
*A Review of the
Research Literature*

Effective Investments

*In the Child Care and
Early Education Profession*

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Effective Investments in the Child Care and Early Education Profession

Executive Summary

In Oregon, as in the rest of the United States, the majority of young children will spend a substantial amount of time in nonparental care before they enter kindergarten (Oregon Child Care Research Partnership, 2007; Overturf Johnson, 2005). Increased awareness of the impact of child care and early education on the development of young children has brought attention to the professional development of those who teach and care for them. The skill and stability of teachers and caregivers are critical factors that influence how well child care and early education experiences meet the needs of young children.

Efforts to strengthen the child care and early education workforce must start with an understanding of the members of the workforce itself. The workforce comprises two groups: *teachers*, who typically work in child care centers, and *caregivers*, who typically work in homes. In Oregon, the teacher/caregiver workforce numbers approximately 14,500 (Child Care Division, 2005). Across the nation, this workforce is characterized by rates of low compensation, high turnover, and steadily decreasing levels of education (Whitebook, Sakai, Gerber, & Howes, 2001; Bellm & Whitebook, 2006; Children's Institute, 2008). At the same time that education levels within the workforce have declined, the skills needed to meet the needs of young children have risen due to increasing levels of social-emotional and behavioral problems as well as cultural and linguistic diversity.

Child outcomes are inextricably connected to adult-child relationships. For young children in early childhood settings, interactions with teachers/caregivers are the "primary mechanism" through which experiences affect the child (Pianta, 2006, p. 233). Within the profession, the amount of sensitivity to children's needs and involvement with them is linked with higher levels of education (Burchinal,

Cryer, & Clifford, 2002; Clarke-Stewart, Vandell, Burchinal, Marion, & McCartney, 2002). From parents to researchers, there is agreement that warm, nurturing, and stimulating interactions between teachers/caregivers and children is the single most important predictor of positive child outcomes from child care and early education (Emlen, Koren, & Schultze, 2000; Shonkoff & Phillips, 2000). However, underneath this consensus are policy questions about the type, content, and amount of investment in professional development needed to make a difference in children's lives.

Recognizing the value of using research to inform policy-making, The Oregon Community Foundation (OCF) commissioned Oregon State University to review the research literature on professional development of the child care and early education workforce. OCF articulated questions whose answers can support public and private investment decisions. The questions fell into four categories:

- professional development;
- articulation across types of professional development;
- scholarship, compensation, and retention initiatives; and
- integration of OCF Scholarship Programs with Oregon's Child Care and Early Education System.

The major research findings from a review of the literature are organized by these categories. OCF's questions introduce each section.

Professional Development

What is known about the impact of professional development on teacher behavior and child outcomes?

Three primary factors are positively associated with teacher quality: compensation, participation in professional development, and stability

(Kagan, Tarrant, Carson, & Kauerz, 2006). Compensation appears to be the strongest predictor of classroom quality in child care centers (Kagan et al., 2006). Professional development encompasses education, training, and related activities. Most of the related activities involve individualized instruction and are sometimes described by the term *relationship-based professional development* (RBPD) (National Child Care Information and Technical Assistance Center [NCCIC], 2008d). Over the last thirty years, researchers have sought to identify relationships between professional development and one or more of three outcomes: program quality; provider knowledge, skills and attitudes, and child outcomes. Program quality, teacher/caregiver outcomes, and child outcomes are inextricably linked.

Research on the impact of professional development has been challenged by a lack of agreement on definitions and measures (Maxwell, Feild, & Clifford, 2006); methods and designs ill equipped to produce high levels of confidence in findings; small study samples from which findings cannot be generalized (Zaslow & Martinez-Beck, 2006); and a frequent focus on center-based preschools to the exclusion of other types of care or other age groups (Fiene 2002, 2003). Despite these and other limitations, research has consistently suggested that higher levels of provider education and training, particularly that which is child-specific, predict program quality in child care settings (Arnett, 1989; Cost, Quality, and Child Outcomes Study Team, 1995; Howes, Whitebook & Phillips, 1992; National Institute of Child Health and Human Development, Early Child Care Research Network [NICHD ECCRN], 1996; Vandell & Wolfe, 2000; Whitebook, 2003b).

Research indicates that both education and training are associated with more positive and stimulating teacher/caregiver behavior and positive child outcomes. Education and training that increases positive interactions between adults and children affects multiple areas of development (Pianta, 2006; Ramey et al., 2008). Earlier research has shown evidence of a relationship between a bachelor's degree and positive outcomes, but more recent studies indicate that a bachelor's degree may not have greater impact on classroom quality or child outcomes

than less education and/or training (Blau, 2000; Early et al., 2006; Early et al., 2007; Kontos & Wilcox-Herzog, 2003). The new studies do not negate the observed associations between education and positive outcomes; rather, they raise questions about the cause. Other factors, or other factors interacting with a bachelor's degree, may cause the positive outcomes.

Intensive, continuous, and individualized training appears more likely to change teacher/caregiver behavior than short-term workshops (Bowman, Donovan, & Burns, 2000; Fukkink & Lont, 2007). Training effects are strongest when training content is clearly specified and the focus is clear (Arnett, 1989; Layzer, Layzer, Goodson, & Price, 2007; Fiene, 2003; Pianta, Mashburn, Downer, Hamre, & Justice, 2008; Bromer, Van Haitsma, & Modigliani, 2008).

Models of RBPD (mentoring, coaching, consulting, technical assistance, and staffed family child care networks) appear to be a potent tool for behavior change, especially when delivered with training or education (Bromer et al., 2008; Bryant, 2008; Dickinson & Caswell, 2007; Fiene 2002, 2003; Layzer et al., 2007; Pianta et al., 2008; Raver et al., 2008). Practicums, long a part of college teacher training programs, are another form of RBPD. New studies have shown the effectiveness of intensive, job-embedded modes combined with training or education (Bryant, 2008; Pianta et al., 2008; Ramey, Ramey, Timraz, Grace, & Davis, 2008).

The behavior of teachers/caregivers appears to be associated with characteristics of the facility in which they are employed. The likelihood of behavior change increases when interventions focus on the whole facility as well as teachers/caregivers and involve RBPD in combination with education and/or ongoing training (Dickinson & Caswell, 2007; Worcel & Green, 2008). The type of care in which a person is employed may affect which training strategies are the most effective (Marshall et al., 2001; Marshall et al., 2002; Marshall, Creps, Roberts, Glantz, & Robeson, 2004; Worcel & Green, 2008). Increased compensation is positively associated with retention, and combining compensation with education and training appears likely to increase the skill and stability of the child care and early education workforce

(Kagan et al., 2006; Park-Jadotte, Golin, & Gault, 2002; NCCIC, 2008b; Whitebook & Bellm, 2004).

Professional development can result in changes in attitude and behavior as well as increases in knowledge among diverse members of the child care and early education workforce. Not all training has shown such impact, but researchers have identified characteristics that increase the likelihood of improved training outcomes. Characteristics that are associated with more positive outcomes include training that is:

- intensive (Bromer et al., 2008; Fiene, 2002, 2003; Ramey et al., 2008; Raver et al., 2008);
- continuous or ongoing (Layzer et al., 2007; Raver et al., 2008);
- individualized—sometimes accomplished by embedding the training in the person’s job (Bryant, 2008; Dickinson & Caswell, 2007; Fiene, 2002; Layzer et al., 2007; Pianta et al., 2008; Ramey et al., 2008)
- inclusive—involves the teacher’s/caregiver’s supervisor in the training (Dickinson & Caswell, 2007; Layzer et al., 2007); and
- focused—covering specific content rather than a general range of topics (Bryant, 2008; Fiene, 2002; Layzer et al., 2007; Pianta et al., 2008; Ramey et al., 2008).

RBPD encompasses multiple forms of professional development that focus on the establishment of relationships between more and less skilled members of the child care and early childhood education workforce. Mentoring is one type of RBPD. We use the term *mentor* to encompass related coach, consultant, or network staff. In addition to characteristics found to increase effectiveness of any type of training, there are characteristics of effectiveness specific to RBPD that relate to the mentors, including:

- hiring highly qualified mentors (Bromer et al., 2008; Ramey et al., 2008);
- providing training and ongoing support of mentors (Layzer et al., 2007; Ramey et al., 2008);
- assigning manageable mentor or coach caseloads—successful programs shared low ratios of mentors to mentees but a definite ratio has not been identified (Bromer et al.,

2008; Bryant et al., 2008; Ramey et al., 2008); and

- focusing mentor training directly on the knowledge and behavior being addressed (Bromer et al., 2008; Bryant et al., 2008; Layzer et al., 2007; Pianta et al., 2008; Ramey et al., 2008).

Education and training have both been shown to increase knowledge and improve attitudes. RBPD, when combined with education or training, has proven to be an effective tool in helping teachers/caregivers apply knowledge and actually change behavior, thus increasing program quality and improving child outcomes.

Articulation Across Types of Professional Development

What strategies have successfully linked training and education in ways that encourage and support attainment of certificates, credentials, and degrees by members of the child care and early education workforce?

As noted above, the child care and early education workforce is characterized by low wages and decreasing levels of education. Yet, education and training have been shown as key to improving program quality and child outcomes. Efforts to encourage and support increased education of this workforce have been hindered by the inability of teachers/caregivers to use knowledge gained through training to earn degrees; in other words, to translate training hours and credentials into college credits. A number of strategies have been shown to be effective in terms of linking training hours and college credits in order to encourage and support the movement of members of the child care and early education workforce from training hours to college degrees.

The creation of training certificate programs that earn college credits and meet training hour requirements provides a promising strategy. These certificates have the added benefit of having characteristics of effective training that the current collection of workshops that meet training requirements do not. Maine and Tennessee provide examples of training programs that meet training requirements and are eligible

for college credits. The *Maine Roads Core Knowledge Training* program provides training that meets training requirements for state licensing, the Child Development Associate Credential (CDA), and ongoing professional development (see <http://muskie.usm.maine.edu/maineroads/pages/ckt.htm>). It is also possible to receive college credit for completion of the entire sequence through the University of Maine or community colleges. Tennessee partners have also created a certificate program for which students enrolled in higher education can earn college credit (see <http://www.tecta.info/what.htm> for a full description of the certificate). Both of these programs represent a high level of collaboration between higher education and state child care agencies. A number of Oregon community colleges have training certificate programs (see <http://www.oregon.gov/EMPLOY/CCD/GAS/10.7FusionChart.pdf> for a list of college offerings) that award credit, but Oregon has no system or statewide program.

Another strategy being employed in Oregon and elsewhere involves granting college credits to college students for achievement of a CDA or a step on the Oregon Registry. A number of Oregon community colleges currently use this strategy (see http://www.oregon.gov/EMPLOY/CCD/Virtual_Degree_Program.shtml for a list of colleges that grant credit to enrolled students). Again, Oregon has no statewide strategy.

Both Maine and Tennessee have developed statewide articulation agreements between community colleges and four-year colleges and universities as well as their child care regulatory agency. In Oregon, local articulation agreements are negotiated between some community colleges and some four-year schools. The content of articulation agreements vary, negotiations are complicated and time-consuming, and agreements frequently do not cover all relevant issues. A statewide agreement that addresses issues related to vocational-professional credits as well as transfer credits, and to acceptance of credits to meet department degree requirements, would greatly enhance movement of the workforce from training hours to degrees.

The most effective strategy for supporting professional development of the child care and early education workforce would be statewide

and comprehensive. It would involve all training and education partners and have as its goal statewide agreement on transferability of CDAs, Steps on the Oregon Registry, and training certificates into college credits that could be used in obtaining college degrees in early childhood education or child development. Currently, the burden for getting credit for prior work is borne almost entirely by the individual teacher/caregiver. As has been done in Maine and Tennessee, a group of education and training partners could create an articulated system of training and education, including the redesign of child care-required training into training that has the effective characteristics previously outlined and is also eligible for college credits. Such training would facilitate movement towards degree achievement.

Scholarship, Compensation, and Retention Initiatives

What is known about the impact of scholarship programs and training, compensation, and retention initiatives?

