



## **What is the Relationship Between Teacher Education and Training in Early Care and Education and Positive Outcomes for Young Children?**

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In their chapter on the effects of child care, Hayes, Palmer and Zaslow (1990) provide a history of the evolving research paradigms, first embodied in the maternal deprivation literature. Hayes et al. define three waves of research.

The impetus for the first wave was concern that young children would be harmed by daily separations from their mothers. As it became clear that mother-child separations did not have the drastic negative impacts implied by the maternal deprivation construct, important questions remained related to differences between home care and child care, the possible existence of subgroups of children whose development might be enhanced by child care, and the possible existence of subgroups of children for whom child care might be associated with negative outcomes related to development. Hayes et al. (1990) summarize those findings, noting that American research in the first wave was limited to center child care, often provided in education-based settings, and not family child care or center care provided in community-based settings.

The second wave is defined by Hayes et al. (1990) as one in which the variation in child care quality was examined as well as the relationship between quality and children's development. As American research began to include community-based family child care and center care, it became apparent that the care was very heterogeneous. This variance includes, for example, levels of structure, custodial vs. enriched environments, adult: child ratios, levels of caregiver education, and levels of connectivity to the community and other educational institutions. Observations of this variance led to questions related to quality of care and children's development and implications of child care quality for long-term development.

Hayes et. al define the third wave as the examination of the linkages between family and child care environments. These studies look at the relationships between child care quality and family socio-economic status (SES), family social characteristics, and family psychological characteristics.

Although the use of the concept of "waves" by Hayes et. al, implies movement over time, research since 1990 doesn't seem to have moved on to many more new themes. Instead, in the decade since this historical perspective was written, research has focused on using the themes outlined by the waves and increasing the complexity of the research for each of these themes in order to better understand the complexity of the relationships between child care and positive developmental outcomes for children. Several examples of these more complex studies are included in this review.



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In the research related to the relationship between early care and education teacher education and training and positive outcomes for young children, originating in wave two, research focuses on:

- Teacher education or training and its relationship to teacher behaviors, with the implication that these behaviors have positive outcomes for the development of young children.
- Teacher education or training and its relationship to child care quality, with the implication that these behaviors have positive outcomes for the development of young children.
- Teacher education and training and its implied relationship to teacher behaviors or child care quality, where the positive outcomes for the development of young children are measured.

The following review details the current research on these topics and reports on the findings. A synopsis of the results, by primary study, can be found in Chart 1: Focus and Results of Primary Studies, 1980 to Present. It must be noted that while teacher education, or formal education, is clearly conceptualized and measured in virtually all studies, this is not true for teacher training. A review of the measures in various studies, outlined in Chart 2: Measuring Education and Training of Teachers in Early Care and Education, shows how these measures often are confounded with formal training and how inconsistently teacher training has been measured across studies.

### **Teacher Education and Training and its Relationship to Teacher Behaviors**

The research on teacher education and training and its relationship to teacher behaviors includes two questions:

- Does education and/or training change teacher behaviors?
- Which teacher behaviors are changed by teacher education and/or training?

In response to the first question, Kaplan and Conn (1984), and Rhodes and Hennessey (2000) studied specific training models to ascertain whether specific training programs impacted teacher behaviors. The research supported:

- Twenty hours of training can stimulate caregivers in centers to improve their child care settings and to increase their involvement in their care of children. After training, caregivers in centers increased their physical caregiving activities and activities that facilitated social development (Kaplan and Conn, 1984).
- The completion of a 120-hour training program resulted in higher levels of child care center caregiver sensitivity (Rhodes and Hennessey, 2000).



Many research studies indicated that higher levels of teacher education and/or training were associated with higher levels of positive teacher behaviors. In the discussion below, findings related to education are reported separately from findings related to training and each of these is reported separately for center teachers and family child care teachers.

