) suggest, one-time training does not yield to full implementation of a practice.

***Theme 3: Perspectives from practice-level lenses: COVID-19, coaching in new system, and examples of successful coaching strategies***

In this section, collaborative partnerships, different views of coaching, effective coaching practices, and concerns around virtual collection and data collection have emerged. Despite the complex system in the Early Achievers and its coaching system, participants have demonstrated successful cases around how coaches are navigating the current global pandemic by engaging with providers:

*“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.*

Despite the examples illustrated above may not reflect as evidence-based coaching strategies, coaches in Early Achievers prioritized the needs of providers and sticked to the core principle of coaching by partnering with providers in “thought-provoking and creative process” (ICF, n.d) and focused on the needs of programs (Smith et al., 2012).

As I also reflect earlier comments, participants’ perspectives validate the WELS system does not capture coaching activities that are addressed across different programs and subsystems of Early Achievers. Contextual information addressed above can be harder to consolidate in a OLAP (Subotic et al., 2013) based database as the primary function and goal of the system is to project business outputs for stakeholders to make decision. Although Business Intelligence analytics is one form of data-driven decision-making processes (Lemire et al., 2012; DCYF, 2021), I reflected the current system resonates features Deming (1986)’s PDSA cycle to address variabilities in the engineering/manufacturing field rather than the art and complexities goes into coaching in the early learning settings.

Participants also reflected how coaching would look like in the new system. Some participants posed positive comments whereas other participants shared concerns:

*“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]… 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.*

As the world became inevitable for individuals to work in a virtual environment over the past year due to COVID-19 pandemic, participants have acknowledged and appreciated the information provided by Cultivate Learning on the Early Achievers revision processes. This surprised me as the governing body of the Early Achievers is DCYF whereas the hub for information for coaches and providers to engage in the Early Achievers process are distributed by channels that Cultivate Learning offer such as webinars, trainings, or Coaching Companion tool. Despite the literature does not explicitly link power dynamics and relationships among entities in QRIS and usually the topic is addressed in the teacher-child relationships (Erwin & Kipness, 1997; Lee & Recchia, 2008; Sebanc et al., 2003), it seems important to note that the expected role and power possessed by each agency among Early Achievers partners may vary compared to the agreed consensus on Early Achievers guidelines or contractual documentation. Especially from the perspective of participant who shared concerns around the virtual system and Early Achievers revision, it is worth noting that the current system does not hold structured process of how coaches are onboarded nor what support system are in place for them. This may or may not affect the performance of coaches, which may result in not observing sufficient records of Practice-based Coaching items in WELS or other data sources.

***Theme 4: Next steps? More career development opportunities, Power to Coaches, Learn from Other Profession and Federated Data System***

Participants have expressed ideas for next steps including providing opportunities for career development for a provider to become a coach; change in the current decision-making approach from top-down to bottom-up, learn from other profession such as nurses in the medical field, and having federated data system rather than agency-specific data system for the upcoming system. For those whose main role is supporting coaches 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.*

*“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.”*

This deemed important from a coach agency perspective. Despite multiple literature address impact of incentives or scholarships (Adam & Compton, 2011; Gaylor et al, 2009; Gaylor et al, 2010; Yazejian & Iruka, 2015) in QRIS that affect positive outcomes at a program level as described in the coach demographics in Early Achievers, one of the coach agencies in the system has lost 5% of workforce in the past year. Although the reason behind why coaches left the system is still unclear and the current study does not address retention rate of teacher workforce in the system, the comment resonated the results of study conducted by Buffet Institute. Annual turnover rates for childcare workers ranged from 26% to 40% in the United States (Roberts et al., 2018) and the primary reason for leaving the system was to earn higher salaries for future career. Despite the comment does not directly link to the current research question, workforce turnover and lack of opportunities in the current system may have influenced the implementation of effective coaching approaches to fidelity. By having more opportunities for coaches to celebrate and recognize their unique skill sets, this may truly support the current system to elaborate on coach success rather than fitting coaches to the system.

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.*

Comments from both participants resonated and illustrated the status of how coaching data inform decision making processes at the state level. As I mentioned earlier, one of the biggest challenges in conducting the current study was to identify data sources and available resources around how coaching relevant information are captured by which agencies for what purposes. As the current system does not hold system actors accountable nor provide support on data management and quality assurance processes (other than the child level outcomes or site level quality assessments data collected by Cultivate Learning; DCYF, 2021), it seems impossible to draw conclusion on which aspects of coaching strategies, dosage, or format of coaching working in the system. On the other hand, as Artman-Meeker (2015) mentioned, it was encouraging to see at least the state system currently has some information about types of coaching activities or dosage available on the WELS system which could be addressed in the future study.