Compensation appears to be the strongest predictor of classroom quality in child care centers (Cost, Quality and Child Outcomes Study Team, 1995; Kagan et al., 2006; Phillips, Mekos, Scarr, McCartnery, & Abbott-Shimm, 2000; Whitebook, Howes, & Phillips, 1990). In addition, studies have found that compensation is directly associated with teacher retention (Whitebook & Sakai, 2003).

Scholarship programs have not been rigorously evaluated in isolation in order to determine their impacts. Evaluations of scholarship programs linked with compensation and retention initiatives have proved that this combined strategy is successful at getting members of the child care and early education workforce to move to higher levels on their state registries and/or to complete college certificates and degrees (Park-Jadotte et al., 2002; Whitebook & Bellm, 2004). They have successfully engaged both center teachers and family child caregivers, although participation rates appear to be higher among center teachers (Park-Jadotte et al., 2002). All evaluated programs have demonstrated improvement of participants' retention

in their positions. Another lesson learned from evaluations is that teachers/caregivers need substantial, individual-level support in order to participate successfully in a compensation initiative. Participants have required individual-level support to assess what they need and how they can get it (Worcel, Furrer, & Green, 2002; Park-Jadotte et al., 2002; Santa Clara CARES, 2007; Whitebook & Bellm, 2004). Specifically, they need support to assess their current level of education and training, find resources, set realistic goals, and monitor progress.

By increasing participation in education and training, compensation initiatives have strengthened college early childhood education programs (NCCIC, 2008c; Santa Clara CARES, 2007; Whitebook & Bellm, 2004). This finding has national importance, but is especially relevant in Oregon, where traditionally college-level early childhood coursework has been limited. Many community college early childhood programs are less than 10 years old, and little early childhood coursework is offered in four-year colleges and universities. Improvements in professional development rely on an infrastructure for delivery that operates throughout the state and includes child care resource and referral agencies, community colleges, and four-year colleges and universities. By increasing enrollment levels, compensation initiatives both depend on and strengthen the training and education delivery infrastructure.

Community partnerships are needed to ensure that compensation initiatives align with community resources so participants are able to locate courses, scholarships, and other supports (NCCIC, 2008c; Santa Clara CARES, 2007). Strong leadership is needed to successfully implement a compensation initiative (NCCIC, 2008c; Santa Clara CARES, 2007).

Integration of Oregon Community Foundation Scholarship Programs into Oregon Child Care and Early Education System

How do we make sure that the scholarship programs interface with and reinforce other parts of the system Oregon is building, such as the Oregon Registry, statewide child care mentors, and the Quality Indicators?

Are there ways to use the scholarship programs to strengthen particular types of care such as “Friend, Family and Neighbor” care and/or infant-toddler care or others?

Oregon has accessible education, training, and mentoring, but all are constrained by inadequate resources. Oregon delivers training and mentoring in communities across the state through its child care resource and referral (CCR&R) system. Early childhood college courses are offered by 16 of Oregon’s 17 community colleges and through a virtual degree program that allows members of the child care and early education workforce to pursue an associate’s degree via online courses from anywhere in the state. In addition to education and training delivery, Oregon has two key resources. The Oregon Center for Career Development in Childhood Care and Education leads policy setting on standards and assessment of competency levels for members of the child care and early education workforce, and OCF’s John and Betty Gray Scholarship Programs reduce financial barriers to education and training throughout the state.

Research indicates that improvements in the skill and stability of the child care and early education workforce requires a multi-pronged approach that recognizes that expectations and requirements, access to professional development, and compensation interact to affect the skill and stability of the workforce. For example, efforts to improve the quality of Oregon’s child care and early education workforce would have the highest chance of success if they include a coordinated effort that recognizes that improving child outcomes requires investing in members of the workforce and the programs in which they work.

Viewing Oregon’s quality improvement initiatives as parts of a coordinated effort to improve the quality of child care and early education in Oregon has the potential to increase the impact of each effort. For the Scholarship Programs, three collaborative efforts are relatively easy to accomplish:

1. Support efforts to increase professionalization and accountability by requiring certification in the Oregon Registry as an eligibility requirement in the Scholarship Programs.

Oregon partners envision certification in the Oregon Registry of all persons working in regulated child care and early education and storage of basic data on each in the proposed Training and Education Information Warehouse. Our ability to accurately measure the skill level and stability of the child care and early education workforce requires certification in the Oregon Registry by a substantial portion of the workforce. Making certification in the Oregon Registry an eligibility requirement for OCF Scholarships would increase participation in the registry.

2. Ensure that planning for the proposed Training and Education Information Warehouse include the ability to provide OCF with reports on training levels and retention of the child care and early education workforce over time. It would be important to have the ability to compare changes in Registry levels of Scholarship Program recipients with changes in levels of non-Scholarship recipients.
3. Continue the partnership with the Oregon Community College Gray Early Childhood Education Consortium, recognizing the dual impact of the Community College Scholarship Program. Almost entirely with state and federal resources, community colleges provide a critical piece of Oregon's professional development system. Yet, this resource is available only if sufficient numbers of students enroll. Given low early childhood educator wages, most members of the workforce cannot afford college without financial assistance. Attending college while employed typically is associated with part-time enrollment, and thus difficulty obtaining federal and state financial aid. The Scholarship Program leverages state support of the college teacher training programs while making it possible for members of the workforce to attend college.

Linkages with other state efforts to improve child care are also likely to increase the impact of the Scholarship Programs but will require a greater investment of time and effort. However, research findings reported earlier in this paper demonstrate that training and education are best understood as a part of a set of factors that

lead to positive teacher/caregiver practices. Growing evidence that training and education are more likely to change teacher/caregiver behavior if combined with RBPD would indicate the value of a partnership between the Scholarship Programs and the Child Care Resource and Referral statewide mentoring program. The mentoring program would have to be revamped so as to align with evidence that shows the particular characteristics of mentoring that have been proven effective as previously described in this paper. Strong evidence exists for pairing training and education with RBPD.

Higher teacher compensation has been shown to increase retention in the workforce and better teacher compensation is associated with higher quality. Relatively small annual awards appear to have an impact. Evidence from other states has shown that training and compensation together increase training levels and retention. Research suggests that a partnership that would pair OCF Scholarship Programs with a compensation initiative would increase the ability of the Scholarship Programs to encourage and support higher levels of skill and stability among members of the child care and early education workforce.

The finding that the environment in which the teacher/caregiver works influences practice would indicate that partnering the Scholarship Program with initiatives focused on improving quality at the facility level has the potential to strengthen the impact of the Scholarship Programs. Partnerships could link OCF's investment in scholarships for training and education with community investment funds. Such a partnership could be as simple as giving priority for awarding scholarships to directors and teachers who work in programs participating in facility-level quality improvement initiatives while also committing to making improvements on at least one research-based quality indicator. Research indicates that these multi-pronged efforts are more effective mechanisms of change than training or education alone.

A number of Oregon community colleges have created training certificates designed to target and support individuals who are interested in transitioning from noncredit-bearing training and/or coursework to credit-bearing coursework (perhaps leading ultimately to a de-

gree). Certificate programs serve multiple purposes. They provide intensive, focused training for students who do not wish to continue in higher education toward the pursuit of a formal degree as well as for those individuals who wish to use the program as a pathway toward a two- or four-year degree. The certificate incorporates many of the characteristics of effective training. Certificates that meet training needs while also earning college credit may serve as a model for linking training and education; the Scholarship Programs could give priority status to students willing to work for a certificate.

A number of reasons exist for trying to increase training and education of those who care for infants and toddlers. Quality of care has been demonstrated to be lowest for this group of children in center care (Vandell & Wolfe, 2000) and children are the most vulnerable at this age. Scholarship priority could be given to center- and home-based caregivers of very young children, or a partnership could be created that targets this audience with training combined with mentoring.

Research indicates that the majority of family, friend, and neighbor caregivers do not consider themselves to be child care providers and do not want to participate in education and training designed for members of the child care and early education profession (Kreader & Lawrence, 2006; Porter, 1998). These caregivers do express high levels of interest in training and participate in training they perceive is appropriate for them. Effective strategies for supporting this group share more in common with parent education than with child care provider training (Porter, 2007). Training formats that have been found effective in reaching this population include caregiver/child play groups, home visiting, and group sessions focused on how to support children's learning or other topics of high interest to the caregivers. We recommend that OCF explore the extent to which their parent education initiatives reach this important group of caregivers and the potential for further outreach to them. Linking these programs with other state efforts to serve family, friend, and neighbor caregivers would strengthen all efforts.



Effective Investments in the Child Care and Early Education Profession

Introduction and Overview

In Oregon, as in the rest of the United States, the majority of young children will spend a substantial amount of time in nonparental care before they enter kindergarten (Oregon Child Care Research Partnership, 2007; Overturf Johnson, 2005). Increased awareness of the impact of child care and early education on the development of young children has brought attention to the professional development of those who teach and care for them. The skill and stability of teachers and caregivers are critical factors that influence how well child care and early education experiences meet the needs of young children.

Efforts to strengthen the child care and early education workforce must start with an understanding of the members of the workforce itself. The workforce comprises two groups: *teachers*, who typically work in child care centers, and *caregivers*, who typically work in homes. In Oregon, the teacher/caregiver workforce numbers approximately 14,500 (Child Care Division, 2005). Across the nation, this workforce is characterized by rates of low compensation, high turnover, and steadily decreasing levels of education (Whitebook, Sakai, Gerber, & Howes, 2001; Bellm & Whitebook, 2006; Children's Institute, 2008). At the same time that education levels have declined, the skills needed to meet the needs of young children have risen due to increasing levels of social-emotional and behavioral problems as well as rising levels of cultural and linguistic diversity.

Child outcomes are inextricably connected to adult-child relationships. For young children in early childhood settings, interactions with teachers/caregivers are the "primary mechanism" through which experiences affect the child (Pianta, 2006, p. 233). Kagan and colleagues (2006) differentiate between teacher quality (demonstrated competence) and teacher

effectiveness (impact on the young child's development). Research suggests that three factors have the greatest impact on teacher/caregiver quality and effectiveness: compensation, professional development, and stability (Kagan et al., 2006).

From parents to researchers, there is agreement that warm, nurturing, and stimulating interactions between teachers/caregivers and children is the single most important predictor of positive child outcomes from child care and early education (Emlen, Koren, & Schultze, 2000; Shonkoff & Phillips, 2000). However, underneath this consensus are policy questions about the type, content, and amount of investment in professional development needed to make a difference in children's lives.

Recognizing the value of using research to inform policy-making including funding decisions, in spring 2008, the Oregon Community Foundation (OCF) commissioned Oregon State University to review the research literature on professional development of the child care and early education workforce. Early care and education quality is a priority investment area for OCF, and OCF funds have supported scholarships for training and education of Oregon early childhood professionals since 2002. OCF articulated questions whose answers can guide public policy-making as well as the foundation's efforts to make its scholarship programs as effective as possible. Responding to these questions resulted in a paper organized into four sections:

- professional development;
- articulation across types of professional development;
- scholarship, compensation, and retention initiatives; and
- integration of OCF's early childhood scholarship programs with Oregon's child care and early education system.

In the first section, we report research findings that demonstrate the impact professional development has on changing the behaviors and practices of teachers/caregivers, improving child care and early education program quality, and supporting positive child outcomes. In the second section, we explore efforts to help teachers/caregivers move from participation in training to earning certificates and degrees, efforts which require multiple training and education systems to articulate their classes and courses to one another. In the third section, we examine what research and evaluation studies have found about the impact of scholarship, compensation, and retention strategies on teacher quality and effectiveness. In the fourth and final section, we address possible implications of the research for how the John and Betty Gray Scholarship Programs interface with Oregon's child care and early education system. OCF's specific questions are listed in italics at the beginning of each section and each section ends with a response to the questions based on a summary of research findings.

Professional Development

What is known about the impact of professional development on teacher behavior and child outcomes?