#### *Level of Teacher Education and at Child Care Centers*

In general, the level of education of center teachers was positively associated with a number of important teacher behaviors. The higher the education level, the more likely child care center teachers were to:

- Be more sensitivity to infants, toddlers, and preschoolers (Whitebook, Howes, and Phillips, 1989; Howes, 1997).
- Score significantly higher on developmentally appropriate practice, especially if they had completed ten or more early care and education content areas, of which the most important were planning, implementing and evaluating developmentally appropriate practice; creating, evaluating, and selecting materials; creating learning environments; curriculum models; and observing and recording behaviors. (Snider and Fu, 1990).
- Provide appropriate caregiving (Howes, Whitebook and Phillips, 1992).
- Hold more developmentally appropriate beliefs and practice as evidenced in TEACH scholarship awardees who had taken at least 12 to 20 credit hours at the community college (Cassidy, Buell, Pugh-Hoese and Russell, 1995).
- Be less harsh (Howes, 1997).
- Be more responsive (Howes, 1997).

Teachers with vocational training in child development scored significantly higher on developmentally appropriate practice than did those with no vocational training (Snider and Fu, 1990).

#### *Level of Teacher Education in Family Child Care Homes*

In general, the level of education of family child care providers was positively associated with important teacher behaviors. The higher the education level, the more likely family child care providers were to:

- Be more sensitive (Kontos, Howes, Shinn and Galinsky, 1995; Howes, 1997).
- Be less detached (Kontos, Howes, Shinn and Galinsky, 1995).
- Be more responsive (Kontos, Howes, Shinn and Galinsky, 1995).
- Be more nurturant and less restrictive in their childrearing attitudes (Kontos, Howes, Shinn, and Galinsky, 1995).



- Be more responsibly involved (Howes, 1997).
- Have children who engage in most complex play with objects (Howes, 1997).
- Have children who engaged in more creative activities (Howes, 1997).
- Have higher frequencies of language play (Howes, 1997).
- Manage the setting more positively (Howes, 1997).

Family child care providers with CDA training received the highest frequency of positive initiations (Howes, 1997).

### *Teacher Training at Child Care Centers*

With the exception of Phillips, Mekos, Scarr, McCartney and Shim (2000), who found that neither education or training had an effect on the quality of preschool classroom processes, the amount of training of child care center teachers was found to be important to several important teacher behaviors. The higher the amount of training, the more likely child care center teachers were to:

- Play (Howes, 1983).
- Mediate objects (Howes, 1983).
- Express positive affect (Howes, 1983), be more positive in their interaction styles with children (Arnett, 1989), and respond positively to the social bids of children (Howes, 1983).
- Engage in more appropriate caregiving (Whitebook, Howes, and Phillips, 1989).
- Be more sensitive (Whitebook, Howes, and Phillips, 1989; Howes, Whitebook and Phillips, 1992).
- Hold authoritative (as opposed to authoritarian) childrearing attitudes (Arnett, 1989).
- Provide less detached care (Burchinal, Howes, and Kontos, 2002).

The higher the amount of training, the less likely child care center teachers were to:

- Restrict toddlers' activities (Howes, 1983).
- Ignore toddlers' requests (Howes, 1983).
- Be harsh (Whitebook, Howes, and Phillips, 1989; Howes, Whitebook and Phillips, 1989).
- Be detached. (Whitebook, Howes, and Phillips, 1989; Arnett, 1989; Howes, Whitebook and Phillips, 1992).
- Be punitive (Arnett, 1989).

Teachers of infants and toddlers were more appropriate with children when they had a BA and college-level specialized training or no BA, but specialized training, highlighting the need for specialized training for infant and toddler providers (Whitebook, Howes, and Phillips, 1989). Specialized training also emerged as an additional predictor of appropriate caregiving in infant classrooms (in addition to education) in the study by Howes, Whitebook, and Phillips (1992).



### *Teacher Training at Family Child Care Homes*

In general, the amount of training of family child care providers was positively associated with important teacher behaviors. The higher the training levels, the more likely providers were to:

- Play (Howes, 1983)
- Mediate objects (Howes, 1983).
- Respond positively to the social bids of children (Howes, 1983).
- Be more sensitive (Kontos, Howes, Shinn, and Galinsky, 1995).
- Be less detached (Kontos, Howes, Shinn, and Galinsky, 1995; Burchinal, Howes, and Kontos, 2002).

The higher the training levels, the less likely providers were to:

- Rate themselves as restrictive (Kontos, Howes, Shinn and Galinsky, 1995).

### **Teacher Education or Training and its Relationship to Child Care Quality**

Teacher education and training has been examined in relationship to child care quality and found to be a significant predictor of quality, and often the most significant predictor, especially in combination with adult-to-child ratio and experience. These three are sometimes referred to as the “iron triangle” in the early care and education literature.

Findings with regard to center child care teacher education and training and center quality are:

- Consistent with other research, The Cost, Quality and Child Outcomes Study Team (1995) found that quality of center child care is related to specific variables, one of which is staff education.
- Teacher training added significantly to the prediction of quality in infant and toddler rooms (Phillips, Mekos, Scarr, McCartney, and Shinn, 2000).

The last finding again points out the importance of specialized training for teachers of infants and toddlers.

Findings with regard to provider education and training and quality of family child care are:

- Family child care specific training is a significant variable in relationship to quality of care (Pence and Goelman, 1991).
- Family child care providers seeking training are not substantially different in the quality of the care they offer from typical regulated providers (Kontos, Howes, and Galinsky, 1996).
- Family child care provider training is positively related to global measures of quality (Kontos, Howes, and Galinsky, 1996; Burchinal, Howes and Kontos, 2002).



- Family child care provider education is positively associated with higher global quality ratings (Burchinal, Howes, and Kontos, 2002).
- Caregiver education and training showed the most consistent association with observed quality (as opposed to child:adult ratio and caregiver experience) (Burchinal, Howes, and Kontos, 2002).

## **Teacher Education or Training and its Relationship to Positive Child Outcomes**

Several positive child outcomes have been found to be related to teacher education and training. In studies where teacher education or training was associated with positive child outcomes:

- Children in center classrooms with teachers who had at least an AA degree in Early Childhood Education had higher scores on verbal intelligence than when teachers had less education (Howes, 1997).
- Children whose teachers had attended a 120-hour preschool training course played more often than those who had not received training (Rhodes and Hennessey, 2000).
- Center teachers with higher education levels had children who engaged in the most complex play with peers and the most language activity (Howes, 1997.)
- Children whose family child care providers had been to college scored higher on cognitive tests (but not social or behavioral development) at 24 and 35 months than did children whose caregivers had not attended college (Clark-Stewart, Vandell, Burchinal, O'Brien and McCartney, 2002).

In studies where higher quality was associated with positive child outcomes:

- Children in homes with higher quality scores scored higher on standardized cognitive and language assessments at 15, 24 and 36 months (Clark-Stewart, Vandell, Burchinal, O'Brien, and McCartney, 2002).
- Children's cooperation and behavior problems were predicted by quality of care in family child care homes (Clark-Stewart, Vandell, Burchinal, O'Brien, and McCartney, 2002).

It is important to note that none of these findings were causal. More work needs to be done in order to make any further statements regarding the kinds of relationships between these child outcomes and teacher education and training.

## **Summary**

Early care and education teacher education and training are two of the most significant indicators of important teacher behaviors, program quality, and positive outcomes for young children. Specialized training is especially important for teachers of infants and toddlers. Work needs to be done to conceptualize and measure the concept of teacher training revolving around these questions: How is training different from education? How do we measure training? Is it only a matter of the number of hours? Should we and how do we assess the level of sophistication of training?



**Chart 1: Focus and Results of Primary Studies, 1980 to Present**

Author/ Date of Study	Data Set	Focus of Study	Results
Howes 1983	Not stated  Child care centers Child care homes	Examination of relationships between variations within day care settings and adult caregiving behaviors	<ul style="list-style-type: none"> <li>➤ Family child care caregivers with more training were more likely to play, mediate objects, and respond positively to social bids.</li> <li>➤ Center caregivers with more training were more likely to play, to mediate objects, express positive affect, and respond positively to toddlers' social bids, and less likely to restrict toddlers' activities or to ignore toddlers' requests.</li> </ul>
Kaplan and Conn 1984	Michigan  Child care centers	An assessment of training impact in a statewide child care provider training project.	<ul style="list-style-type: none"> <li>➤ Twenty hours of training can stimulate caregivers to improve the child care setting and to increase their involvement in care.</li> <li>➤ After training, caregivers increased their physical caregiving activities and activities that facilitate social development.</li> <li>➤ There is some evidence to suggest that caregivers facilitated emotional development after training.</li> </ul>