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.*

I think the above comment asserted how coaching was adopted in the early childhood settings. As reported by Daily et al. (2018), findings from Breakthrough Series Collaborative (BSC) suggest, structured improvement approach addressed in the health care settings yielded positive outcomes for building organizational capacity for improvement, data-informed decision-making processes, as well as increased engagement from all levels of the organization including leadership. As the current Early Achievers system holds coaches to be accountable for follow procedures, requirements to attend certain trainings, or certified in assessment tools, I fully resonated with the participant that the current system needs more structured level of support system to develop strategies for implementation across all aspects of Early Achievers including training, coach supervision, and data systems (Daily et al., 2018).

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). Participants were concerned that the current system does not fully capture the art and science of coaching practices across different subsystems of Early Achievers. Participants also noted the current data system is overwhelming and unclear on what is the intend and purpose of the data collection. Some of practical strategies to address issues reported by participants are can be also addressed by suggestions from Tout et al. (2013) including:

* 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.

On the other hand, participants have expressed excitement around how the revised Early Achievers system will shape the role of coaches and coaching in the upcoming years. Despite there was a minor concern around not having purposeful planning, theory of change, or logic model for the upcoming system, participants have commented more opportunities for celebrating the uniqueness of each coach brings to the system will improve the current system.

# 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 by exploring data that has no meaning to a series of inquiry, experimentation, and reflection that accelerate continuous growth and learning.

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## 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 Pipeline* *Diagram

Description automatically generated*

*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; I 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.).