Professional development of the child care and early education workforce encompasses the collection of activities through which teachers/caregivers gain the knowledge, skills, and attitudes that will produce positive child outcomes. As no common definition of professional development has emerged, Maxwell, Feild, and Clifford (2006) proposed defining it based on its three primary components: education, training, and credentials. *Education* is defined as professional development that occurs within a formal education system. Thus, course work would be labeled education if it accrued college credits. Maxwell and colleagues (2006) define *training* as activities that occur outside of a formal education system. Training occurs in myriad forms, but generally includes courses or workshops that are neither attached to credits nor contrib-

uting to a degree. Credentials are granted by organizations to recognize and certify achievement and mastery. Typically, the credential-granting organization is not the same organization that actually delivers the knowledge to the teacher/caregiver. Examples of credentials include: the Child Development Associate (CDA) granted by the Council for Professional Recognition; teacher certification granted by a state-designated organization; and, in Oregon, the Director Credential awarded by the Oregon Center for Career Development in Childhood Care and Education.

For members of the child care and early education workforce, an increasingly important component of education and training systems is a professional development registry (such as the Oregon Registry). Registries keep track of practitioners' education, training, employment experience, and professional activities. A state's core knowledge and/or competency areas, as well as its career lattice (or ladder), serve as the foundation of a registry (National Child Care Information and Technical Assistance Center [NCCIC], 2008a). The Oregon Registry organizes the diverse types of professional development practitioners may have received into a set of graduated steps, with each step denoting achievement of a higher level of documented competence. As such, registries are not merely recorders of data; they also produce a standardized measure by which child care and early education professionals can assess their achievement and provide stakeholders with a unit (steps) to measure and compare education and training. Each state has developed a unique sequence of steps or levels, making registry steps a helpful tool for researchers to measure the impacts of within-state professional development investments. However, due to interstate variation, these steps cannot be used for comparison in multistate studies.

In this section, we will examine the effects of education and training in turn and then will devote considerable attention to relationship-based professional development (RBPD), which new evidence indicates to be a critical component of either education or training.

Education

“Bachelor’s is Best”

For years, research has shown that teachers who possess a bachelor’s degree in early childhood education or child development are best equipped with the knowledge and skills to provide learning opportunities that will promote positive child outcomes across multiple developmental domains (Barnett, Tarr, Lamy, & Frede, 1999; Cost, Quality, and Child Outcomes Study Team, 1995; Howes, Whitebook, & Phillips, 1992; Howes, 1997; Howes, Galinsky, & Kontos, 1998; Phillips, Mekos, Scarr, McCartney, & Abbott-Shim, 2000; Phillipsen, Burchinal, Howes, & Cryer, 1997; Scarr, Eisenberg, & Deater-Deckard, 1994; Whitebook, 2003a; Whitebook, Howes, & Phillips, 1990; Whitebook et al., 2001; Whitebook & Sakai, 2003, 2004). Despite the complexity of factors that con-mingle to produce child care and early education settings, research has, with a high level of consistency, shown that the level (e.g., degree obtained) and content (e.g., child-specific or more general coursework and/or major) of teacher/caregiver education is associated with better program quality and more positive child outcomes (Barnett, 2003; Bowman, Donovan & Burns, 2000; Howes & Brown, 2000). These findings are overwhelmingly based on research studies that focus on center-based preschool/prekindergarten programs.

The Environment in Which Teachers/Caregivers Work Matters

Researchers also take a more contextual view and consider the multiple factors that potentially impact program quality, teacher behavior, and child outcomes in studies that explore the effects of education. In addition to investigating the role teacher characteristics play in child care and early education settings, studies examine environmental factors that affect teacher/caregiver behavior and classroom quality. Many of these contextual factors likely coexist with teacher/caregiver background characteristics and qualifications to produce particular patterns of classroom practices and adult-child interactions. Teachers affect classroom and center environments; at the same time, characteristics of these classrooms and centers affect teacher

behavior. Some examples of the additional factors that research has suggested affect teacher behavior as well as the quality in child care and early education environments include the:

- organizational commitment and congruence between skill level and compensation of teachers/caregivers (Gable & Hunting, 2001);
- organizational climate constructed by program directors to encourage self-sufficiency and decision making among staff (Fiene, 2002, 2003);
- program director characteristics and program auspice (Vu, Jeon, & Howes, 2008);
- beliefs, attitudes, and intentionality of teachers/caregivers (Galinsky, Howes, & Kontos, 1995); and
- multiple coexisting “assets” found within teachers/caregivers, programs, and state systems that produce a culture of quality (Raikes et al., 2006); some communities or states have more qualified teachers/caregivers, higher quality programs, and systems that support higher quality.

Bachelor’s May or May Not Be Best

Recent studies have challenged the more is better (Zaslow & Martinez-Beck, 2006) paradigm; namely, the long-standing notion that teachers/caregivers will provide high quality interaction and instruction *because* they have a bachelor’s degree in early childhood education or child development. Many of these studies have incorporated contextual factors such as those described above into their analyses. The studies discussed below produced findings that were neither as consistent nor as clear-cut in delineating how education alone impacts program quality, teacher/caregiver behavior, and child outcomes.

As previously noted, the 1995 Cost, Quality, and Child Outcomes Study (CQCO) Research Team found quality was related to training and education of teachers as well as to other facility characteristics. Blau (2000) revisited the general findings that had emerged out of the CQCO study, suggesting that statistically controlling for location and center fixed effects would eliminate spurious correlations. Blau’s re-analysis of CQCO data showed education and training to

be significant predictors, although with smaller effect sizes and less consistency than suggested by the prior CQCO data analyses. Controlling for location and center fixed effects, a combination of workshop training and lower levels of formal education showed greater impact. However, Blau's research indicated the combination of workshop training and an early childhood education-specific four-year degree to be most effective. Importantly, these contradictory findings point to a notion that multiple quantities and types of formal education and training are likely to impact members of the child care and early education workforce in a variety of ways (Whitebook, 2003b; Kontos & Wilcox-Herzog, 2003).

Kontos and Wilcox-Herzog (2003) identified consistent correlations between education level and global classroom quality, and less consistent associations between education level and teacher behavior. Specialized education was more strongly associated with positive behaviors than with classroom quality, while years of experience had no association with either outcome.

Analyzing data from the National Center for Early Development and Learning's *Multi-State Study of Pre-Kindergarten*, Early and colleagues (2006) investigated associations between teacher education, classroom quality, and child outcomes. They found few associations between education and either classroom quality or child outcomes. The authors note study limitations due in part to sample issues. However, Early and colleagues' findings raise questions about the relationship of a bachelor's degree to classroom quality and child outcomes.

In a related but distinct study, Early and colleagues (2007) conducted a secondary analysis of seven data sets in order to explore links between teacher education, classroom quality, and academic achievement. Prior analyses of these data had primarily shown positive associations between education and classroom quality and/or child outcomes. Using a method that the authors called "replicated secondary data analysis," (p. 561) data were reanalyzed using consistent instructions on data handling and analysis for each of the seven data sets. Each analysis team created a consistent set of variables, including a set of control variables that

were as similar across studies as researchers could make them. Control variables included site/state, adult-to-child ratio, class size, length of school day, and characteristics of teachers and children. Results revealed inconsistent and largely null associations between teacher education and classroom quality. With control variables included in the model, the research team was largely unable to detect relationships between education, quality, and child outcomes. Challenging previous research findings that a bachelor's degree is best, Early and colleagues explained that education is just one element embedded in the context of a larger, complicated system. Reflecting on the meaning of their findings, Early and colleagues noted the following issues:

- The quality of teacher education programs is inconsistent. The number and content of child-related courses required for an early childhood education or education degree varies widely. Obtaining a four-year degree does not guarantee that teachers entering the field of child care and early childhood education have mastered competency in working with young children.
- Similarly, there is a lack of support to assist new teachers in linking their knowledge to their classroom practice.
- Teacher-child relationships greatly affect classroom quality and child outcomes, but are often not measured in research studies. In addition, teacher-child relationship building is not emphasized in the majority of teacher education programs.
- Market forces shape teacher quality. State-funded prekindergarten programs that have high wages and benefits attract high caliber teachers regardless of the level of education those teachers obtained. Thus, even teachers who do not have four-degrees are likely to be highly skilled, complicating associations between teacher quality and level of education in public prekindergarten settings.

Kelley and Camilli (2007) noted the lack of clarity about whether increasing education level actually translates into gains in classroom quality or child outcomes, and whether such outcomes are significantly and substantively enhanced if teachers/caregivers possess a

bachelor's degree versus less formal education. They did a meta-analysis of 32 studies that met their inclusion criteria. They found effects on quality outcomes from teachers with bachelor's degrees were small but significant. As the researchers note, because the research measured associations, factors other than education could have caused the observed effects; however, they also stated that findings were in the expected direction, and questioned the methods used in the Early analysis.

In general, past research has linked higher levels of teacher/caregiver education with outcomes such as:

- heightened sensitivity to children's needs (Burchinal, Cryer, & Clifford, 2002; Clarke-Stewart et al., 2002);
- greater involvement with children (Burchinal, Howes & Kontos, 2002; Ghazvini & Mullis, 2002);
- richer learning experiences offered to children (Clarke-Stewart et al., 2002);
- more knowledge about developmentally appropriate activities with children (Snider & Fu, 1990); and
- higher levels of language stimulation for children (Howes, James, & Ritchie, 2003).

The new studies do not negate the observed associations between education and positive outcomes; rather, they raise questions about the cause. Other factors or other factors interacting with a bachelor's degree may cause the positive outcomes.

Among the questions raised by the new research are how the associations found in prior research are linked to education and how teacher behaviors are intertwined with characteristics of programs, children, families, communities, and the state in which they work. Teachers/caregivers who have more education are more likely to work in environments that score higher on measures of global quality. Causal relationships are not clear. Although it appears that positive characteristics go together, it may take multiple positive factors to support child development.

Taken together, the studies discussed above form a complicated picture about the role teacher/caregiver educational attainment plays

in ensuring high quality care and education for young children. Taking into account how other environmental factors impact teacher/caregiver classroom behavior, and how these additional factors might affect child outcomes, makes it even harder to isolate the effect of educational attainment.

Education matters, although it seems to matter in different ways for different members of the child care and early education workforce (Fiene, 2003; Marshall et al, 2001; Marshall et al., 2002; Marshall, Creps, Roberts, Glantz, and Robeson, 2004;). At present, there is no simple answer for how much education is enough to ensure a particular level of quality and effectiveness among child care and early education professionals (Whitebook, 2003b; Zaslow & Martinez-Beck, 2006; Worcel & Green, 2008). Some of the lack of clarity is due to a number of widespread limitations that exist in the literature, some of which are discussed in the next section.

Limitations of Research on Education Impacts

A host of limitations complicate the literature that investigates possible lines of intersection between teacher/caregiver education and quality outcomes for child care and early childhood education programs and the children they serve. The majority of these limitations have their roots in issues of research design and methodology:

- Studies have small sample sizes, often composed of participants who do not reflect the diversity of the child care and education workforce. The ability to generalize findings to the whole workforce or across geographic areas is limited.
- Education and training variables are often subsumed under one category of teacher/caregiver background characteristics, making it difficult to tease apart the relative contribution of each to study outcomes. Furthermore, these variables are captured by questions that participants answer via self-report. There may be bias in self-reporting techniques; questions about education and training might not bear identical meaning to all participants, and respondents might have difficulty remembering their activities and reporting them with accuracy.

- There is no way to measure variations in the content, quantity, and quality of education teachers/caregivers received. Variables that measure education are often collapsed into fewer categories to ensure that the sample has a sufficient number of respondents in each category. Comparison groups tend to be those who have a bachelor's versus those who do not; alternately, those who have at least a bachelor's versus those who have less education than a bachelor's. These design decisions limit differences that can be identified among individual participants (differences between associate's degrees and bachelor's degrees are especially unclear given the propensity for associate's degrees to get grouped with any college that is less than a four-year degree).
- Few studies utilize quasi-experimental or experimental research designs and measure change over time between control and treatment groups. Instead, the majority of studies are correlational, which limits researchers' abilities to make causal claims and generalize findings.
- There is a general lack of consensus regarding how terms are defined and measured, further preventing comparisons and generalizations between studies (Maxwell et al., 2006).
- Lack of clarity or consistency in outcome measures confounds comparisons. Studies that examine teacher/caregiver behaviors and classroom or program quality may neither be designed to assess child outcome variables nor capable of doing so. The corollary is also true; studies that look at child outcomes often do not include comprehensive measures of teacher characteristics (Whitebook, 2003b).