<p>Whitebook, Howes and Phillips 1989</p>	<p>NCCSS – Atlanta, Boston, Detroit, Phoenix and Seattle</p> <p>Child care centers</p>	<p>The goals were to:</p> <ul style="list-style-type: none"> <li>• Update available information on the characteristics, qualifications and job satisfaction of center-based teaching staff.</li> <li>• Examine the contribution of the teaching staff to the quality of care provided for children and families in center-based arrangements.</li> <li>• Examine differences in quality of care offered to children and the work environments offered to staff that meet different standards and in different socio-economic contexts.</li> <li>• Compare 1997 and 1988 center-based child care services.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Higher education levels were associated with more sensitivity to infants, toddlers, and preschoolers.</li> <li>➤ Teachers of infants and toddlers were more appropriate with children when they had a BA and college-level specialized training or no BA but specialized training, highlighting the need for specialized training for infant and toddler providers.</li> <li>➤ Teachers with 15 hours or more of current in-service training engaged in more appropriate caregiving, were more sensitive, less harsh, and less detached than teachers with less than this amount.</li> </ul>
<p>Arnett 1989</p>	<p>Bermuda</p> <p>Child care centers</p>	<p>Relationship between training for caregivers and caregivers' attitudes toward children and their behaviors in interactions with children</p>	<ul style="list-style-type: none"> <li>➤ Training is related to attitudes and behavior of caregivers.</li> <li>➤ Training related to less authoritarian childrearing attitudes and more positive interaction style with children, with less punitiveness and detachment.</li> </ul>



Snider and Fu 1990	Virginia  Child care center	Teacher's knowledge of developmentally appropriate practice (dap) related to education/academic degree, supervised practical experience, content areas covered in ECE courses taken, and years of employment in child care/education.	<ul style="list-style-type: none"> <li>➤ Teachers with BA with ECE scored significantly higher in dap. Those with vocational training in CD score significantly higher on dap than those with no vocational training.</li> <li>➤ Participants who had covered 10 or more content areas in their CD/ECE courses scored significantly higher on dap. The five most important content areas were planning, implementing, and evaluating dap content; creating, evaluating and selecting materials; creating learning environments; curriculum models; and observing and recording behaviors.</li> </ul>
Pence and Goelman 1991	Vancouver Day Care Research Project  Child care homes	Quality in child care – its components, correlates, measurement and implications.	<ul style="list-style-type: none"> <li>➤ Family child care specific training is a significant variable in relationship to quality of care.</li> <li>➤ General courses on and general reading about child development were not related to quality of care.</li> </ul>
Howes, Whitebook, and Phillips 1992	NCCSS – Atlanta, Boston, Detroit, Phoenix, and Seattle  Child care centers	Identification of characteristics of effective teachers in early care and education.	<ul style="list-style-type: none"> <li>➤ Caregiver's amount of formal training was the strongest predictor of appropriate caregiving with specialized training emerging as an additional predictor in infant classrooms.</li> <li>➤ Caregiver's amount of formal education best predicted sensitivity, harshness, and detachment in all age groups.</li> </ul>



<p>Cost, Quality, and Child Outcomes Study Team 1995</p>	<p>Cost, Quality and Child Outcomes in Child Care Centers Study  Child care centers</p>	<p>Combines economic and child develop perspectives to examine the relationships among the costs of child care, nature of children's experiences, and their effects on children.</p>	<ul style="list-style-type: none"> <li>➤ Child care at most centers in the US is poor to mediocre, with 40% of infants and toddlers in rooms having less than minimal quality.</li> <li>➤ Children's cognitive and social development are positively related to the quality of their child care experience across all levels of maternal education, child gender and ethnicity.</li> <li>➤ Consistent with previous research, the quality of child care is related to specific variables, one of which is staff education.</li> <li>➤ States with more stringent licensing standards have fewer poor-quality centers.</li> <li>➤ Centers provide higher than average overall quality with they have access to extra resources that are used to improve quality.</li> </ul>
<p>Kontos, Howes, Shinn And Galinsky 1995</p>	<p>California, Texas, and North Carolina  Child care homes Relative care</p>	<p>Large study with many questions, for these purposes: Who is providing family child care and relative care? What are their characteristics? What differentiates good from adequate or custodial care?</p>	<ul style="list-style-type: none"> <li>➤ Providers with more formal schooling were rated as more sensitive and less detached, observed as more responsive, and reported more nurturant and less restrictive child rearing attitudes.</li> <li>➤ Providers with more family child care training were rated as more sensitive and less detached, and rated themselves as less restrictive.</li> </ul>
<p>Kontos, Howes, Galinsky 1996</p>	<p>California, Texas, and North Carolina  Child care homes</p>	<p>Determination of which family child care providers seek training, drop out of training and the effects of training on quality of care offered by providers.</p>	<ul style="list-style-type: none"> <li>➤ Family child care providers seeking training were not substantially different in the quality of the care they offer from typical regulated providers.</li> <li>➤ Provider training was positively correlated with global quality of program at two of three sites.</li> </ul>



Cassidy, Buell, Pugh-Hoese, and Russell 1995	North Carolina Child care centers	Examination of the effect of college coursework (through TEACH) on the beliefs and classroom practices of teachers in child care centers.	<ul style="list-style-type: none"> <li>➤ Teachers who received TEACH scholarships and took at least 12 to 20 credit hours of community college coursework held more developmentally appropriate beliefs and practices than those who did not take credit hours.</li> <li>➤ 86% of the courses taken by the scholarship group were child-related and methods courses.</li> </ul>
Howes 1997	Cost, Quality and Child Outcomes in Child Care Centers Study and Florida Quality Improvement Study Child care centers	Teacher background in relation to children's experiences in center-based care	<p><i>CQCO</i></p> <ul style="list-style-type: none"> <li>➤ Age not significant.</li> <li>➤ As formal education increased, teacher behaviors were more sensitive (at BA level) and less harsh (at AA level).</li> <li>➤ As formal education increased, teachers were more responsive (at AA level).</li> <li>➤ Children in classrooms with teachers who had at least an AA degree in ECE had higher scores on verbal intelligence than when teachers had less education.</li> </ul> <p><i>FQIS</i></p> <ul style="list-style-type: none"> <li>➤ No main effects for ratio compliance or age.</li> <li>➤ As formal education increased, teacher behaviors were more sensitive, more responsibly involved, had children who engaged in most complex play with objects, and engaged in more creative activities (at BA level with ECE), higher frequencies of language play and positive management, and had children who engaged in the most complex play with peers and engaged in the most language activity (at BA with ECE and CDA level).</li> <li>➤ Teachers with CDA training received the highest frequency of positive initiations.</li> </ul>
Rhodes and Hennessy 2000	Ireland Child care centers	Examination of the effects of a 120-hour preschool training course on caregivers' behaviors and children's development in early-years settings.	<ul style="list-style-type: none"> <li>➤ Completion of a 120-hour training program resulted in higher levels of caregiver sensitivity and higher levels of play among children cared for by the caregivers who received training.</li> </ul>
Phillips,	Massachusetts, Virginia,	Associations among quality of care	<ul style="list-style-type: none"> <li>➤ Teacher training added significantly to the prediction of</li> </ul>



Mekos, Scarr, McCartney, and Shim 2000	and Georgia Child care centers	defined by structural features, process indicators, and compliance with state regulations; variation in quality based on stringency of state child care regulations and center compliance; specific quality indicators that show especially strong links to children's experience in child care.	<p>quality in infant and toddler rooms.</p> <ul style="list-style-type: none"> <li>➤ Neither the education or training of preschool teachers had an effect on the quality of classroom processes.</li> </ul>
Burchinal, Howes, and Kontos 2002	North Carolina, Texas, And California Child care homes	Do child: adult ratio, caregiver education and training and caregiver experience predict observed quality?	<ul style="list-style-type: none"> <li>➤ Caregiver education and training showed the most consistent association with observed quality.</li> <li>➤ Caregivers with more education tended to have settings with higher global quality ratings (California sample).</li> <li>➤ Caregivers who reported receiving training were rated as providing higher quality care and less detached care.</li> <li>➤ Caregiver experience was negatively related to observed quality.</li> <li>➤ Group size, ratio of children to adults, and percent of children who were babies were not significantly correlated with observed quality.</li> <li>➤ Provider education was positively correlated to being in a professional organization</li> </ul>
Clark-Stewart, Vandell, Burchinal, O'Brien, and McCartney 2002	NICHD Study of Early Child Care Child care homes	Assessment of whether regulable features of child care homes affect children's development.	<ul style="list-style-type: none"> <li>➤ Caregivers with higher levels of education and with specialized training within the last year had higher quality scores and positive caregiving ratings.</li> <li>➤ Children whose caregivers had been to college scored higher on cognitive tests (but not social or behavioral development) at 24 and 35 months than did children whose caregivers did not attend college.</li> <li>➤ Children in homes with higher quality scores scored higher on standardized cognitive and language assessments at 15,24, and 36 months.</li> <li>➤ Children's cooperation and behavior problems were predicted by quality of care.</li> </ul>



**Chart 2: Measuring Education and Training of Teachers in Early Care and Education Contexts**

Author(s) and Date of Study	Data set/Contexts	Measurement of Education	Measurement of Training
Howes 1983	Not stated  Child care centers Child care homes		1= none 2= attendance at workshops 3=some course/workshops 4=child care certification 5= BA in CD, psychology, education or MA in CD
Arnett 1989	Bermuda  Child care center		1= none 2= first two courses of Bermuda College training program 3= four year course in Bermuda College training program 4=4 year college education in ECE or closely related area
Whitebook, Howes and Phillips 1989	NCCSS – Atlanta, Boston, Detroit, Phoenix and Seattle  Child care centers	1= less than high school diploma 2= high school diploma 3= some college 4= BA/BS/+	0= no 1= 15 hours within the previous 12 months



Snider and Fu 1990	Virginia  Child care center	1= high school diploma 2=GED 3= CDA 4= AA in CD/ECE 5= BA in CD/ECE or elementary education 6= MA in CD or ECE 7= other Content areas: General education Child growth and development Curriculum Supervised practicum	
Pence and Goelman 1991	Vancouver Day Care  Child care homes		0= no 1= received formal training for FDC
Howes, Whitebook, and Phillips 1992	NCCSS – Atlanta, Boston, Detroit, Phoenix, and Seattle  Child care centers	1= less than high school diploma 2=high school diploma 3= some college 4= BA/BS or higher	Special training: No High school Vocational school College level BA/BS MA
Cassidy, Buell, Pugh-Hoese, and Russell 1995	North Carolina  Child care centers		12-20 credit hours in child care



Howes 1997	Cost, Quality and Child Outcomes in Child Care Centers Study and Florida Quality Improve- ment Study  Child care centers	1= high school 2= some college 3== AA 4= BA/+  Crossed with categories: Workshops CDA Courses in college AA in ECE BA or graduate work in ECE	
Phillips, Mekos, Scarr, McCartney, and Abbott-Shim 2000	Massachusetts, Virginia, and Georgia  Child care centers	Nine point scale from no high school or GED to Ed.D, Ph.D.	Specialized training: 0 – 4 where 0=no specialized training and 4= training in college/graduate school
Burchinal, Howes, and Kontos 2002	North Carolina, Texas, And California  Child care homes	0= less than 9 <sup>th</sup> grade 1= 9-11 years of education 2= * (not indicated) 3= high school only 4= some college 5= BA/BS 6 = MA/MS 7= Ph.D.	Training defined as type and number of workshops outside of formal education, ended up using binary variable that indicated whether caregiver had training or not because data was not collected in a standard way.
Clark-Stewart, Vandell, Burchinal, O'Brien, and McCartney 2002	NICHD Study of Early Child Care  Child care homes	1= less than high school diploma 2= high school diploma 3= some college/AA 4= college degree 5= some graduate work/MA 6= advanced degree	1= high school level 2= certification, vocational/adult education or degree in related field 3=some college training 4=college or graduate degree in CD, child care or ECE  Recent training: 0= none 1= some





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