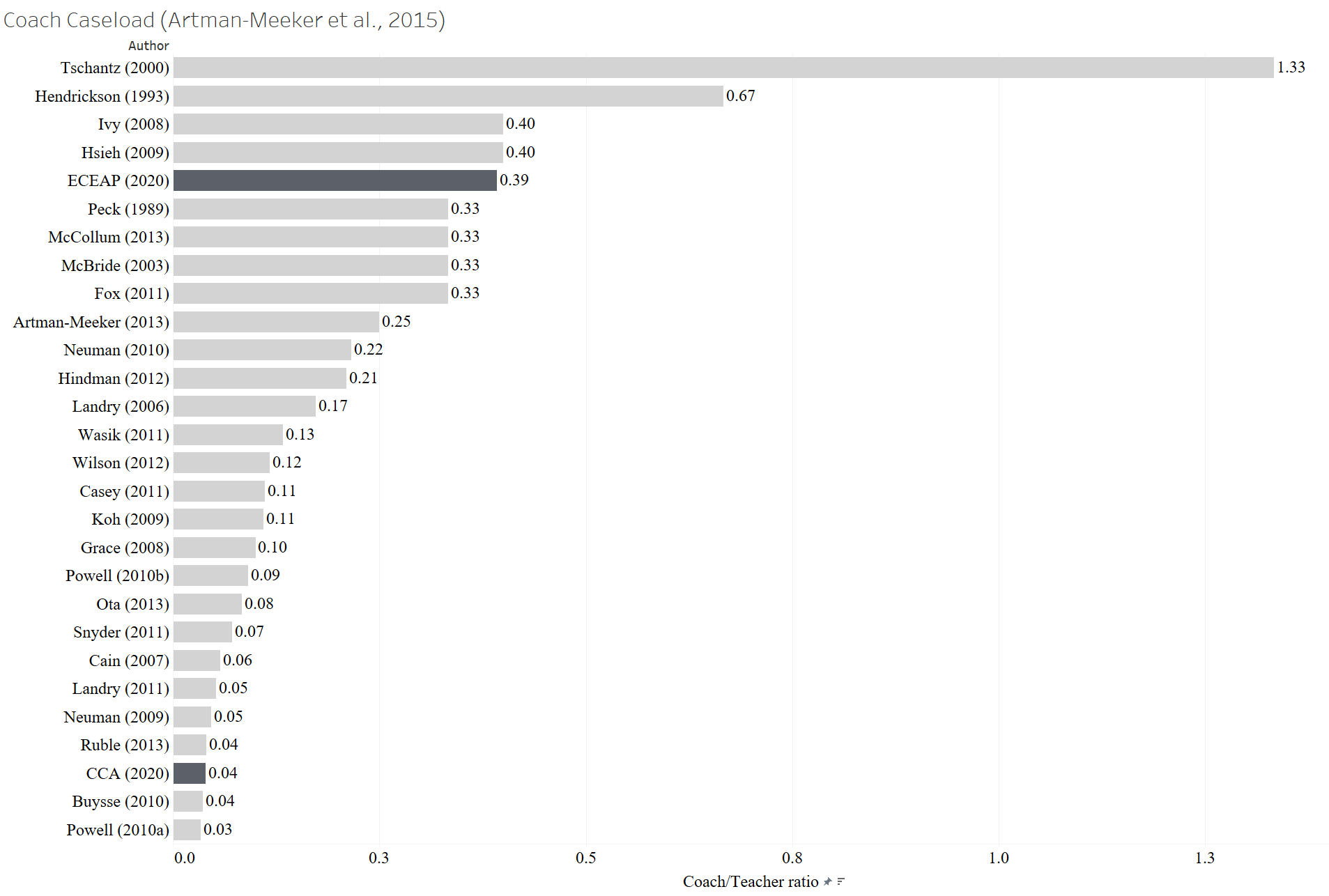
## Figure 3

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

**![Table

Description automatically generated with medium confidence](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAkACQAAD/4RDuRXhpZgAATU0AKgAAAAgABAE7AAIAAAAMAAAISodpAAQAAAABAAAIVpydAAEAAAAYAAAQzuocAAcAAAgMAAAAPgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAE1pbiBId2FuZ2JvAAAFkAMAAgAAABQAABCkkAQAAgAAABQAABC4kpEAAgAAAAM3OQAAkpIAAgAAAAM3OQAA6hwABwAACAwAAAiYAAAAABzqAAAACAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA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## Figure 4

*Coach caseload of current analysis in comparison to other reported measures (Referenced from Artman-Meeker et al., 2015)*****

Data retrieved from Artman-Meeker et al. (2015). *Applying an evidence-based framework to the Early Childhood Coaching Literature*

*Note. CCA (2020) and ECEAP (2020)* highlights the results of current analysis of coach/site ratio. All other sites included in the analysis used coach/teacher ratio.