Examination of Education Impacts by Type of Care

Although research has demonstrated that multiple factors together lead to outcomes, research has looked at a limited number of them. The vast majority of studies target samples from center-based preschools or state-funded prekindergarten classrooms, which are environments that serve children between the ages of 3 and

5 years (Fiene, 2003). It is important to keep in mind that research has commonly focused on the education of teachers working in center preschool classrooms, often public prekindergarten classrooms. It is not possible to generalize findings to those working in other types of environments (e.g., center-based infant/toddler care or family-child care providers serving infants/toddlers as well as preschool- or school-aged children). However, research has shown differences in education impacts associated with type of facilities. An example comes from the Massachusetts Cost and Quality Study (a multiphase project that included samples of community child care centers, licensed family child care homes (Marshall et al., 2001; Marshall et al., 2004) and public prekindergarten classrooms (Marshall et al., 2002). In family- and center-based care, years of teacher/caregiver education predicted programs' global and process quality in addition to teachers/caregivers' sensitivity and warmth. Teacher education was not found to predict environmental quality within public prekindergarten classrooms; however, all teachers working in these settings were required to have a four-year college degree. For the public prekindergarten sample, additional training that the teachers possessed emerged as the more consistent predictor of teachers' offering activities that stimulated children's language and reasoning skills.

In spite of the inconsistencies and limitations of existing research, it appears that education does have positive effects. However, basic questions remain:

- Is there a level of education (threshold) below which outcomes are consistently less positive?
- What content is required? Specifically, how much does general education contribute and how much is associated with child-related education?
- Does the amount of education needed vary across domains of child care and early education, e.g., type of care, ages of children, or special needs of young children?

As federal mandates, such as those required for Head Start teachers, are passed and we continue to renegotiate and reconfigure the contours of education level and content required by

members of the child care and education workforce, new challenges emerge. It will be important to more confidently ascertain in what ways and for whom education makes a difference for children's development. At present, no one has identified thresholds for the amounts of education necessary to produce differences in the behavior of teachers/caregivers, and thus on program quality and child outcomes (Tout, Zaslow, & Berry, 2006). Taking steps toward identifying such thresholds will involve moving past some of the aforementioned limitations. These steps are necessary to move conversations past "more is better" and "bachelor's are best" to discover the more complicated way that education matters for teachers and caregivers and the young children they serve.

Training

As explained in the introduction to professional development, we are using Maxwell, Feild, and Clifford's (2006) definitions of education and training in this review. Within their framework, education comprises the professional development that occurs within a formal education system. Thus, course work would be labeled education if it accrued college credits. Training encompasses courses or workshops that are not attached to credits and therefore do not contribute to a degree.

Research Findings on Training Impacts

Research on training is much more limited than that on education. Multiple challenges complicate the study of training effects. Members of the child care and early education workforce often have participated in both education and training; the impacts of one cannot easily be separated from the contributions of the other. Moreover, training is offered in a host of different forms and is defined and measured in various ways by researchers (Maxwell et al., 2006). Unlike education in which credits and degrees are established, neither form nor content of training is standardized, and therefore cannot be easily measured in discrete units.¹ The dif-

¹ Professional development registries have been created in response to training measurement challenges. The Oregon Career Development Center has set training standards and combines education and training into a set of graduated steps with each step denoting a level of competency.

ferences that accompany defining and measuring training are likely the most salient barriers that limit research and findings on the effects of training.

In regard to research that combines measures of education and training, study designs most commonly cluster education and training together as a single predictor (e.g., level of education obtained and whether or not education included components of specialized training). Even when specialized-training data were collected, training often was not analyzed, usually due to data issues. Because of these complications, it remains unclear precisely what role specialized training plays in predicting teacher/caregiver and child outcomes and how that role potentially differs from that of education alone.

For decades, research has posed questions about whether training matters. Whether it does matter, and what type and content make a difference, are questions that need to be answered. Within the literature, training type and content seem to be emerging as the most relevant training characteristics (Maxwell et al., 2006). However, as previously mentioned, limitations surrounding research design and measurement often prevent these factors from being considered, not only in terms of how they might impact teacher/caregiver behavior, but ultimately how they might benefit child development outcomes. The amount and timing of training may also be important (Maxwell et al., 2006).

An early study by Arnett (1989) demonstrated support for the importance of training content in producing differences in teacher behavior. The training program this study investigated targeted center-based preschool teachers and spanned two years. The first year focused on child development and communication training, and the second year focused on training related to classroom curriculum planning. Using the Arnett Caregiver Interaction Scale, Arnett found significant differences in levels of sensitivity and detachment/harshness between individuals who completed just the first year of training as well as individuals who had completed both years of training compared to a group of teachers who had not completed any portion of it. Interestingly, no differences in teacher behavior emerged when the two groups

of trained teachers were compared. Thus, the content of the first year of training significantly predicted increases in teacher sensitivity and reduced levels of harshness and detachment. Arnett concluded that training does matter, and further, that training content matters.

In an attempt to more clearly understand how training affects teacher/caregiver and child outcomes, Fukkink and Lont (2007) conducted a meta-analysis of quasi-experimental studies published between 1980 and 2005. Their goal was to comprehensively explore the effects of specialized training on teacher/caregiver competencies. Competencies included “professional knowledge, attitudes, and skills that are related to teacher-child interaction” (Fukkink & Lont, 2007, p. 296). The authors took into account whether training:

- was on- or off-site;
- became integrated into practice;
- included supervisory components (e.g., individualized feedback);
- had a content-specific scope or covered a wide range of topics;
- occurred at a single site or at multiple locations;
- involved a fixed curriculum or differed among participants and/or locations; and
- encompassed additional elements pertaining to its delivery (e.g., focus of training in terms of number and length of sessions and type of child care setting involved).

Their meta-analysis identified that training programs were not equally effective. Specifically, broadly designed training programs and interventions (e.g., having a wide scope, being delivered in multiple formats, and targeting many different types of learners) were not as effective. In addition, changes in teacher/caregiver attitudes were more substantial than changes in skills and knowledge, a finding the researchers posited might indicate that changes in attitudes occur before changes in behavior, with the latter achieved through training that takes place over time. This suggestion supports the idea that the most effective training involves continuous efforts rather than one-time sessions.

Overall, Fukkink and Lont’s (2007) meta-analysis emphasizes the importance of specialized training and adds evidence that participating in such training affects teacher/caregiver competency as well as global program quality. Although this work indicates that training does matter, the authors point out that different kinds of research designs (those that include random assignment and a control group) are needed before it will be possible to make claims about what type of training matters the most; that is, the type of training able to affect positive change among teachers/caregivers and children, and to improve the interactions that take place between them.

Within the literature, training is often emphasized as being an important component of improving overall process quality (Clarke-Stewart, Vandell, Burchinal, Marion, & McCartney, 2002; Howes, James, & Ritchie., 2003; National Child Care Information and Technical Assistance Center, Early Child Care Research Network [NICHD ECCRN], 2002; Zaslow & Martinez-Beck, 2006). However, in order to most effectively train teachers/caregivers, it is necessary to know what characteristics of training programs combine to produce meaningful impact. Bowman and colleagues (2000) hypothesize that the training characteristics found to be effective for members of the K–12 workforce are likely important to training of members of the child care and early education workforce. For K–12 training, effective programs are those that are intensive, continuous, and individualized. These same characteristics likely affect the effectiveness of education as well as training.

Relationship-based Professional Development

Support for the hypothesis that intensity, continuity, and individualization affect the efficacy of education and training for the child care and early education workforce has emerged from a body of research on relationship-based professional development (RBPd). Defined as professional development that focuses on the establishment of relationships between more and less skilled members of the child care and early childhood education workforce (NCCIC,

2008d), RBPB includes a variety of types of one-on-one professional development: mentoring, coaching, consulting, and technical assistance. NCCIC defines these types of RBPB:

- mentoring—a respected, experienced person supports and nurtures the growth of a less experienced person;
- coaching—a person with a specific expertise or skill assists in identifying and achieving skill development in another;
- consultation—a person facilitates the resolution of specific work-related issues with individuals or programs; and
- technical assistance—a person with specific technical or content knowledge provides information to address an identified need.

We add staffed family child care networks to NCCIC’s list of types of RBPB because the core of staffed networks is the ongoing support of a skilled staff person working intensely with a group of caregivers. Department of Labor-approved child care and early education apprenticeship programs also share characteristics with this list (Uttley & Horm, 2008).

Numerous states have implemented mentoring programs but most have not had rigorous evaluations. The evidence for the impact of RBPB comes not from state program evaluations but from a series of recent studies. This body of recent research strengthens earlier findings on the ability of RBPB to not only increase knowledge, but to also change teacher/caregiver behavior. These studies reveal consistent associations between RBPB and positive outcomes for teachers’/caregivers’ professional practice and other positive outcomes (Bryant, 2008; Dickinson & Caswell, 2007; Fiene, 2002, 2003; Layzer, Layzer, Goodson, & Price, 2007; Pianta, 2008; Ramey, Ramey, Timarz, Grace, & Davis, 2008; Raver et al., 2008). Research designs include random assignment and overcome many of the limitations of prior studies.

Office of Policy Research and Evaluation Research Initiatives

In 2004, the Office of Policy Research and Evaluation within the Department of Health and Human Services funded two major research projects designed to measure the impact

of training on child care and early education outcomes.

- The Quality Interventions for Early Care and Education (QUINCE) Study operated between 2004 and 2008 and included two research efforts:
 - A team led by Donna Bryant (2008) tested *Partnership for Inclusions (PFI)*, an individualized, on-site consultation model.
 - A team led by Sharon and Craig Ramey (2008) tested *Right from Birth*, a training program delivered in two formats: workshops and a job-embedded coaching immersion program.
- Abt Associates (Layzer et al., 2007) evaluated a Miami-Dade literacy-focused training that provided ongoing supports to participants between 2003 and 2005.

Both studies targeted and recruited diverse samples of teachers/caregivers. QUINCE intervened with center teachers and family child care providers who did not have bachelor’s degrees. In doing so, teacher and caregiver characteristics were well matched to mimic the diversity that members of the child care and early education workforce typically embody. The Miami-Dade project involved center-based teachers, many of whom had limited English skills. Both studies documented the importance of incorporating RBPB as a means of producing changes in teacher/caregiver behavior.

QUINCE: The Partnership for Inclusion Evaluation. The PFI Study took place in five states with a research team in each state and involved 24 local agencies with ongoing quality enhancement programs (typically consultations). The local agencies agreed to randomly assign teachers/caregivers to either the existing consultation model or PFI (Bryant, 2008). Desiring to match the diversity typically seen in the field, there were no educational criteria for PFI consultants who made a one-year commitment to faithfully implement either the existing or PFI consultation model. Consultants trained providers on environmental rating scales and made regular on-site visits (a minimum of one per month) to providers for six to ten months. Teacher/caregiver eligibility included not having a BA in early childhood or a closely related

field and caring for at least two children, with at least one of preschool age (20 to 50 months).

Researchers found significant improvements in measures of global quality and literacy support and no changes on measures of sensitivity, beliefs, motivation, or stress. Consistency and stability in consultants (39% loss), center teachers (58% loss), and family child care providers (37% loss) were more problematic than expected.

The Bryant research team summarized its findings as follows:

- On-site consultation is effective; changes are modest but are sustained and grow over time.
- PFI is more effective than other consultations in family child care homes.
- A wide variety of consultation models are effective in classrooms.
- Among consultants employed by the local agencies, fidelity to model and consultants' own skill and knowledge varies.
- Turnover is a major issue for consultation programs.