## Figure 5

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

Description automatically generated

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 6

Application

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

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 7

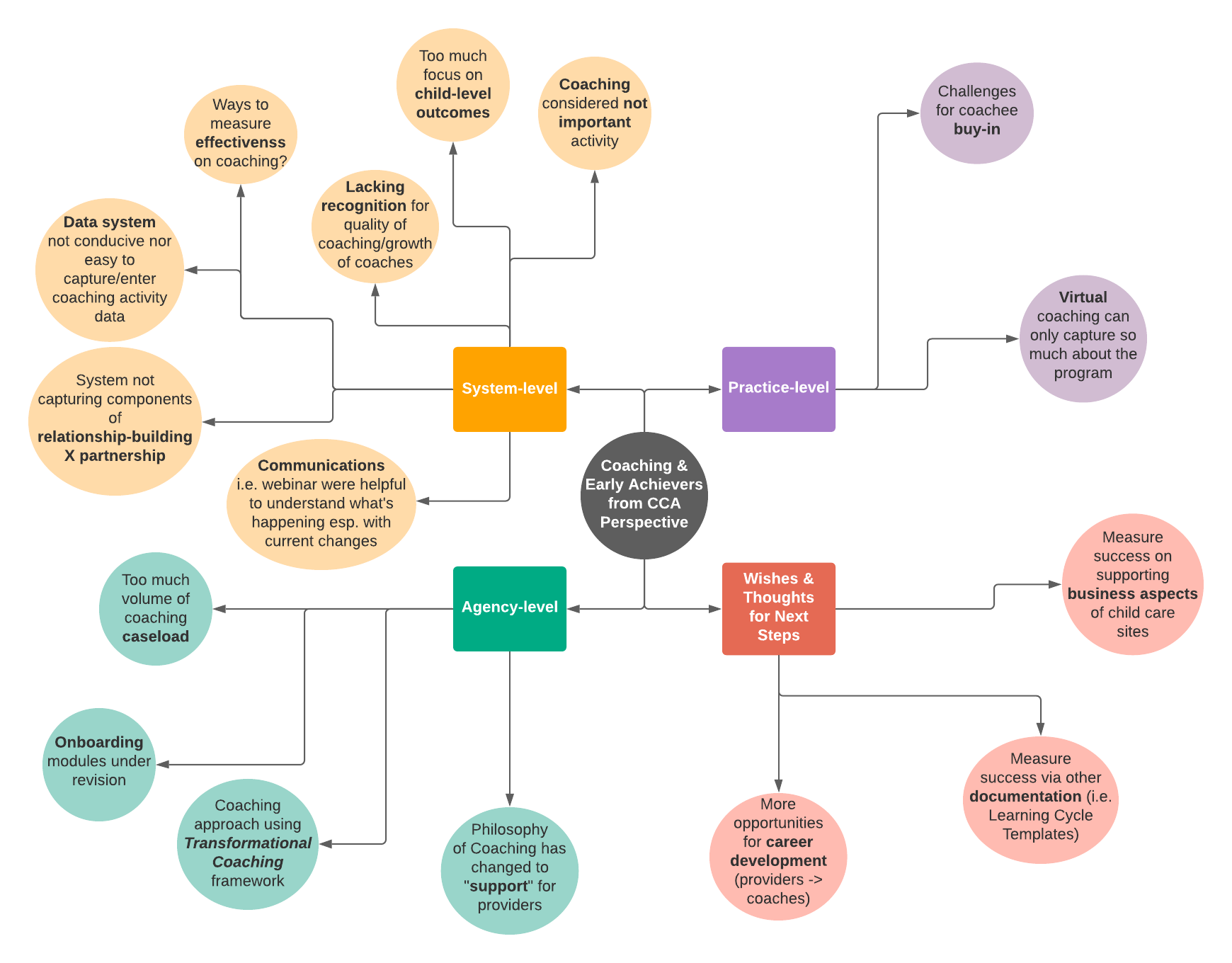
Graphical user interface

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.

## Figure 8

*Findings from with-in case analysis: Child Care Aware of Washington*

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## Figure 9

*Findings from with-in case analysis: University of Washington Cultivate Learning*

**

## Figure 10

*Findings from with-in case analysis: ECEAP*

*Diagram

Description automatically generated*

## Table 1

*Quantitative and qualitative data for current study (quan -> QUAL)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Type | Name | Description |  | Analysis plan |  | Corresponding RQs |
| Quantitative – Secondary data (quan) | Coach overview and demographics | Coach demographics information collected by coach agency in the state of Washington (CCA of WA); Raw data on ECEAP coach rosters (ECEAP); Raw data on Coach Framework Training participants (UWCL) |  | Data merge via R tidyverse package for descriptive analysis | | RQ1 |
| WELS Coaching Notes | Descriptive information collected in the statewide WELS database for coaching activities such as types of coaching visit, |  | Descriptive trend analysis (i.e. overview of coach workforce characteristics; dosage of coaching at a site level; coach training completion rate) | | RQ2 |
| Qualitative – Primary data (QUAL) | Interview (n=6) | Interviews of professionals at coach support agency including CCA of WA, Cultivate Learning, and DCYF ECEAP. |  | Inductive analysis for highlighting themes from partner entity perspective (within-case and cross-case analysis) | | RQ3 - 4 |

## Table 2

*Categories created for general inductive analysis based on Early Achievers implementation partners perspectives (N=6)*

|  |  |  |
| --- | --- | --- |
| **Category** | **Subcategory** | **Description** |
| *System-level* | Communications | Comments/concerns/challenges around the design of communications, priority, purpose of coaching is addressed in Early Achievers |
| Data System | Comments/concerns/challenges around WELS database system and what data are captured in the system |
|  | Purpose | Comments/concerns/challenges around purpose of coaching in Early Achievers, how coaching activities play a role in theory of change |
| *Agency-level* | Caseload | Comments/concerns/challenges around agency high volumes of coach caseloads |
| Coaching approaches | Comments/concerns/challenges around coaching approaches implemented by a coach agency |
| Onboarding | Comments/concerns/challenges around onboarding processes for coaches including trainings and professional development |
| Support | Comments/concerns/challenges around onboarding training for coaches offered by the agency |
| *Practice-level* | Buy-in | Comments/concerns/challenges around buy-in and rapport between coaches and providers |
| Collaborative Partnerships | Comments/concerns/challenges around defining, measuring, and implementing collaborative partnerships |
| Effective coaching practices | Comments/thoughts on effective coaching practices |
| Virtual Coaching | Comments/concerns/challenges around virtual coaching approaches |
| *Wishes & Hopes* | | Wishes addressed by interviewee |

## Table 3

*Primary coaching objectives: Variables used in WELS analysis (DEL, 2015)*

|  |  |
| --- | --- |
| **Objectives** | **Description** |
| Classroom Modeling | Refers to coach efforts to intentionally demonstrate best practices for early learning in front of a provider. These efforts should be related to shared goals and action plans. |
| Classroom Organization | Refers to coach efforts to support the management of children’s behavior, time and attention; three dimensions of CLASS behavior management (monitoring, prevention and redirection and behavior), productivity (runs routines to maximize time spent learning), and instructional learning formats (interesting activities and materials to maximize engagement and learning opportunities). |
| Collaborative Partnership/Parallel Process | Refer to coach efforts that build respectful, culturally competent, reciprocal relationships between coaches and providers toward the development of collaborative relationships. “Do unto others as you have them do unto others.”– Jeree Pawl |
| Cultural Competence | Culturally responsive practice refers to coach efforts to promote provider cultural responsiveness, both personally and throughout the early learning site as a whole. This includes reflecting on practices to ensure cultures are respected and honored and cultural sensitivity is in place. This objective could possibly be achieved by using the Cultural Competence Screen or the Early Learning Guidelines, among other resources. |
| Curriculum/Learning opportunities | Refers to coach efforts to support high-quality, evidence-based curricula that is aligned with the WA State Early Learning Guidelines that provide learning goals and activities in key areas of child development: guidance on what to teach and how to teach it; interests and ideas of children; and the values of the community. |
| **Objectives** | **Description** |
| Emotional Support | Refers to coach efforts to promote the emotional connection between teacher and student, and among students, with warmth, respect and enjoyment communicated. This is in reference to four CLASS dimensions of a highly positive climate, teacher sensitivity, regard for student perspectives and low negative climate. |
| Establishing the Coach Relationship | Refers to coach efforts that help providers understand what coaching is, how they and their coach will interact and how to get the most out of coaching. Coaches will begin building this relationship by spending time in each site/classroom and learning about the provider/teachers in order to build trust and understanding that will be the foundation of the coaching relationship. This might include sharing resources like the Coaching 101 PowerPoint, the coaching brochure and/or other materials that explain the purpose and process of coaching. These efforts can also include meeting facility staff to explain a coach’s role at the site. |
| Facilitated peer - or self-coaching | Refers to coach efforts that support providers to engage in the three-step coaching process (Goal Setting, Observation and Feedback.) |
| Family Engagements & Partnerships | Refers to coach efforts with the Strengthening Families Framework, and to advocate for engaging parents and other family members in positive, ongoing and goal-oriented relationships. |
| Goal Setting/Action Plans | Refers to the processes for initial, and on-going, goal setting and action planning, using the Early Achievers rating reports as a needs assessment. Goals should be clearly defined, measurable and achievable within a defined timeframe. |

|  |  |
| --- | --- |
| **Objectives** | **Description** |
| Grant or Award Assistance | Refers to coach efforts that support providers’ access to grant or award funds by introducing available grants/awards, supporting providers as they complete necessary paperwork or procedures to apply for grants/awards and assisting providers in planning for and using funds to achieve Early Achievers goals. |
| Individualized teaching & learning | Refers to coach efforts to support the use of observation and ongoing, formative assessment of children’s skills to intentionally plan instruction and activities that engage all children regardless of strengths and needs. It also refers to coach efforts to help providers design learning opportunities through daily routines to meet the individual needs of all children. |
| Infant/Toddler Consultation | This is intended for the Infant/Toddler consultation model. Please refrain from selecting this objective if you have not been given specific instructions for this purpose. |
| Instructional Support | Refers to coach efforts to help providers use discussion and activities to promote students’ higher order thinking and understanding (concept development); quality of feedback to expand understanding and continued participation; and quality and amount of teacher’s language modeling. |
| 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. This may include using the Environment Rating Scales as a resource to inform practice. |