QUINCE: Right from Birth Immersion Training for Excellence. A team led by Sharon and Craig Ramey (Ramey et al., 2008) based a training intervention on *Right from Birth*, the Rameys' own curriculum, which focuses on research-based practices that support development (Ramey & Ramey, 1999). Training was implemented in Mississippi in two formats: a series of group interactive workshops, and a highly intensive form of job-embedded coaching, *Right from Birth Immersion Training for Excellence* (RITE).

For workshop leaders and coaches, recruitment was rigorous, training was intense, and fidelity to model was high (above 95%). Licensed center and family child care providers who served infants/toddlers (many also served preschoolers) and who had not had any college education or a CDA were eligible. Teachers/caregivers were randomly assigned to one of the two training formats. Coaching involved 20 full days over four to six weeks with an "emphasis on frequent expert demonstration, intensive practice, and continuous incorporation of learning activities..." (Ramey et al., 2008).

Right from Birth produced benefits in both formats. The benefits of the immersion format were two to three times greater than for the workshop format for both center teachers and family child care providers. Improvements in global quality were sustained, and sometimes enhanced, up to one year for both formats and in all settings, but improvement in children's language was found only in centers that received immersion training.

The Ramey team's reflections on training approaches include the following:

- Only the immersion format in centers produces effects on child development.
- Demonstrating approaches on-site in real-life circumstances followed by intense practice enhances behavior changes.
- The compact nature of workshop and immersion training, which is intense over a short period of time, enhances behavior change.
- The dosage needed for the immersion model is not known,
- Stability and high fidelity to models enhances the effect of training in both formats.

The Miami-Dade Training Literacy Program.

The Miami-Dade literacy training program was led by Abt Associates in the early 2000s. One hundred and sixty-two centers serving low-income children receiving child care subsidies were randomly assigned to one of three language and literacy curricula or to a control group. Researchers selected one four-year-old classroom in each center. Teachers in the experiment received training over two years and the training consisted of initial group training of two to three days (late fall of year one); bi-monthly visits from a coach/mentor providing training in the curriculum; and an additional group training in the fall of the second year.

Classroom teachers had little education or experience and the primary language of 56% was not English. Similarly, half of the children's primary language was not English and most children were low-income. Observed classroom quality was low at baseline. All three curricula focused on development of language and literacy and differed in approach, materials, use of technology, intensity, and cost. Most centers

implemented the curricula with fidelity and used effective coaching characterized by high intensity, clear focus, structured plans and activities, and individualization to each teacher's needs and phase of development.

Researchers found significant improvement in measures of children's literacy in the case of two of the curricula and concluded that well designed curricula accompanied by support can have meaningful impacts on teachers, classrooms, and child outcomes.

The Abt Associates research team concludes that professional development improves outcomes when training is:

- ongoing,
- job-embedded,
- focused on curriculum or standards,
- involving of a professional community, and
- specific to teachers' own classrooms.

Findings from Other Studies of RBPD

Other recent studies confirm the value of combining training or education with an on-site component.

Literacy Environment Enrichment Program (LEEP). Dickinson and Caswell (2007) studied in-service professional development focused on literacy. Using a quasi-experimental design, Head Start teachers were recruited into the study over a two-year period. One group received the intervention in the first year while the others (the controls) stayed on a wait list. Intervention teachers showed significantly more growth in measures of classroom support for literacy over the academic year. Factors that the researchers think contributed to success of the intervention included:

- pairing dually participating supervisor and teachers;
- supporting teacher reflection on classroom practices with class sessions;
- giving college credit for coursework delivered through inservice, which appears to have motivated and challenged teachers; and
- providing teachers new ways of assessing children's literacy.

Training was closely focused on literacy and

the impacts on teacher behavior were primarily in this area.

Pennsylvania's Capital Area Early Childhood Institute Infant Mentoring Project. Pennsylvania's Capital Area Early Childhood Institute Infant Mentoring project (Fiene, 2002; 2003) is a community-based mentoring initiative that specifically targets teachers of children three years old and younger. Fiene (2002) evaluated the effects that an intensive four-month long, one-on-one mentoring intervention had among teachers working with infant/toddler populations in child care centers. The intervention employed a randomized design with a pre- and post-test. The impact of the mentoring program on teacher/caregiver practice was particularly important because one-time workshops, not ongoing mentoring programs, are the most common mode of training offered to infant/toddler providers in Pennsylvania (Fiene, 2003). The intervention evaluation measured change in teacher/caregiver behavior and quality of care provided. Comparison of results from mentored teachers with those from controls indicated that mentoring increased classroom quality and sensitivity to infants' needs.

Chicago School Readiness Project. Raver and colleagues (2008) conducted a randomized controlled trial to conduct an assessment of an intervention of the Chicago School Readiness Project designed to help teachers working in Head Start-funded preschool settings improve the emotional support teachers provided in their classrooms. The intervention targeted teachers' behaviors in order to ultimately impact child outcomes, specifically to increase children's school readiness levels. To do this, a collaborative training model was built into the intervention's design. The training consisted of five, six-hour sessions, all held on Saturday over the course of fall and winter months. Teachers were compensated \$15 for every hour of training they attended. In addition to the training component of the intervention, teachers met once a week with a mental health consultant (MHC) who filled both coaching and stress reduction roles with the teachers. The study's control group was given teaching assistants/aides as alternative (nonintervention) staffing support. By doing this, consistent adult-child ratios across the groups were en-

sured, leading to more confidence in the impact the MHCs had. The intervention consisted of multiple components that revealed significant associations with increased levels of positive classroom climate as well as greater teacher sensitivity and ability to manage behavior.

My Teaching Partner Program Evaluation.

Pianta and colleagues (2006, 2008) implemented and evaluated My Teaching Partner (MTP), a Web-based consultation program. Designed to improve the quality of prekindergarten teachers' interactions with children, the consultation intervention included providing multiple modes of ongoing and specific feedback to teachers. The intervention was structured around Pianta's classroom observational tool, the CLASS (Classroom Assessment Scoring System). Each of the two groups in the intervention received a different treatment: one group of teachers received online and video consultation and feedback; the second group of teachers received only the online component of consultation. Results of the intervention revealed statistically significant differences, with the group receiving both consultation and feedback showing greater impacts across three factors that influence interactions: teacher sensitivity, instructional learning formats, and language modeling. Effect sizes were small, although the intervention is hypothesized to be particularly useful in assisting teachers who teach in classrooms with meager resources. The MTP consultation program has potential to provide individualized, ongoing feedback and consultation as a means to reduce or temper the high level of demands these teachers/caregivers face.

Family Child Care Network Impact Study.

Staffed family child care networks are a quality improvement strategy used across the country, but there are no standards for them and no studies prior to the Family Child Care Network Impact Study have looked systematically at their relationship to quality care (Bromer, Van Haitisma, & Modigliani; 2008). Using a matched control design, 80 staffed-network-affiliated family child care providers were matched on key characteristics to a control group of 40 unaffiliated providers. A third comparison group contained 30 provider participants in an unstaffed network. Staffed network affiliation predicted quality when compared with non-

affiliated providers even after controlling for relevant education, household income, and ages of children in care. Researchers found variation in outcomes and identified characteristics that predicted higher quality outcomes. These characteristics include network coordinator qualifications, individualized and/or on-site visits, education and training, and professional supportive relationships. Specifically, they found that the following predicted higher quality outcomes:

- The coordinator participated in a graduate-level certificate program in infant studies that focused on working with providers.
- The coordinator had prior experience working with children.
- On-site visits were frequent—10 times in 6 months.
- Visits focused on working with children.
- There was a low coordinator to provider ratio (1:12).
- A formal assessment tool was used.
- Providers received direct training.
- New providers received training.
- There were regular group meetings with telephone access to the coordinator and an opportunity to give network feedback.

Staffed networks appear to offer many of the same behavior-change activities that are provided in other forms of RBPDP, and the study found characteristics of the intervention important to positive outcomes similar to those found important in other evaluations.

Findings from Oregon RBPDP Initiatives

Independent evaluators have assessed the impact of a number of RBPDP projects within Oregon.

The Child Care Improvement Project. Neighborhood House and partner organizations are completing the eighth year of the Child Care Improvement Project, a system of 12 staffed family child care networks primarily in the Portland metropolitan area. Marlene Farnum, an independent evaluator, has conducted a process and outcome evaluation each year of the project. Project goals include improving the quality of family child care, strengthening

family child care businesses, increasing low-income families' economic stability and access to quality child care, and providing a model for a city-wide coordinated system of child care networks. The evaluation has documented improvements including stronger business practices and improved quality, as measured by pre- and post Family Day Care Rating Scales administered by network coordinators (Farnum, 2007).

Linn-Benton Community College Early Education Partnership (EEP) Program. Through a three-year grant from the federal Department of Education, Linn-Benton Community College (LBCC) delivered a literacy-focused educational intervention. In addition to coursework, the program offered two distinct types of RBPD: mentoring and coaching.

Each student (also termed a *protégé*) in the program was paired with a mentor. Each mentor had an average caseload of two to four students. In general, the mentors and protégés spent around five hours per term working together, resulting in approximately 15 hours of shared time each year. Mentors received a stipend and training; they were also encouraged to take courses free of charge at LBCC.

Coaches were introduced into the grant initiative in the third year to work with protégés who were taking the three literacy classes. Unlike mentors, who offered more general educational support in order to enhance protégés' "life skills" development, coaching positions were implemented to specifically target and emphasize literacy, the core goal set forth by the federal funding agency. Coaches were especially involved with helping protégés apply the strategies learned in the literacy classes to their early childhood settings.

On average, coaches worked with two to three students, and the coach-student dyad generally met as a pair three times over the course of a term. The dyad completed a survey each term on one of the content areas pertaining to literacy. The coach and the student filled out each survey and then discussed the implementation of the content area in the early childhood setting, both what the student was doing well and what the student needed to improve. Goals were devised to make achieving this improve-

ment possible.

Preliminary findings from observations and pre- and post-test Early Language and Literacy Classroom Observation (ELLCO) Scale and other program assessments suggest:

- positive differences in the learning environment,
- positive differences in teacher behavior change after implementing coaches,
- higher student retention than in nongrant funded cohorts, and
- no differences in child outcomes associated with mentors only.

Findings from the third year using coaches are still forthcoming, and attention will be focused on the effects of coaching as compared to mentoring only on all outcomes. A question for further study is whether the timing of coaching and/or mentoring matters. That is, are there differences that might be predicted depending on the combination, duration, and order of working with mentors and/or coaches?

Child Care Enhancement Project, Lane County. NPC Research (Worcel, Furrer, & Green, 2008) completed the evaluation of the first three years of the Child Care Enhancement Project, which included a staffed child care network. The project also included a compensation component, a facility improvement fund, and a parent subsidy program. Facilities applied and were assigned to either the intervention or a control group with approximately 12 facilities in each group (10 homes and 2 centers). Comparisons between those who received the intervention and the controls showed that after three years CCEP participants had:

- higher quality support for children's social-emotional development,
- higher quality support for children's cognitive development,
- higher quality support for children's language development and early literacy,
- caregivers more likely to be enrolled in the Oregon Registry, and
- caregivers more likely to have advanced their qualifications in the Oregon Registry, Impacts were stronger in family child care than in centers. Participant interviews at the

end of the three years showed substantive differences in provider perceptions of the value of program components by type of care. The RBPB components had a greater impact on family child care and were highly valued by those participants; the opposite was true for center staff. Different training models may be appropriate for different types of care.

Summary of Research Findings on Professional Development

Despite limitations in methods, research indicates that both education and training are associated with more positive and stimulating teacher/caregiver behavior and positive child outcomes. Education and training that increases positive interactions between adults and children affects multiple areas of development (Pianta, 2006; Ramey et al., 2008). A bachelor's degree may not have greater impact on classroom quality or child outcomes than less education and/or training (Blau, 2000; Early et al., 2006; Early et al., 2007; Kontos & Wilcox-Herzog, 2003). The studies raising questions about the impact of a bachelor's degree do not negate the observed associations between education and positive outcomes; rather, they raise questions about the cause of the observed impacts. Other factors, or other factors interacting with a bachelor's degree, may cause the positive outcomes.