|  |  |
| --- | --- |
| **Objectives** | **Description** |
| Live Classroom/Teacher Observation | The term “observation” refers to the process of gathering and recording information about implementation of desired teaching practices during on-going classroom activities, routines, and transitions. |
| Other | Specify in notes. Please use this definition sparingly. Look through the other definitions to identify which one or two best describe the purpose of your coaching effort. |
| Professional Learning Community | This is intended for the Infant/Toddler consultation model. Please refrain from selecting this objective if you have not been given specific instructions for this purpose. |
| Provide Professional Development or Training | Refers to coach efforts that support providers to access and engage in professional development opportunities such as taking courses, STARS trainings, health and safety trainings, or other professional development opportunities. Coaches may conduct such trainings, or may refer providers to relevant trainings or agencies that can provide the trainings. This also can include supporting providers as they access a professional learning community. This does not include coaching itself. Trainings that coaches deliver to providers onsite are not eligible for STARS credit as this time, as they are part of coaching services. |
| Recognizing gains | Refers to coach efforts to celebrate completed goals and other accomplishments. |
| Reflection & Feedback | Refers to coach efforts to develop and sustain mutual consideration of the support strategies used and information gathered about teaching practices to identify successes, challenges and areas for additional improvement or refinement (i.e., reflecting on teaching practices. |

|  |  |
| --- | --- |
| **Objectives** | **Description** |
| Resiliency | Refers to coach efforts to assess, teach or support their use of any and/or all of the A.C.H.I.E.V.E.R. resiliency skills. |
| 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. |
| Screening & Ongoing Child Assessment | Refers to coach efforts that introduce, educate, explain and support providers’ use of screening and child assessment tools. This could include helping providers understand what screening and assessment tools are, identifying and implementing the use of specific screening and/or child assessment tools and supporting providers to do objective child observations and note taking to document child development (i.e. video, pictures, and anecdotal notes about child learning). |
| Understanding Ratings | Refers to coach efforts to help providers understand their rating scores related to ERS, CLASS and the Early Achievers Quality Standards. |
| Video Observation | Refers to the process of engaging in focused observations via recording and/or reviewing recordings of providers in classrooms. |

## Table 4

*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 |

## Table 5

*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%) |

## Table 6

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

|  |  |
| --- | --- |
| ***Participant characteristics*** | ***n (%)*** |
| Race/Ethnicity |  |
| Caucasian / White / 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.

# List of Appendices

**Appendix A.** Current Status of QRIS in States

**Appendix B.** House Framework in Early Achievers & House Framework in QRIS

**Appendix C.** Codes for R data join (Coach roster & training data) in RStudio

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

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**Appendix F.**Consent Form and Recruitment Information for Interview Participants

## Appendix A

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

**Map

Description automatically generated**

## Appendix B

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

A picture containing website

Description automatically generated

**Text

Description automatically generated**

## Appendix C.

*Codes for R data join (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 D.

*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 E.

*CCA of WA Coaching Staff Information (March 2021)*

Graphical user interface

Description automatically generated with medium confidence

Graphical user interface

Description automatically generated

## Appendix F.

*Consent Form and Recruitment Information for Interview Participants*

**UNIVERSITY OF WASHINGTON**

**COLLEGE OF EDUCATION**

**Title of Study: Mechanics of Coaching: Inquiry of past, present, and future of coaching in Washington Quality Rating Improvement System**

**(WSIRB Project Code 2019-039 under *Partnership for Pre-K Improvement: Washington*)**

**Interviewee Consent Form – Dissertation**

**Investigator (Univ. of WA, College of Education)**

Min Hwangbo, PhD Candidate in Learning Sciences & Human Development

Contact email for the study: [foreverm@uw.edu](mailto:foreverm@uw.edu)

**Advisors (Univ. of WA, College of Education)**

Gail E. Joseph - Chair, PhD, Professor of Education | [gjoseph@uw.edu](mailto:gjoseph@uw.edu)

Sylvia S. Bagley, PhD, Director of Instructional Leadership | [sbagley@uw.edu](mailto:sbagley@uw.edu)

Soojin Oh Park, PhD, Assistant Professor of Education | [parkso@uw.edu](mailto:parkso@uw.edu)

Crystal C. Hall, PhD, Associate Professor of Public Policy & Governance | [hallcc@uw.edu](mailto:hallcc@uw.edu)

**Statement of Purpose**

We are asking you to be in a research study. The purpose of this consent form is to give you the information you will need to help you decide whether to participate. Please read the form carefully. You can ask questions about the purpose of the research, what we will ask you to do, the possible risks and benefits, your rights as a participant in the project, and anything else about the research and contents of this form that is not clear.