Intensive, continuous, and individualized training appears more likely to change teacher/caregiver behavior than short-term workshops (Bowman et al., 2000; Fukkink & Lont, 2007). Training effects are strongest when training content is clearly specified and the focus is clear (Arnett, 1989; Layzer et al., 2007; Fiene, 2003; Pianta et al., 2008; Bromer et al., 2008).

Models of RBPB (mentoring, coaching, consulting, technical assistance, and staffed family child care networks) appear to be a potent tool for behavior change, especially when delivered with training or education (Bromer et al., 2008; Bryant et al., 2008; Dickinson & Caswell, 2007; Fiene 2002, 2003; Layzer et al., 2007; Pianta et al., 2008; Raver et al., 2008). Practicums, long a part of teacher training, are also a form of RBPB. New studies have shown the effective-

ness of intensive job-embedded modes combined with training or education (Bryant et al., 2008; Pianta et al., 2008; Ramey et al., 2008).

The behavior of teachers/caregivers appears to be associated with characteristics of the facility in which they are employed. The likelihood of behavior change increases when interventions focus on the whole facility as well as teachers/caregivers and involve RBPB in combination with education and/or ongoing training (Dickinson & Caswell, 2007; Worcel & Green., 2008). The type of care in which a person is employed may affect which training strategies are the most effective (Marshall et al., 2001; Marshall et al., 2002; Marshall et al., 2004; Worcel & Green, 2008). Increased compensation is positively associated with retention, and combining compensation with education and training appears likely to increase the skill and stability of the child care and early education workforce (Kagan et al., 2006; Park-Jadotte, Golin, & Gault, 2002; NCCIC, 2008c; Whitebook & Bellm, 2004).

Professional development can result in changed attitudes, increased knowledge, and changed behavior among diverse members of the child care and early education workforce. Not all training has shown impact, and researchers have identified characteristics that increase the likelihood of improved training outcomes. The following is a list of characteristics that are associated with more positive outcomes:

- intensive (Bromer et al., 2008; Fiene, 2002, 2003; Ramey et al., 2008; Raver et al., 2008);
- continuous or ongoing (Layzer et al., 2007; Raver et al., 2008);
- individualized, which is sometimes accomplished by embedding the training in the job (Bryant., 2008; Dickinson & Caswell, 2007; Fiene, 2002; Layzer et al., 2007; Pianta et al., 2008; Ramey et al., 2008);
- inclusive, involving the teacher's/caregiver's supervisor in the training (Dickinson & Caswell, 2007; Layzer et al., 2007); and
- focused, covering specific content rather than a general range of topics (Bryant, 2008; Fiene, 2002; Layzer et al., 2007; Pianta et al., 2008; Ramey et al., 2008).

In addition to characteristics found to increase effectiveness of any type of training, there are characteristics of effectiveness specific to RBPD that relate to the mentors, including:

- highly qualified mentors, which may include coach, consultant, or network staff (Bromer et al., 2008; Ramey et al., 2008);
- training and ongoing support of mentors (Layzer et al., 2007; Ramey et al., 2008);
- manageable mentor caseloads—successful programs shared low ratios of mentors to mentees but a definite ratio has not been identified (Bromer et al., 2008; Bryant, 2008; Ramey et al., 2008); and
- clear focus of mentor training on knowledge and behavior being addressed (Bromer et al., 2008; Bryant, 2008; Layzer et al., 2007; Pianta et al., 2008; Ramey et al., 2008).

RBPD has proven effective when combined with both education and training. It appears to be an effective tool for helping teachers/caregivers apply knowledge and actually change behavior, thus increasing program quality and improving child outcomes.

Articulation Between Training Organizations and Higher Education

What strategies have successfully linked training and education in ways that encourage and support attainment of certificates, credentials, and degrees by members of the child care and early education workforce?

Due to the different ways in which education and training are measured, articulation models that explicitly link training initiatives with progress toward degree completion are challenging for all education and training partners. Community colleges and universities have complex rules designed to ensure the value of the credits and degrees that they grant. No such standardization exists for training hours. However, articulation across training and education is a vital piece of a statewide plan to support the skill development of the child care and early education workforce. An effective state articulation system would enable a teacher/caregiver

to move smoothly from training to degree completion, and be able to transfer hours through multiple systems.

One goal is for members of the workforce to be able to translate documented achievements into college credits; for example, receipt of credit for documented achievement of a Child Development Associate (CDA), a nationally recognized credential. The CDA is achieved by completing a combination of work experience, portfolio completion, and supervised training. The required 120 clock hours of formal child care education may be met through participation in the wide variety of training available in the field, including in-service. The formal education hours can be credit or noncredit, but the hours must be supervised by an agency or organization with expertise in early childhood teacher preparation. The agency or organization must provide verification of the candidate's education in the form of a transcript, certificate, or letter. Translation of Oregon Registry steps into credits would serve the same goal. In that case, mastery level would be documented by the Registry.

Articulation is especially important in light of shifting federal requirements for Head Start teachers to possess degrees. Despite the relative absence of articulation agreements throughout the nation, they are considered desirable by many stakeholders. Some examples of articulation models that are in existence are described below.

Oregon Articulation Models

In Oregon, partners have worked on articulation agreements at the individual institution level; linkages exist between a number of community colleges, the Oregon Registry, and the Council for Professional Recognition, which grants the Child Development Associate (CDA). A CDA requires completion of levels of formal education lower than an Associate's degree, and many teachers/caregivers who possess this credential do not have postsecondary degrees.

CDAs and Oregon Registry steps into community college credits

Over half of Oregon community colleges grant credits to enrolled students in recognition of achievement of the CDA Credential (see <http://>

www.oregon.gov/EMPLOY/CCD/Virtual_Degree_Program.shtml). Colleges have created and implemented alignments between Oregon Registry levels, CDA, and coursework content. The process varies by college.

Community college credits to four-year school bachelor's degrees

Many community colleges and four-year colleges and universities have articulation agreements designed to facilitate students' ability to use community college credits in earning a bachelor's degree in a specific major. The success of these agreements varies widely. Two major issues challenge articulation agreements and may result in community college students not having credits apply to a degree in early childhood or related field: (a) many community college early childhood education credits are professional-technical and not transfer credits, and (b) although public universities must accept transfer credits earned at a community college, the department awarding degrees does not have to count transferred credits as contributing to the degree they award. Articulation agreements that do not address these major challenges do not serve the child care and early education workforce well.

Teacher/caregiver training into credits

Over half of Oregon community colleges (see <http://www.oregon.gov/EMPLOY/CCD/GAS/10.7FusionChart.pdf> for a list of college offerings) have designed certificates to assist teachers/caregivers to earn credit while meeting regulatory training requirements. These certificate programs target and support individuals who are interested in transitioning from noncredit-bearing training and/or coursework to credit-bearing coursework. They are designed to be a useful resource both for students who do not wish to continue in higher education toward the pursuit of a formal degree as well as for students who do wish to use the program as a pathway toward a two- or four-year degree. This approach serves people who enter the field with no plan to earn a degree but later change their goal.

Many states have created initiatives to support movement of teachers/caregivers through training and to degrees. Maine created

Maine Roads Core Knowledge Training program (see <http://muskie.usm.maine.edu/maineroads/pages/ckt.htm>). Tennessee has created a similar 30-hour training which is articulated with higher education (see <http://www.tecta.info/what.htm> for a full description of the certificate). The training is embedded in a broader system which provides a model for a holistic professional development strategy.

The Tennessee Early Childhood Training Alliance

Sponsored by Tennessee's Department of Human Services and established in 1992, the Tennessee Early Childhood Training Alliance (TECTA) is a statewide training system that incorporates state and federal standards into an "academic gateway" that encourages professional development among members of the child care and early childhood education workforce (see www.tecta.info/).

Components of TECTA include:

- Curricula grounded in child care and early childhood education research (see <http://www.tecta.info/what.htm> for a full description of the certificate), comprising
 - thirty hours of orientation training offered to child care and early childhood education professionals free of charge in one of five content areas: administration, center-based care, family child care, infant/toddler care, or school-aged instruction, and
 - a certificate of participation in formalized training upon completion of the thirty hour program, which, if desired, leads to teacher/caregiver preparation programs articulated with a consortium of Tennessee institutions of higher education (both two- and four-year).
- Subsidies that cover additional costs associated with education and training past the initial thirty hour orientation.
- Individualized, content-specific training to meet teacher/caregiver as well as programmatic needs.
- Mentoring for child care and early education professionals working toward their CDA, National Association for the Educa-

tion of Young Children accreditation, or a postsecondary degree.

- Consistent and ongoing support groups and mentoring programs offered to participating child care and early education providers.
- Collaboration between multiple state agencies (including CCR&Rs and institutions of higher education) to assist child care and early education providers in transforming the knowledge they gain in education and training programs into modifications in their classroom behavior.
- Pathways that lead to a variety of accomplishments, from training completion to a CDA to achieving associate to doctoral level degrees; continuous, research-based training is included for all participating providers.
- A steering committee that guides program development composed of representatives from child care; higher education; professional, state, and corporate agencies; and parents of young children themselves.

Challenges for the Future

Oregon is not alone in its articulation struggles. It has been noted in the research that poor articulation models exist between two- and four-year institutions (Bellm & Whitebook, 2006). The current reliance on articulation agreements at the level of individual organizations makes this work labor intensive and unstable.

Summary of Research Findings on Articulation Between Training Organizations and Higher Education

A number of strategies have been shown to be effective in terms of linking training hours and college credits in order to encourage and support the movement of members of the child care and early education workforce from training hours to college degrees. These include:

- Creating training certificate programs that earn college credits and meet training hour

requirements. These certificates have the added benefit of having characteristics of effective training that the current collection of workshops that meet training requirements do not. Maine, Tennessee, and a number of Oregon community colleges have examples of such certificate programs.

- Granting college credits to college students for achievement of a CDA or a step on the Oregon Registry. A number of Oregon community colleges currently use this strategy (see http://www.oregon.gov/EMPLOY/CCD/Virtual_Degree_Program.shtml).
- Developing statewide articulation agreements between community colleges and four-year colleges and universities. Currently, local agreements are negotiated between some community colleges and some four-year schools; however, content varies, negotiations are complicated and time-consuming, and agreements frequently do not cover all relevant issues. A statewide agreement that addresses issues related to vocational-professional credits as well as transfer credits, and to acceptance of credits to meet department degree requirements, would greatly enhance movement of the workforce from training hours to degrees.

The most effective strategy for supporting professional development of the child care and early education workforce would be statewide and comprehensive. It would involve all training and education partners and have as its goal statewide agreement on transferability of CDAs, steps on the Oregon Registry, and training certificates into college credits that could be used in obtaining college degrees in early childhood education or child development. Currently, the burden for getting credit for prior work is borne almost entirely by the individual teacher/caregiver. Another task for this group of education and training partners could be the redesign of child care-required training into training that has effective characteristics and carries college credits. Such training would facilitate movement towards degree achievement.

Scholarship Programs and Compensation and Retention Initiatives

What is known about the impact of scholarship programs and training, compensation, and retention initiatives?

Studies have identified that low wages and the absence of benefits has led to an exit of educated staff and entrance of workers with little education or training (Whitebook, Sakai, Gerber, & Howes, 2001). States have responded by creating initiatives which decrease barriers to training and education (scholarships), award monetary rewards based on level of training (compensation initiatives), and require remaining in a position for a period of time (retention initiatives). The three strategies are almost always linked based on the belief that the problems are inextricably connected.

Scholarship Programs

Scholarship programs reduce financial barriers to education and training. Although students attending two- or four-year colleges full-time may be eligible for local, state, or federal scholarship funds, the vast majority of the child care and early education workforce attending college is employed and participating in education or training part-time. Given low wages, little financial reward for increased training or education, and the importance of education and training to positive child outcomes, it is critical to remove financial barriers to education and training. Across the United States, numerous scholarship programs for members of this workforce exist. The most documented scholarship program is the T.E.A.C.H. (Teacher Education and Compensation Helps) Early Childhood® Project, established in 1990 in North Carolina and currently operating in 22 states. The *T.E.A.C.H. Annual Report* (Child Care Services Association, 2007) describes progress in achieving program goals which include participation in college degree programs, salary increases related to receipt of associate degrees, and reduced turnover. T.E.A.C.H. also measures success based on dollars administered and positive change in higher education gen-

erated by the scholarship program. Washington Scholarships for Child Care Professionals began as a T.E.A.C.H. project and now operates independently (see <http://www.childcarenet.org/providers/scholarships>). Managed by the Washington State Child Care Resource & Referral Network, this public-private partnership awards both scholarships and bonuses for goal achievement.

Most scholarship programs are one component of a larger training, compensation, and retention initiative and it has been these broader initiatives whose impacts have been evaluated. The impacts of scholarships cannot be isolated from the effects of the broader initiative; scholarship programs contribute to results reported in the evaluations of compensation and retention initiatives reported below.

Compensation and Retention Initiatives

Training, compensation, and retention initiatives emerged in the 1990s as a response to declining levels of education and high turnover rates in the child care and early education workforce. The majority of these initiatives combine training and education, compensation, and a commitment to continued employment. Descriptions of the initiatives include characteristics including auspice, initiative components, and targeted audiences. (For descriptions of state compensation initiatives see Brandon & Scarpa, 2006; NCCIC, 2008b; NCCIC, 2008c).

History of Compensation Initiatives

In 1989, the Department of Defense created its Child Development Program, Caregiver Pay Program, which instituted a wage ladder based on completion of training and education hours. In 1994, North Carolina created the Child Care WAGES® Project to provide financial supplements based on education to compliment the T.E.A.C.H. Early Childhood Project that began in the state in 1990. Since 1990, compensation initiatives have been created across the country under a wide variety of names (see NCCIC, 2008b, and Brandon & Scarpa, 2006, for detailed tables showing names of compensation and retention initiatives). California's CARES originally stood for Compensation and Retention Encourages Stability and now stands for

Comprehensive Approaches to Raising Educational Standards. CARES began in 2000 in San Francisco and Alameda counties (Park-Jadotte et al., 2002) and spread rapidly with public funding from Proposition 10 and AB212. The State of Washington created the Early Childhood Education Career and Wage Ladder in 1999. In Oregon in 2001, a few counties created Oregon CARES (Compensation and Retention Equals Stability) projects using one-time state grants and local funds (Worcel, Furrer, & Green, 2005). Throughout the 1990s and early 2000s, many states created state-compensation initiatives using state-specific names.

Description of Compensation Initiatives

Despite differences in names, auspices, and funding sources, most compensation initiatives share some basic characteristics (Brandon & Scarpa, 2006; NCCIC, 2008b), including:

- Eligibility is limited to those working directly with children, or supervising those who do, in most states. Sometimes eligibility is contingent upon a period of employment at the current facility and/or working at least 20 hours per week. Working in a regulated child care facility is sometimes required, and it is common to require earning less than a set salary level.
- Stipends or payments reward higher levels of educational achievement, including: completing early childhood education courses, mastering higher levels of a state's professional development registry, and completing child-specific credentials and/or degrees (rather than more general training and education).
- Professional development registries often provide documentation of training completion, credentials, degrees and work experience.

Some states target recruitment to members of the child care and early childhood education workforce who serve special or underserved populations such as teachers/caregivers of infant/toddlers, rural teachers/caregivers, family child care providers, and non-English-speaking child care providers (NCCIC, 2008c).

The financial incentives are usually awarded to individuals as an annual bonus (that may

be paid out in segments during the year) or as a bonus paid upon completion of a credential, degree, or other accomplishment. Washington State, the Department of Defense, and San Francisco fund child care facilities that adopt wage scales that reward education with higher pay. In Washington, facilities must meet eligibility requirements including being licensed or certified, agreeing to adopt the wage scale as specified by the state funding agency, and enrolling a percentage of children whose care is subsidized (Boyd & Wandschneider, 2004).

Whether awards are delivered as a bonus or a stipend, and whether they are paid to the individual directly or to the center, the amount of these wage enhancements is tied to a level of education/training or accomplishment of a goal. The size of wage enhancements varies by state. Among the 14 states reviewed for this paper, stipends range from \$100 for the lowest level in the state with the lowest enhancements to \$5,100 for the highest level in the state with the highest enhancements (Brandon & Scarpa, 2006; NCCIC, 2008b). Based on the 13 states with stipends, the mean lowest stipend is \$400 (median \$300) and the mean highest stipend is \$3,000 (median also \$3,000). The amount of stipend needed for a compensation bonus or salary increase to produce increases in education or retention is not known.

The financial investment attached to wage enhancements challenges states because the size of the investment is linked to success in enrolling providers. California's Santa Clara County has a population about half the size of Oregon's state population. In their CARES project's fifth year, a total of \$2,908,850 was awarded to 1,302 providers, about 21% of the estimated 6,000 member workforce (Santa Clara CARES, 2007). From 1999 through 2004, California invested more than \$240 million and served 40,000 people (Whitebook & Bellm, 2004), while between 1999 and 2006 Georgia served 4,650 people with \$8.77 million (NCCIC, 2008c). Washington estimates it would take about \$20 million a year in public funding to enroll all interested centers in their Career and Wage Ladder (Washington Economic Opportunity Institute, 2008). All studied initiatives face funding constraints and have used different strategies to manage costs. Some target funds to high needs areas such as

infant/toddler and special needs care. Some close enrollment when funds are exhausted for a year. Others use a competitive grant process. The amount expended on compensation initiatives is the strongest determinant of participation levels.

Evaluation of Compensation Initiatives

The goal of the wage compensation initiatives is to increase the education/training level and stability of the child care and early education workforce. Ideally, one would have data on the entire workforce and be able to measure changes in education/training levels and retention over time. No state has reported the ability to measure outcomes at this level. Two reasons that states are not able to measure outcomes for the entire workforce are: (a) that few, if any, states have the capacity to capture descriptive data on all members of the workforce in a database, and (b) no state has made wage enhancements available to all workforce members, so the initiative cannot be expected to have state-wide impacts.

A substantial portion of compensation initiatives have included at least minimal evaluations (see NCCIC, 2008c, for a partial list of published evaluations). Three reviews of the compensation initiative evaluations (NCCIC, 2008c; Park-Jadotte et al., 2002; Whitebook & Bellm, 2004) summarize findings and lessons learned from over 10 evaluations. We report findings from the two summary reports and individual state evaluations using the following categories:

- participants in compensation and retention initiatives,
- impacts on education and/or training,
- impacts on retention, and
- lessons learned from evaluations.

Appendix B contains a summary of decisions a state would need to make if designing a compensation and retention initiative based on findings from the evaluations.

Participants in Compensation and Retention Initiatives

Two major factors affect the level of participation in compensation initiatives: eligibility requirements and funding level. California

CARES eligibility requirements include minimal education level, ranging from none to completion of 12 credit hours in child development. In evaluating 10 California counties' CARES projects, Policy Analysis for California Education (PACE) found that participation rates are higher in counties in which the eligibility threshold is set at 6 credit hours rather than 12 (Whitebook & Bellm, 2004). Overall, participation appears highest among center-based teachers and participant demographics vary by state (NCCIC, 2008c; Whitebook & Bellm, 2004). In some states, initiatives have targeted specific groups of providers, including family child care providers, infant/toddler caregivers, and rural providers. When a group has been targeted, participation rates of targeted groups have sometimes been over 50% (Whitebook & Bellm, 2004). The association of funding level and participation numbers was noted above.

Impacts on education/training levels. Compensation programs have consistently been associated with increases in education and training (NCCIC, 2008c; Park-Jadotte et al., 2002; Whitebook & Bellm, 2004). Boyd and Wandschneider's (2004) evaluation of Washington's Wage and Career Ladder found that education increases were not significantly greater in participating centers than in a group of matched centers, except in the case of newly hired staff, where increases were significantly greater. As noted above, Washington's program differs in that the center rather than the individual is the applicant, a feature that may have impacted the effect on education/training. Interestingly, centers participating in Washington's Career and Wage Ladder attracted more highly educated teachers among their new hires than did the matched group, which may have been due to the increased wages (Boyd & Wandschneider, 2004).

Impacts on retention. As with increases in education and/or training, compensation and retention programs have positively affected retention levels. PACE evaluators found retention rates of 96% at 12 months and 93% at 18 months among CARES participants (Whitebook & Bellm, 2004). They also found participants more than two times as likely to remain in their same center over a two-year period. Similar findings have been reported by Georgia, North Carolina,

and Wisconsin (NCCIC, 2008c). Washington found retention directly related to wage level and to education in early childhood (Boyd & Wandschneider, 2004), although overall retention rates were not significantly greater in Career and Wage Ladder centers than in matched centers, except for new hires.

Summary of Research Findings on Scholarship, Compensation, and Retention Initiatives

Scholarship programs and training, compensation, and retention initiatives have proved successful in getting members of the child care and early education workforce to increase levels in their state registries and/or complete college certificates and degrees (Park-Jadotte et al., 2002; 2004). They have successfully engaged both center teachers and family child care providers although participation rates appear higher amongst center teachers (Park-Jadotte et al., 2002). All evaluated programs have demonstrated improving retention rates of participants. Other lessons learned from evaluations include that teachers/caregivers need substantial, individual-level support in order to participate successfully in a compensation initiative. Participants have required individual-level support to assess what they need and how they can get it (Worcel et al. 2005), 2002; Park-Jadotte et al., 2002; Santa Clara CARES, 2007; Whitebook & Bellm, 2004). Specifically, they need support to assess their current level of education and training, find resources, set realistic goals, and monitor progress.

By increasing participation in education and training, compensation initiatives have strengthened college early childhood education programs (NCCIC, 2008c; Santa Clara CARES, 2007; Whitebook & Bellm, 2004). This finding has national importance, but is especially relevant in Oregon, where college-level early childhood coursework has been traditionally limited. Many community college early childhood programs are less than 10 years old, and little early childhood coursework is offered in four-year colleges and universities. Improvements in professional development rely on an infrastructure for delivery that operates throughout the state and includes child care

resource and referral agencies, community colleges, and four-year colleges and universities. By increasing enrollment levels, compensation initiatives both depend on and strengthen the training and education delivery infrastructure.

Community partnerships must ensure that compensation initiatives align with community resources so participants are able to locate the courses, scholarships, and other supports (NCCIC, 2008c; Santa Clara CARES, 2007). Strong leadership is needed to successfully implement a compensation initiative (NCCIC, 2008c).

Integration of Oregon Community Foundation Scholarship Programs into Oregon Child Care and Early Education System

How do we make sure that the scholarship programs interface with and reinforce other parts of the system Oregon is building, such as the Oregon Registry, statewide child care mentors, and the Quality Indicators?

Are there ways to use the scholarship programs to strengthen particular types of care such as “Friend, Family and Neighbor” care and/or infant-toddler care or others?

The purpose of OCF's John and Betty Gray Scholarship Programs is to promote improved practices, higher levels of training, and retention in the field of child care and early education; in other words, a skilled and stable workforce. Currently, the child care and early education workforce is characterized by low education and compensation levels and high turnover. The challenges to reaching the goal of a skilled and stable workforce are multifaceted and substantial, and thus no single effort is likely to achieve the desired outcome by itself. A focused and collaborative strategy that builds upon and links existing efforts holds promise for creating real change. Opportunities exist for collaboration with multiple existing and proposed initiatives directed at improving the skill and increasing the stability of the child care and early education workforce.

Oregon's Child Care and Early Education System: Professional Development

A brief description of Oregon efforts to improve the skill and stability of the child care and early education workforce is followed by a brief review of quality initiatives with a facility focus and in which professional development is one component. (Important terms and concepts are **bolded** for emphasis.) The section ends with a description of opportunities for OCF to strengthen the impact of the Scholarship Programs through partnering.

Child care regulatory education and training standards may have the greatest impact on skill level of the child care and early education workforce. Regulatory requirements establish the floor; that is, the level of education and training lower than which a person may not work in the field. However, they also play another role in setting expectations. A substantial portion of the workforce regards minimal training requirements as a standard of good practice. What is required of teachers/caregivers strongly influences the education and training level of the workforce. According to an analysis of state training requirements done by the National Association of Child Care Resource and Referral Agencies (NACCRRA, 2007) based on data collected by the National Association of Regulatory Agencies (NARA), most of Oregon's regulatory standards rate below their measure of satisfactory.

The **Oregon Center for Career Development in Childhood Care and Education (OCCD)** provides leadership in the development, implementation, and support of Oregon's professional development system standards for support of individuals in the field of child care and early education. These efforts are achieved through the management of (a) the **Oregon Registry**, a statewide program to document, verify, and recognize the professional achievements of people who work in the field, and (b) the Oregon Registry Trainer Program, a program offering certification for all trainers and adult educators, as well as (c) the development and certification of community-based training in the child care and early education profession. In addition, OCCD manages the

Statewide Scholarship Program for Professional Development (funded by The Oregon Community Foundation John and Betty Gray Early Childhood Initiative) to encourage and support the professional development of Oregon's child care professionals. The center has worked on the development of two credentials: child care center director and infant/toddler, both of which are currently available.

Sixteen of Oregon's 17 locally-operated **community colleges** offer early childhood education coursework. The 17-member Oregon Community College Gray Early Childhood Education Consortium designs and manages their Gray Scholarship Programs. Working together, the colleges have created the online Two Year Early Childhood Education (ECE) degree, also known as "The Virtual Degree." Participants in the program are able to attend a community college via distance or online learning and earn an associate degree. Oregon's 16 **child care resource and referral agencies (CCR&Rs)**, five of which are housed in community colleges, offer child care training and mentoring. Community colleges and CCR&Rs are the primary education and training delivery system for this workforce.

Oregon has designed and will soon be developing the **Training and Education Information Warehouse (TEIW)**, a Web-based data system that will provide access and accountability. Once a substantial portion of the workforce has been certified in the Oregon Registry and the data stored in TEIW, partners will be able to measure progress in increasing the skill level and stability of the child care and early education workforce.

Oregon CARES (Compensation and Retention Equals Stability) operated in several parts of the state on short-term funding. The program linked increases in training and a commitment to remain in the field with bonuses, thus supporting both increased training and retention. Early evaluation findings in Oregon and more extensive evaluations in other states indicate that CARES produces positive outcomes, and advocates are seeking a source of ongoing funding. Several CARES projects continue to operate, but on limited funding.

The **Literacy Tool Kit and Subsidy Orientation for Family, Friends and Neighbors (FFN)**

Who Care for Children in Child Care Subsidy Program support the group of home-based providers who make up the largest percentage of caregivers who care for children receiving a subsidy. Orientations are a project of the Department of Human Services, the Service Employees International Union (SEIU), and the Oregon Child Care Resource and Referral Network. Barriers to participation in subsidy program orientation sessions and other training are addressed and FFN caregivers are encouraged to increase knowledge and skills. Each Orientation attendee receives a Literacy Tool Kit. The impact of the Literacy Tool Kit project is currently being evaluated by Pacific Research and Evaluation.

Oregon's Child Care and Early Education System: Quality Improvement Initiatives

Whereas the above efforts focus on individual members of the child care and early education workforce, research has shown that a focus on the individual alone is not sufficient to ensure effective practice and positive child outcomes (Early et al., 2007; Fiene, 2003; Gable & Hunting, 2001; Raikes, 2006; Vu et al., 2008). The quality of child care facilities in which teachers/caregivers work affects what the individual can achieve. Oregon has a number of quality improvement efforts focused on child care facilities.

The **Quality Indicator Project**, which will roll out statewide in 2009, provides focus and accountability for investments in facility-level improvement. Through this public-private partnership, facilities receive reports of how well they are doing on seven research-based indicators of quality, and can compare their indicator levels with average levels in their county. One indicator is the education level of directors and teachers; another is training level of teachers. OCF is a funder of the project, and their Scholarships can help facilities increase levels on the education and training quality indicators.

Community quality investment funds hold promise as vehicles for improvements in the quality of child care facilities. Three are currently operating. The first is funded by Portland's Children's Investment Fund (CHIF); the other

two are funded by the Child Care Contribution Tax Credit and are located in Lane, Multnomah, and Washington counties. The CHIF-funded Community Childcare Initiative administered by Child Care Resource and Referral of Multnomah County provides quality improvement grants to facilities (judged eligible based on their Quality Indicator report) who commit to improving on one or more indicators of quality. The Child Care Division selects community-based organizations to operate quality improvement projects funded with the state's Contribution Tax Credit. Lane Community College's child care resource and referral agency and Neighborhood House operate projects designed to improve quality by facility grants, a staffed technical assistance network, teacher compensation bonuses, and financial assistance to parents.

Summary of Findings on Integration of Oregon Community Foundation Scholarship Programs into Oregon Child Care and Early Education System

Viewing Oregon's quality improvement initiatives as parts of a coordinated effort to improve the quality of child care and early education throughout the state has the potential to increase the impact of each effort. For the Scholarship Programs, three collaborative efforts are relatively easy to accomplish:

1. Support efforts to increase professionalization and accountability by requiring certification in the Oregon Registry as an eligibility requirement in the Scholarship Programs. Oregon partners envision certification in the Oregon Registry of all persons working in regulated child care and early education and storage of basic data on each in the proposed Training and Education Information Warehouse. Our ability to accurately measure the skill level and stability of the child care and early education workforce requires certification in the Oregon Registry by a substantial portion of the workforce. Making certification in the Oregon Registry an eligibility requirement for OCF Scholarships would increase participation in the registry.

2. Ensure that planning for the proposed Training and Education Information Warehouse includes the ability to provide OCF with reports on training levels and retention of the child care and early education workforce over time. The ability to compare changes in Registry levels of Scholarship Program recipients to changes in levels of non-Scholarship recipients would be important.
3. Continue the partnership with the Oregon Community College Gray Early Childhood Education Consortium, recognizing the dual impact of the Community College Scholarship Program. Community colleges, almost entirely with state and federal resources, provide a critical piece of Oregon's professional development system. However, this resource is available only if sufficient numbers of students enroll. Given low early childhood education wages, most members of the workforce cannot afford college without financial assistance. Typically, attending college while employed is associated with part-time enrollment and difficulty obtaining federal and state financial aid. The Scholarship Program leverages state support of the college teacher training programs while making it possible for members of the workforce to attend college.

Linkages with other state efforts to improve child care are also likely to increase the impact of the Scholarship Programs but will require a greater investment of time and effort. However, research findings reported earlier in this paper demonstrate that training and education are best understood as a part of a set of factors that lead to positive teacher/caregiver practice. Growing evidence that training and education are more likely to change teacher/caregiver behavior if combined with RBPD would indicate the value of a partnership between the Scholarship Programs and the Child Care Resource and Referral statewide mentoring program. The mentoring program would have to be revamped so as to align with evidence that shows particular characteristics of mentoring that have been proven effective. Strong evidence exists for pairing training and education with RBPD.

Higher teacher compensation has been shown to increase retention in the workforce and better teacher compensation is associated with higher quality. Relatively small annual awards appear to have an impact. Evidence from other states has shown that training and compensation together increase training levels and retention. Research suggests that a partnership that would pair OCF Scholarship Programs with a compensation initiative would increase the ability of the Scholarship Programs to encourage and support higher levels of skill and stability among members of the child care and early education workforce.

The finding that the environment in which the teacher/caregiver works influences practice would indicate that partnering the Scholarship Programs with initiatives focused on improving the quality at the facility level has the potential to strengthen the impact of the Scholarship Programs. Partnerships would link OCF's investment in scholarships for training and education with community investment funds. Such a partnership could be as simple as giving priority for scholarships to directors and teachers working in programs participating in facility-level quality improvement initiatives while committing to making improvements on at least one research-based quality indicator. Research indicates that these multi-pronged efforts are more effective mechanisms of change than training or education alone.

A number of Oregon community colleges have created training certificates designed to target and support individuals who are interested in transitioning from noncredit bearing-training and/or coursework to credit-bearing coursework (leading perhaps ultimately to a degree). Certificate programs serve multiple purposes. They provide intensive, focused training for students who do not wish to continue in higher education toward the pursuit of a formal degree as well as for those individuals who wish to use the program as a pathway toward a two- or four-year degree. The certificate incorporates many of the characteristics of effective training. Certificates that meet training needs while also earning college credit may serve as a model for linking training and education; the

Scholarship Programs could give priority status to students willing to work for a certificate.

A number of reasons exist for trying to increase training and education of those who care for infants and toddlers. Quality of care has been demonstrated to be lowest for this group of children in center care (Vandell & Wolfe, 2000) and children are the most vulnerable at this age. Scholarship priority could be given to center- and home-based caregivers of very young children, or a partnership could be created that targets this audience with training combined with mentoring.

Research indicates that the majority of family, friend, and neighbor caregivers do not consider themselves to be child care providers and do not want to participate in education

and training designed for members of the child care and early education profession (Kreader & Lawrence, 2006; Porter, 1998). They do express high levels of interest in training and participate in training they perceive appropriate for them. Effective strategies for supporting this group share more in common with parent education than with child care provider training (Porter, 2007). These include caregiver/child play groups, home visiting, group sessions focused on how to support children's learning, or other topics of high interest to them. We recommend that The Oregon Community Foundation explore the extent to which their parent education initiatives reach this important group of caregivers and the potential for further outreach to them.



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Appendix A

Advisory Committee for the Effective Investments in the Child Care and Early Education Profession Project

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Appendix B

Decisions Related to the Design of a Compensation and Retention Initiative

The identification of key decisions flow from the evaluations of compensation and retention initiative as well as from reports of lessons learned. A partial list follows:

- Decide to target funds to wage scales or stipends/bonuses. The vast majority of states have designed programs in which funds go directly to providers, with graduated stipends linked to education level. These programs often contain a requirement to increase skill level in order to remain in the program. The Department of Defense (Pay-Program), the state of Washington (Child Care Career and Wage Ladder), and San Francisco (WagesPlus) have created wage scales that are partially supported by public funds. Wages are closely tied to education level.
- Determine program standards and whether these will be set at the local or state level. In Oregon's Child Care Quality Improvement Project (including multiple CARES projects) and the California CARES projects, local areas have adjusted basic dimensions of the original models, including eligibility requirements, stipend amounts, requirements for ongoing participation, and what to use as measures of increased education (Worcel, Furrer, & Green, 2005; Whitebook and Bellm, 2004). The advantage of such flexibility is the ability to tailor to local needs. Disadvantages include equity concerns across county lines, as well as almost insurmountable challenges in evaluating and comparing impacts, thus creating difficulty in sharing lessons learned across counties or making a case for increased statewide funding.
- Determine stipend levels. Research has not identified threshold levels at which increased compensation will produce increases in education or retention.
- Determine whether stipends are allocated on an annual basis (regardless of payment schedule) or upon completion of an educational goal/achievement.
- Determine the standard to be used in the compensation scale; for example, an Oregon Registry step, or a different standard such as training hours.
- Determine eligibility requirements. These include the amount of credits or the Oregon Registry level required, amount of time in current position required, and whether priority will be given to those who serve special populations such as infants and toddlers.
- Determine whether there will be requirements such as advancement on a registry level or achievement of some other goal to continue in the compensation program.
- Identify key partnerships that need to be in place for compensation project success. These include a training and education infrastructure, individual provider supports, accessible training and education, and scholarships and other financial support.
- Determine how impacts will be measured. Using steps in the Oregon Registry and data that will be captured in the proposed Training and Education Information Warehouse have the potential of creating a statewide performance measurement system that could measure change in the workforce over time, as well as changes in initiative participants.

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