When we answer all your questions, you can decide if you want to participate in the study or not. This process is called 'informed consent.' We will give you a copy of this form for your records. Please do not hesitate to contact [forevemr@uw.edu](mailto:forevemr@uw.edu) for any questions, comments, feedback, etc. I appreciate your time and dedication for your service in the field!

**Purpose of Study**

The study *Mechanics of Coaching: Inquiry of past, present, and future of coaching in Washington Quality Rating Improvement System* inquires ontological status – a status of where things are at – with the current Washington State Quality Rating Improvement System, the Early Achievers system coaching activities and workforce support. After a round of descriptive analysis of coaching information retrieved from the statewide early learning system data warehouse “WELS-DW,” the researcher intends to interview stakeholders in the system to validate and include the voice of system actors. These include coach support leads, administrators in the state, trainers, and coaches in the Early Achievers system.

**Procedures**

If you agree to participate in this study, you will be asked to do the following:

* Agree to participate in 1-hour call semi-structured interview with the researcher which includes:
  + From your perspectives, what are your thoughts on the information captured on the WELS system (particularly on Notes)?
  + Does that match with your belief, perspectives, and actual activities that you felt it's gathering what's considered intended information for the system?
  + If there were a magic wand, in the next 3-5 years, what suggestions do you have to the state QRIS system regarding collecting and managing coaching-relevant data?
* Agree to fill out the following form (last page of this consent form) which captures demographic information of interviewee

If you agree to participate in this study, the researcher will:

* Coordinate interview schedule with you at your convenience between April 19- May 5, 2021
* Prepare and share the transcript of your interview within 48 hours via an encrypted file transfer file ShareFile
* Prepare and share any deliverables of the study for your information and feedback before disseminating to the public including sponsors (Washington Department Children Youth and Families).
* Keep all information private and secure all data files of the study in a secured data warehouse C-Dash (operated by Cultivate Learning, College of Education, University of Washington).

***The only time we will share identifiable information is in cases of suspected child abuse. By law, we must report these cases as early learning professionals.***

You can choose to not participate, or stop participating, in the study at any time.

**Risk, Stress, or Discomfort**

Some people feel that participating in research is an invasion of privacy. We do our best to protect your privacy. The only people who will have access to your identifiable information are members of the study team who have signed an agreement to protect your privacy and keep your information confidential. Your name will be kept until data collection is complete and the data is organized at our office location. We will remove links to names from our records no later than December 31, 2027. All data will be kept indefinitely in a locked location that only project research team members can access. Your name will not be used in any articles we publish or presentations.

Whether or not you choose to be in the study, it will not affect your employment. No personal questions will be asked. You are free to stop activities at any time. If you have any questions, please contact us at [foreverm@uw.edu](mailto:foreverm@uw.edu).

**Benefit**

We hope the results of this study will help us understand how to better support coach workforce in the Washington early learning system.

**Other Information**

Participation in this study is voluntary. At any time during the study, you may choose to stop participating. Confidentiality of data will be maintained at all times, except in cases where child abuse is suspected. By law, such instances must be reported by the investigator.

Sometimes, government or university staff review studies such as this one to make sure they are being done safely and legally. If a review of this study takes place, your records might be examined. The reviewers will protect your privacy. The study records will not be used to put you at legal risk of harm.

A consent form is attached. Please read it, sign it with your decision marked about participating, scan, and return it to a secured link that will be shared by the researcher. Please keep a copy for your records. Thank you for considering participation in this study. We think that our research will help create more opportunities for high quality early learning environments across the state. We will be happy to answer any questions you have. You can contact Min Hwangbo at [foreverm@uw.edu](mailto:foreverm@uw.edu).

Sincerely,

Min Hwangbo

**Subject’s Statement**

The details of this study have been explained to me. I have had an opportunity to ask questions. I understand that the research team member listed above will answer future questions that I may have about the research study.

(First & Last Name Initials)

 \_\_\_\_\_ I have received a copy of this consent form.

 \_\_\_\_\_ I give consent for researchers to conduct an interview which includes recording, transcribing, and reviewing the data.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_           \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_       \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Printed name of participant                Signature of participant         Date

Your e-mail address:

Your role:

Your ethnicity/race:

Years of experience in current position:

Years of experience in early learning system:

What is your coaching specialty? (i.e. Data coach, Curriculum coach, Coach supervisor, Instructional leadership coach, etc):

If applicable, preferred pseudonym:

Other information that you’d like to share?: