Better Beginnings

THE SEEDS TO SUCCESS MODIFIED FIELD TEST:

Impact Evaluation Findings

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The Early Learning Initiative

In 2006, the Gates Foundation launched the Early Learning Initiative to improve the school readiness of Washington State's children through three main strategies: (1) development of high-quality, community-wide early learning initiatives in two communities; (2) enhancement of statewide systems that support early learning; and (3) support for implementation of promising practices. The foundation joined with other private funders and state officials to form Thrive by Five Washington (Thrive) to energize development and support of high-quality early learning opportunities for all children in the state.

In tandem with the formation of Thrive, the Gates Foundation sought two communities with a high level of need for early learning services and the capacity to develop and implement high-quality, community-wide early learning initiatives. After researching possibilities and consulting with community stakeholders, the Gates Foundation selected White Center, an unincorporated area just outside Seattle, and East Yakima, a neighborhood in the central Washington community of Yakima. Thrive worked with an intermediary agency in each community to develop and implement the initiative. In East Yakima, Educational Service District 105 serves as the intermediary through its Ready by Five (Rb5) project. In White Center, Puget Sound Educational Services District (PSESD) operates the White Center Early Learning Initiative (WCELI). Three key partners, Child Care Resources (CCR), the Seattle King County Department of Public Health, and Open Arms Perinatal Services, work with PSESD to manage the initiative and provide services.

Thrive, the two communities, and other stakeholders worked closely with the Washington State Department of Early Learning (DEL) to develop a quality rating and improvement system (QRIS) for child care. In 2009, Thrive and the communities began the Seeds to Success Modified Field Test (Seeds), a streamlined version of the DEL model. This field test included an impact study (a randomized controlled trial to assess the effectiveness of the model) and an implementation study (to determine if the model was implemented as planned). Rb5 and CCR implemented the field test in East Yakima and White Center, respectively; this included recruiting participants, training coaches, delivering the coaching model, and administering the financial grants.

About the Evaluation

Mathematica Policy Research conducted an impact evaluation and an implementation study of the Seeds modified field test (Boller et al. 2010). The impact evaluation was designed to determine whether the coaching model and financial incentives implemented as part of Seeds affect the quality of services provided by participating child care businesses (in both family home and center settings) as compared to services provided by businesses that did not receive Seeds. Across the two communities, 52 family child care providers and 14 centers that volunteered to participate in the Seeds field test were randomly assigned into treatment and control groups.[1] Businesses in the treatment group received coaching, quality improvement grants, professional development opportunities, and access to funds, and businesses in the control group received only professional development opportunities, and access to funds. The impact of Seeds was defined as the difference between businesses in the treatment and control groups after the seven-month study period, controlling for baseline differences. This brief highlights key findings from the impact evaluation.

The goals of the Seeds implementation study were to determine whether Seeds successfully provided intensive, high-quality coaching and other supports to participating businesses and to capture the lessons learned by the participating agencies and businesses. Other important study goals included documenting lessons learned about (1) collecting data required for the Seeds rating and (2) using the Seeds rating rubric. A companion brief presents key findings from the implementation study (Del Grosso et al. 2010).

[1] For the Seeds field test, Rb5 and CCR focused the initiative on providers serving infants, toddlers, and preschool-age children.

The Seeds to Success Modified Field Test:
Impact Evaluation Findings

For the modified field test, the Seeds model had two quality categories: curriculum and learning environment and professional development and training.

The Seeds to Success Model: An Overview

For the modified field test, the Seeds model had two quality categories: curriculum and learning environment and professional development and training. Each participating business received a Seeds rating based on its scores on the two quality categories. Quality ratings ranged from 1 to 5, with 5 being the highest. Businesses could achieve a 5 if they met the ratio requirements in the curriculum and early learning area and met the level 4 Seed rating requirements in all other areas. The Seeds ratings for the modified field test were calculated using the following information:

1. A curriculum and learning environment score was calculated by taking an average of the Environment Rating Scale (ERS) items for family child care providers; for child care centers, a center-level score was calculated by taking the mean of the classroom-level ERS scores.[2,3]
2. A professional development and training score was determined by the education and experience data reported by family child care providers and their assistants and center-based staff (including directors, lead teachers, and assistants) on self-administered questionnaires and interviews.

In the Seeds model, a participating business must meet the requirements in every category of a level to qualify for a rating at that level. The overall Seeds ratings are then calculated by taking the minimum value among the curriculum and learning environment score and the lowest score from the professional development and training scores.

As part of the Seeds field test, participating providers (those in the treatment group) received the following:

- **Coaching.** Each family child care provider, center-based classroom, and center director was eligible to receive eight hours of coaching per month. Coaching hours for center classrooms were divided between lead teachers and assistants, with more hours intended for lead teachers. Providers and coaches developed quality improvement plans (QIPs) that were used to guide the coaching sessions.
- **Quality Improvement Grants.** Programs received quality improvement grants based on their Seeds rating, with higher-rated programs receiving more funding (Table 1).
- **Professional Development Opportunities and Funds, Plus Supports.** Providers were offered professional development opportunities, including funds for training and course work. In addition, participating providers had access to funds to cover the costs of child care expenses, release time, and books.

In contrast, providers in the control group had access only to professional development opportunities and funds.

The Impact Study Design

The Seeds impact study was designed to address the following research questions:

- Did Seeds improve the quality of child care available in participating child care businesses?

[2] The version of the scale used during the observations depended on the setting: the Early Childhood Environment Rating Scale–Revised and the Infant/Toddler Environment Rating Scale–Revised were used in child care centers; the Family Child Care Environment Rating Scale–Revised was used in family child care homes (Harms et al. 1998; Harms et al. 2003; Harms et al. 2007).
[3] During the field test, Mathematica conducted the ERS observations.

To test the impacts of the coaching and financial incentives provided by Seeds on the quality of child care and on Seeds scores, Mathematica conducted a randomized controlled trial that included random assignment of child care providers to either the treatment group or a control group.

TABLE 1. Quality Improvement Grants, by Seed Level and Program Type[a]

Seed Level	Family Child Care Providers (Annual Maximum Amount)	Child Care Centers (Annual Maximum Amount)
1	$1,200	$1,800
2	$3,600	$4,800
3	$5,400	$9,000
4	$7,200	$10,800
5	$9,000	$12,600

Source: Seeds to Success: Washington State's Quality Rating and Improvement System, Washington State Department of Early Learning.

[a] For the field test, providers received quality improvement grants that were prorated to account for Seeds lasting less than 12 months.

- Did Seeds increase the amount of education, training, and technical assistance services accessed by participating child care businesses?
- Did Seeds improve the level of education and experience of the workforce employed in participating child care businesses?

To test the impacts of the coaching and financial incentives provided by Seeds on the quality of child care and on Seeds scores, Mathematica conducted a randomized controlled trial that included random assignment of child care providers to either the treatment group or a control group. Because the evaluation used rigorous methods like those used in medical research, we are able to conclude that any differences between the treatment and control groups at the end

Seeds Coaching Model

In 2008, Thrive developed the Consultative Coaching Program for Early Learning Professionals. This coaching program adapts the Coach Training Institute's Co-Active Coaching[a] model and incorporates Gary Bloom's Blended Coaching[b] techniques and principles of process consultation,[c] all within the early learning context. The goal of the Consultative Coaching Program is to train coaches to develop a trusting relationship with early learning professionals so that they can help early learning professionals reflect on their practice (1) in the classroom or in their business and (2) during interactions with the other providers in that setting, with families, and with the children that are in their care. The Seeds coaches were also trained to help the treatment group professionals stay motivated to attain their quality improvement goals and to help establish skills and behaviors that support continuous quality improvement.

[a] The Co-Active Coaching model is a relationship-based approach designed to create relationships between coaches and the staff they work with. When applying the Co-Active Coaching model, coaches are to advise or problem solve together with the coaching recipient (The Coaches Training Institute 2010).

[b] The Blended Coaching model is based on more than 15 years of field work at the New Teacher Center, University of California, Santa Cruz. When applying the model, coaches are to move between facilitative and instructional approaches in their practice (Bloom et al. 2005).

[c] Process consultation rests on the belief that clients have the answers to questions about their practice, not the consultant/coach, and that the job of the consultant/coach is to help by facilitating clients' thinking and action rather than impose their own thinking on clients and their work (Schein 1969).

The Seeds impact study draws on several data sources, including interviews with family child care providers, self-administered questionnaires for center directors and educators, and child care quality observations.

of the evaluation were caused by Seeds. The impact of the Seeds intervention is defined as the differences between the treatment and control groups on key outcomes including service receipt, education and professional development, and child care quality.

The Seeds impact study draws on several data sources, including interviews with family child care providers, self-administered questionnaires for center directors and educators (lead and assistant teachers), and child care quality observations. In the interviews and questionnaires, staff were asked about their training experiences and education as well as the characteristics of their child care businesses. Observations included measures used widely in the study of child care quality and administered by well-trained and certified Mathematica field staff: the Environmental Rating Scales (ERS), the Arnett Caregiver Interaction Scale (CIS), and counts of the children and adults. We used the appropriate ERS to observe each child care setting, and the CIS for all settings.

Following random assignment and before the Seeds intervention began in spring 2009, Mathematica conducted baseline data collection for the impact study. Approximately seven months after the baseline data collection period (six months after the start of services), Mathematica conducted follow-up data collection.

Observation Measures

The Environment Rating Scales (ERS) are designed for use with different age groups and types of child care settings, but they share the same format and scoring system. Items are rated from 1 to 7, with descriptors provided by the authors for ratings of 1 (inadequate), 3 (minimal), 5 (good), and 7 (excellent).

- The Early Childhood Environment Rating Scale-Revised (ECERS-R) (Harms et al. 1998) consists of 43 items that assess center-based child care quality provided to children ages 2½ to 5.
- The Infant/Toddler Environment Rating Scale-Revised (ITERS-R) (Harms et al. 2003) consists of 39 items that assess the quality of center-based child care for infants and toddlers up to 30 months.
- The Family Child Care Environment Rating Scale-Revised (FCCERS-R) (Harms et al. 2007) consists of 38 items that assess the quality of child care provided in family child care homes.

As per the authors, we created a total ERS score for each observation as well as seven subscale scores: (1) space and furnishings, (2) personal care routines, (3) listening and talking/language and reasoning, (4) activities, (5) interaction, (6) program structure, and (7) parents and staff. Across the three versions, the exact number and content of items varied.

The Arnett Caregiver Interaction Scale (CIS) (Arnett 1989) is a 30-item scale that assesses the quality of the caregiver/teacher's interactions with children. Observers rate the caregiver/teacher on a scale of 1 to 4 in the following areas: Sensitivity, Harshness, Detachment, Permissiveness, and Independence. A score of 1 means the behavior is "not at all" characteristic of the caregiver/teacher, 2 indicates "somewhat" characteristic, 3 "quite a bit," and 4 "very much." Higher scores indicate more positive behavior. For example, a high score on the harshness items means providers/teachers are not harsh with the children they serve.

In addition to these measures, we derived two measures from the counts of children and adults conducted during observations. Group size refers to the average number of children observed; the child-adult ratio refers to the average ratio of children to adults.

Key Evaluation Findings

- More treatment group center teachers than control group teachers reported enrollment in education and training services; no differences were found for family child care providers.
- Seeds affected a few education outcomes for center staff and family child care providers (for example, number of credits earned).
- Seeds decreased turnover among lead teachers.
- Seeds significantly improved observed quality in centers and family child care homes.
- Seeds did not improve observed group size or child-adult ratio in centers or family child care homes.
- Despite large impacts on observed quality, coaching and quality improvement grants did not improve Seeds scores.

Seeds had a positive impact on center teacher enrollment in courses and other educational programs.

Impacts on Receipt of Education and Professional Development Services

Seeds had a positive impact on center teacher enrollment in courses and other educational programs (Table 2). Lead and assistant teachers in the treatment group were much more likely than those in the control group to report being enrolled in a teacher-related training or education program (60 percent of lead teachers in the treatment group versus 15 percent in the control group; 52 percent of assistant teachers in the treatment group versus 15 percent in the control group). Lead, but not assistant, teachers in the treatment group were more likely than those in the control group to report attending college courses once a month or more (36 and 2 percent for lead teacher treatment versus control group members). More assistant teachers (but not lead teachers) in the treatment group reported participating in training or workshops once a month or more (46 percent of assistant teachers in the treatment group versus 6 percent in the control group). Seeds did not significantly improve family child care provider enrollment in an education or training program or the frequency of training and technical assistance they received (Table 3).

Treatment group staff members (center directors, teachers, and family child care providers) received significantly more coaching than control group staff. This means that businesses in the control group (who were not able to access Seeds coaching) did not access coaching from other sources that was as intensive as Seeds coaching. Lead and assistant teachers in the treatment group were much more likely than those in the control group to report receiving weekly ongoing consultation from a specialist, coach, or mentor (70 percent of lead teachers in the treatment group versus 14 percent in the control group and 53 percent versus 9 percent of assistant teachers; Table 2). Family child care providers in the treatment group were much more likely than providers in the control group to report receiving weekly or more frequent visits from a coach (65 percent of treatment group members reported weekly or more frequent visit from coaches, versus none in the control group; Table 3).

Impacts on Education and Experience Outcomes

Improvements in staff education and experience require sustained supports and incentives to encourage staff to take courses and remain in their positions over time. Because the Seeds evaluation follow-up data collection was only six months after the start of implementation of the Seeds model, the likelihood of observing impacts on these educational outcomes was low. For the center-based teachers, Seeds had a positive impact on teachers' completion of three or more credits in the past six months but did not have an impact on completion of a postsecondary degree for lead teachers and assistants (Table 4). There was no consistent pattern of positive impacts of Seeds on family child care providers' educational attainment (Table 5). Providers in the treatment and control groups had nearly identical levels of high school and college completion (38 versus 37 percent had completed some college or held a postsecondary degree, respectively), and only 11 percent of the treatment group reported holding a CDA credential, compared with 24 percent of the control group.

One measure of staff experience providing child care is the number of years staff have worked at their current job. For teachers (both leads and assistants), the number of years working at their current job was consistently lower for the treatment group as compared to the control group (Table 4). After controlling for baseline differences, lead teachers in the treatment group had around 3 years of experience at their current job, versus 4.5 years of experience among teachers in the control group.[4] For lead teachers, this significant, negative treatment-control difference in experience is possibly related to differential internal promotions in the control group versus the treatment group. We found that more assistant teachers in the control group were promoted to lead teachers within their centers (29 percent of assistant teachers in the control group at baseline held other positions in their centers at follow-up—usually lead teacher posts—compared to only 8 percent in the treatment group). Because these newly promoted lead teachers in the control group had more years of experience than the teachers they replaced, lead teachers in the control group "gained" years of experience, on average, relative to lead teachers in the treatment group during the study period. There was no impact of Seeds on years in current job for family child care providers (Table 5).

Impacts on Teacher Turnover

Lead teachers in the treatment group were much less likely than lead teachers in the control group to leave their centers during the study period (19 percent of treatment group teachers who completed baseline questionnaires left by follow-up, versus 45 percent in the control group; Table 6). In contrast, turnover of assistant teachers was not significantly different across the two groups. As mentioned above, assistant teachers in the control group were more likely to switch to a new position within their centers than assistant teachers in the treatment group. This is likely linked to the high turnover of lead teachers in control group centers: as lead teachers in the control group left their centers, it seems they were often replaced with assistant teachers.

Impacts on Observed Quality

Child care businesses in the treatment group had significantly higher observed child care quality scores than businesses in the control group.

Child care businesses in the treatment group had significantly higher observed child care quality scores than businesses in the control group. For child care centers, the treatment group's ERS total score was 1.52 points higher than the control group's score (Figure 1).[5] For centers, all

[4] Teachers in the treatment group actually had more experience than teachers in the control group at baseline and follow-up. However, teachers in the control group reported more experience at follow-up and thus the treatment-control gap in experience observed at baseline decreased during the study period. As a result, impact estimates show a negative impact of the Seeds field test on teachers' years of experience.

[5] For child care centers, scores were developed at the classroom level, but are reported at the center level. To generate center-level ERS scores, we computed the average of all ITERS-R and ECERS-R classroom scores for each center.

seven of the ERS subscale scores were also significantly higher for the treatment group than for the control group (ranging from a difference of 0.78 points for Space and Furnishings to 2.15 for Interaction). ERS total scores for family child care providers in the treatment group were 0.88 points higher than those of control group providers and five of the seven subscales were significantly higher for providers in the treatment group (Figure 2). Positive impacts for family child care providers on the Personal Care Routines, Listening and Talking, Activities, Program Structure, and Parents and Staff subscale scores ranged from 0.65 points for the Personal Care Routines subscale to 1.76 points for the Program Structure subscale score. Overall, the Seeds impacts on quality are much larger than those observed in recent evaluations of quality improvement initiatives (Landry et al. 2009; Jackson et al. 2007; Neuman et al. 2009; Powell et al. 2010). For example, the Early Reading First evaluation (Jackson et al. 2007) found coaching impacts of one standard deviation on observed classroom quality, whereas we found Seeds impacts on overall quality as measured by the ERS of 4.6 to 5.6 standard deviations.

Impacts on Observed Group Size and Child-Adult Ratio

Group size and child-adult ratio are important aspects of child care quality, with demonstrated associations with child outcomes. In addition, child-adult ratio is part of the Seeds rating. For these, there were no statistically significant impacts for family child care providers or for centers (not shown). Research shows that it is challenging to reduce group size and ratios with little financial support and a short amount of time to hire additional staff.

Impacts on Seeds Scores

The overall Seeds scores themselves were not affected by the coaching and the quality improvement grants.

The overall Seeds scores themselves were not affected by the coaching and the quality improvement grants. For both types of child care businesses, the Seeds scores were not significantly different across treatment and control groups (for centers the scores for treatment and control groups were 2.09 and 1.45; for family child care, 1.49 and 1.37; respectively; Figures 3 and 4). To further analyze why the Seeds scores were not significantly different, and to follow up on the findings of few impacts on education and experience, we broke down the Seeds overall rating into its respective ERS and professional development (education and experience) rating standards and examined impacts on these component scores. Not surprisingly, across both types of child care businesses, the ERS was the primary component of the Seeds scores with statistically significant impacts (in centers, the ERS Seeds component score impact was 2.25 points on a scale of 1 to 5; for family child care homes, it was 0.98). There were no statistically significant positive impacts on the education and experience components of professional development. Because the scaling of the modified Seeds rating is based on its three primary components (ERS, education, and experience), and progression to the next highest rating level requires that all components are met for each level, the very large gains in the ERS did not translate into gains in Seeds scores. This finding warrants additional consideration as policymakers broaden Seeds implementation.

The Seeds impact evaluation provides important lessons for Washington State and future QRIS activities.

Key Lessons

The Seeds impact evaluation provides important lessons for Washington State and future QRIS activities. The five key lessons are:

1. Implementing the Seeds model is feasible. Coaching and incentives are sufficient to motivate participation and, overall, the model was implemented as planned.
2. The coaching and incentives that were provided under Seeds significantly improved the observed quality of child care. Most of the differences in observed quality were larger than those reported in other recent studies of child care or preschool quality improvement interventions (Landry et al. 2009; Jackson et al. 2007; Neuman et al. 2009; Powell et al. 2010).
3. The short time frame of the field test prohibited substantial gains in educational attainment, but Seeds did increase center-based teacher enrollment in training and educational activities.
4. Due to the building blocks scoring system that requires all standards at a given level to be met before a higher rating can be given, even *large* improvements in observed quality did not translate into higher Seeds scores.
5. Rating only two elements within Seeds quality categories, coupled with intensive coaching and quality improvement grants, can yield substantial observed child care quality improvements.

Given the findings, the Seeds coaching and quality improvement approach is worthy of replication and further study. Questions for the future include, "Can fewer hours of coaching improve quality?" and "Do quality improvements lead to enhanced child outcomes?"

TABLE 2. Seeds Impacts[a] on Center Lead and Assistant Teacher-Reported Enrollment in Training/Education Programs and Frequency of Coaching (Percentages)

	Lead Teachers				Assistant Teachers			
Characteristic	Treatment	Control	Difference	Effect Size[b]	Treatment	Control	Difference	Effect Size[b]
Enrolled in Teacher-Related Training or Education Program	60	15	45***	1.29	52	15	37***	1.11
Enrolled in Child Development Associate (CDA) program[c]	13	4	8	1.73	--	--	--	n.a.
At Least One Community or Four-Year College Course Attended Monthly	36	2	34***	2.06	29	9	20	0.88
At Least One Training Workshop Attended Monthly	35	14	22	0.75	46	6	40**	1.54
At Least One Training Consultation from a Specialist, Coach, or Mentor[d] Weekly	70	14	56***	1.61	53	9	44**	1.47
Sample Size	30–31	26–28			34–36	17–19		

Source: Baseline Teacher Questionnaire completed in spring 2009 and Follow-Up Teacher Questionnaire completed in winter 2010.
[a] Impact is defined as treatment-control differences at follow-up, after controlling for baseline differences.
[b] Effect size is defined as the treatment-control difference divided by the standard deviation of the outcome measure among the control group.
[c] Due to a limited amount of variability in teachers' responses and small sample sizes, this figure is not reported for assistant teachers.
[d] Coaches and mentors could include services other than those provided through Seeds. For the treatment group, we assume these are Seeds coaching/mentoring experiences. Control group members were free to obtain any services other than those provided through Seeds. These questions were designed to assess differences across groups in these types of services.
** Significant at 0.05; *** Significant at 0.01.

TABLE 3. Seeds Impacts[a] on Family Child Care Provider-Reported Enrollment in Training/Education Programs and Frequency of Coaching (Percentages)

Characteristic	Treatment	Control	Difference	Effect Size[b]
Enrolled in Teacher-Related Training or Education Program	34	26	7	0.21
Enrolled in Child Development Associate (CDA) Program	29	10	18	3.00
At Least One Training and Technical Assistance Activity Attended Monthly	41	46	–5	–0.12
At Least One Mentor/Coach Visit[c] Weekly	65	0	65***	n.a.
Sample Size	25	23		

Source: Baseline Family Child Care Provider Interview completed in spring 2009, and Follow-Up Family Child Care Provider Interview completed in winter 2010.
Note: Effect size is not defined when the control group mean equals zero.
[a] Impact is defined as treatment-control differences at follow-up, after controlling for baseline differences.
[b] Effect size is defined as the treatment-control difference divided by the standard deviation of the outcome measure among the control group.
[c] Coaches and mentors could include services other than those provided through Seeds. For the treatment group, we assume these are Seeds coaching/mentoring experiences. Control group members were free to obtain any services other than those provided through Seeds. These questions were designed to assess differences across groups in these types of services.
*** Significant at 0.01; n.a. = not applicable.

TABLE 4. Seeds Impacts[a] on Education and Experience of Center Lead and Assistant Teachers (Percentages Unless Otherwise Indicated)

	Lead Teachers				Assistant Teachers			
Characteristic	Treatment	Control	Difference	Effect Size[b]	Treatment	Control	Difference	Effect Size[b]
Earned at Least Three Credits in the Past Six Months[c]	--	--	--	n.a.	41	16	25*	2.42
Highest Grade or Year of School Completed Some college or higher	28	30	–2	-0.06	20	19	1	0.05
Has Child Development Associate (CDA) Credential	26	13	12	0.48	30	10	20	0.80
Average Years Worked at Current Job	3.1	4.5	–1.4**	–3.90	2.2	3.5	–1.3*	-1.98
Sample Size	**30–31**	**26–28**			**34–36**	**17–19**		

Source: Baseline Teacher Questionnaire completed in spring 2009, and Follow-Up Teacher Questionnaire completed in winter 2010.
[a] Impact is defined as treatment-control differences at follow-up, after controlling for baseline differences.
[b] Effect size is defined as the treatment-control difference divided by the standard deviation of the outcome measure among the control group.
[c] Due to a limited amount of variability in teachers' responses and small sample sizes, this figure is not reported for lead teachers.
* Significant at 0.10; ** Significant at 0.05.

TABLE 5. Seeds Impacts[a] on Education and Experience of Family Child Care Providers (Percentages Unless Otherwise Indicated)

	Family Child Care Provider			
Characteristic	Treatment	Control	Difference	Effect Size[b]
Earned at Least Three Credits in the Past Six Months	21	14	6	0.90
Highest Grade or Year of School Completed Some college or higher	38	37	0	0.01
Has Child Development Associate (CDA) Credential	11	24	–13*	–0.54
Average Years Worked at Current Job	7.2	6.6	0.6	0.47
Sample Size	**25**	**23**		

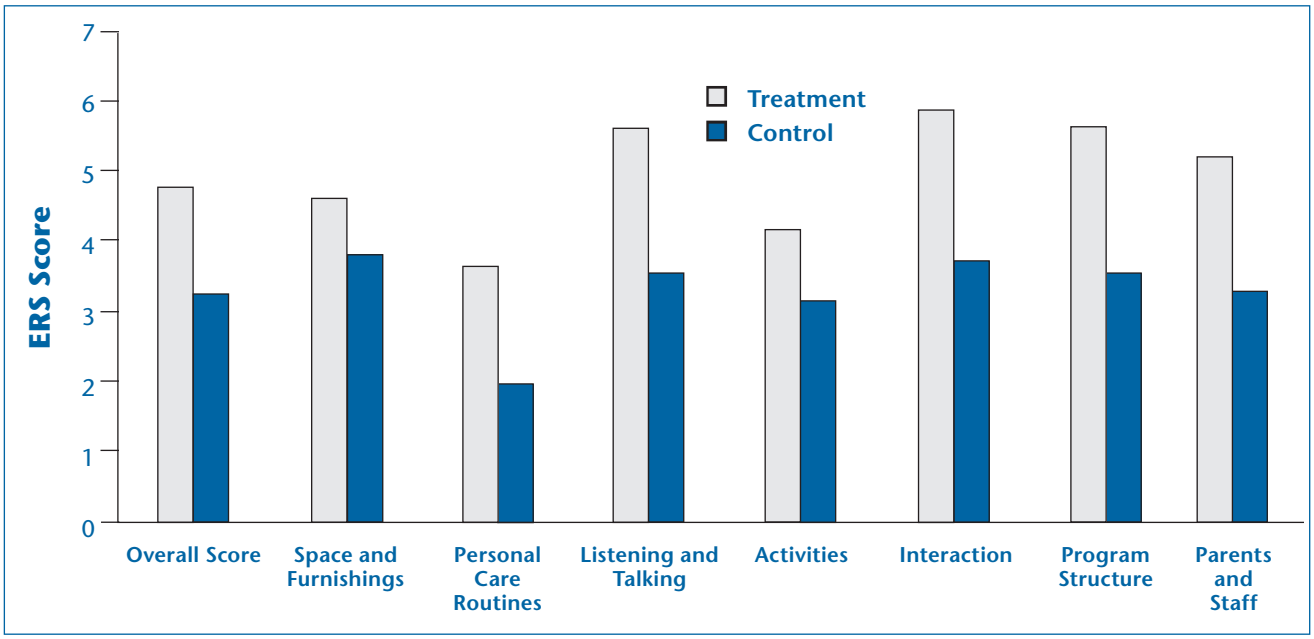
Source: Baseline Family Child Care Provider Interview completed in spring 2009 and Follow-Up Family Child Care Provider Interview completed in winter 2010.
[a] Impact is defined as treatment-control differences at follow-up, after controlling for baseline differences.
[b] Effect size is defined as the treatment-control difference divided by the standard deviation of the outcome measure among the control group.
* Significant at 0.10.

TABLE 6. Seeds Impacts[a] on Turnover Among Lead and Assistant Teachers (Percentages)

	Lead Teachers				Assistant Teachers			
Characteristic	**Treatment**	**Control**	**Difference**	**Effect Size[b]**	**Treatment**	**Control**	**Difference**	**Effect Size[b]**
Changed Classroom in the Center	5	3	2	0.41	9	20	–11	–0.56
Switched to a New Position in the Center	8	5	3	0.28	8	29	–21*	–0.94
Left the Center by Follow-Up	19	45	–26*	–0.76	38	30	8	0.21
Switched Positions or Left the Center by Follow-Up[c]	27	50	–23	–0.60	46	59	–13	–0.32
Sample Size	**32**	**27**			**36**	**20**		

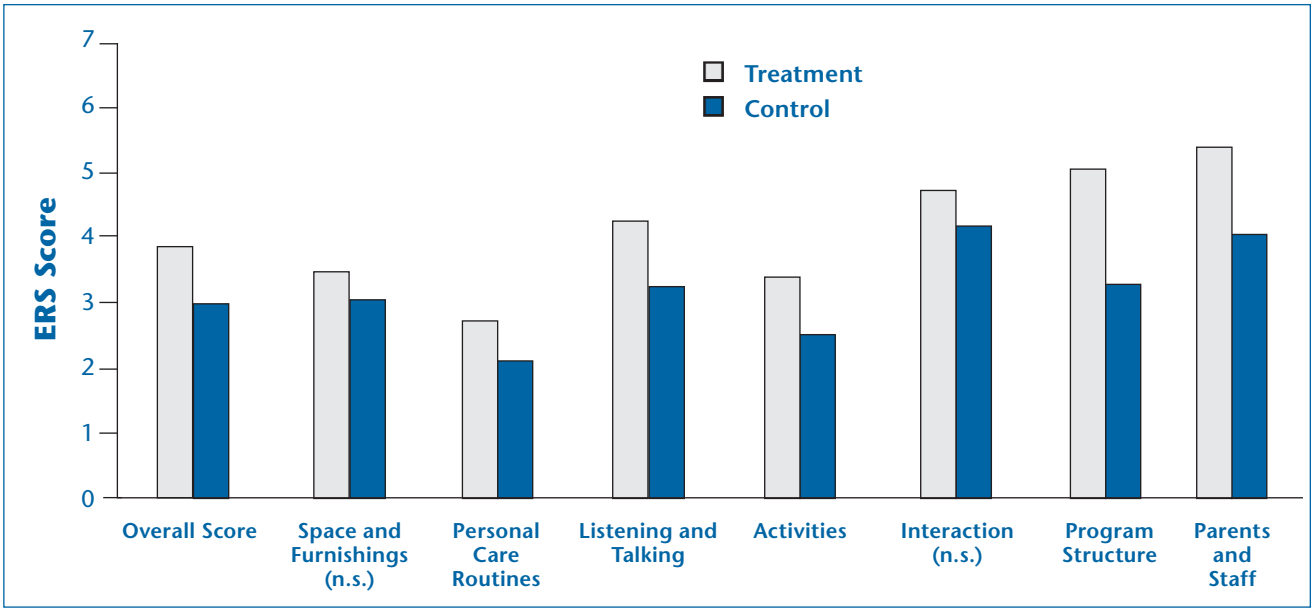
Source: Baseline Teacher Questionnaire completed in spring 2009 and Follow-Up Teacher Questionnaire completed in winter 2010.
[a] Impact is defined as treatment-control differences at follow-up, after controlling for baseline differences.
[b] Effect size is defined as the treatment-control difference divided by the standard deviation of the outcome measure among the control group.
[c] This combines the two categories above to provide a summary of the staff members who either switched positions or left the center by baseline. These are exclusive categories.
* Significant at 0.10.

FIGURE 1. Seeds Impacts[a] on Child Care Centers' Observed ERS Scores



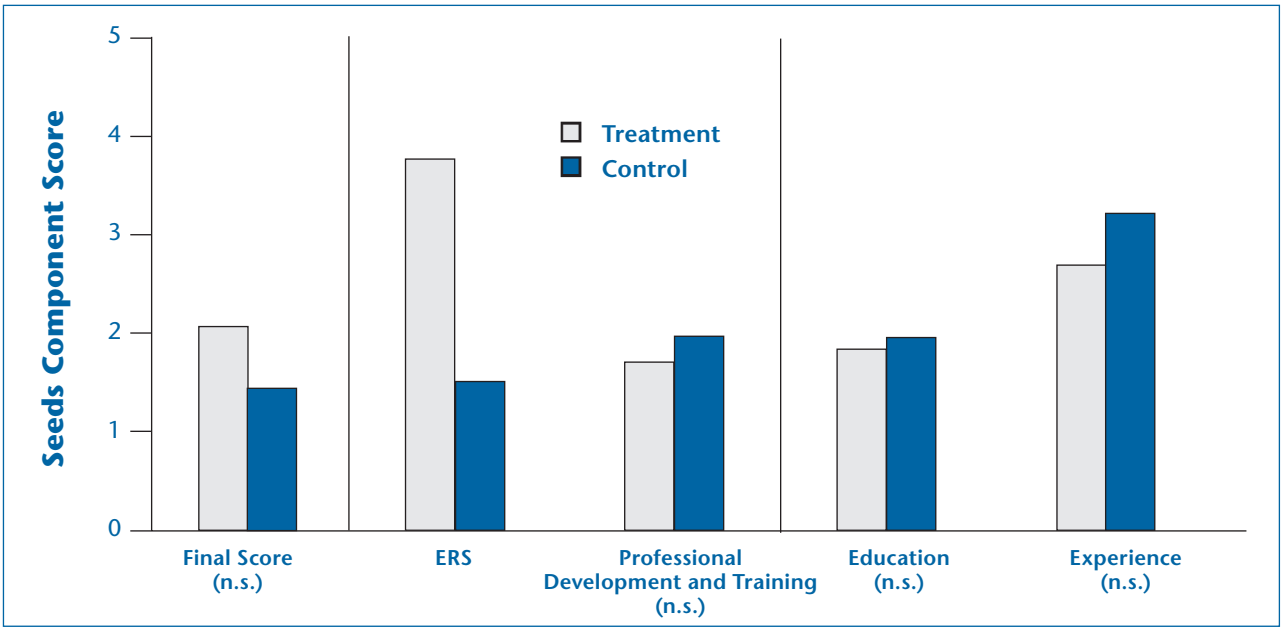
Source: Baseline Child Care Observation and Teacher Questionnaire completed in spring 2009, and Follow-Up Child Care Observation and Teacher Questionnaire completed in winter 2010.
Note: All treatment and control differences were statistically significant at 0.05 or 0.01.
Sample Size: 14.
[a] Impact is defined as treatment-control differences at follow-up, after controlling for baseline differences.

FIGURE 2. Seeds Impacts[a] on Family Child Care Providers' Observed ERS Scores



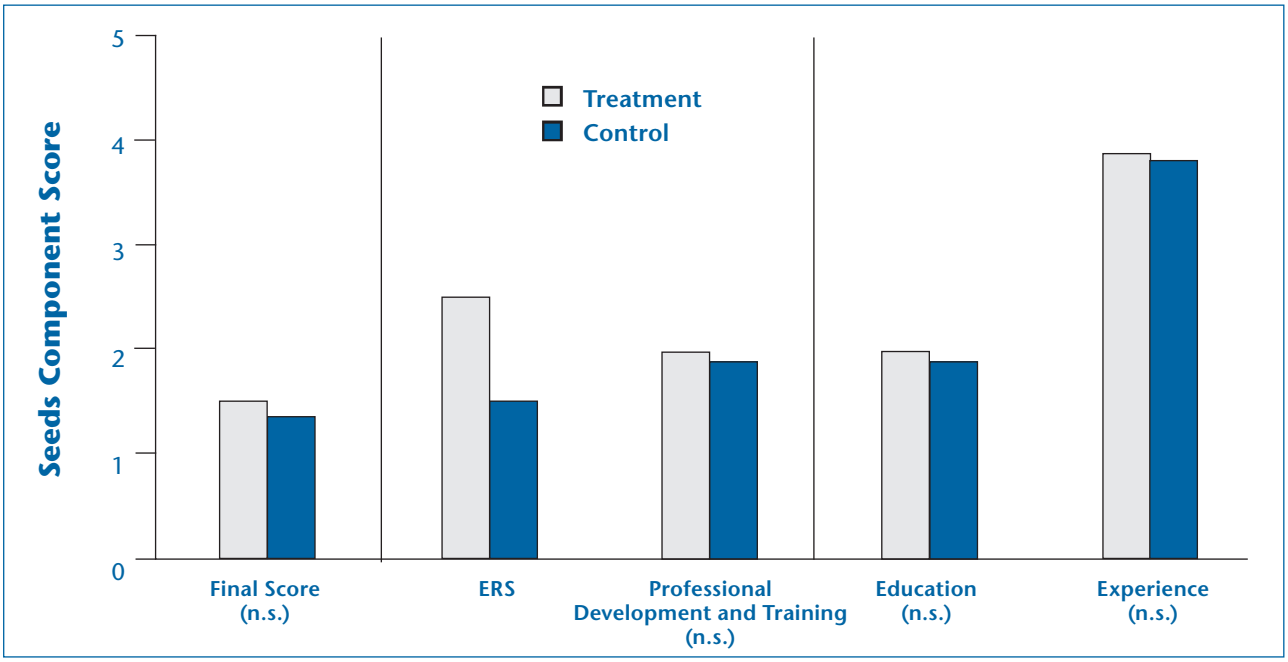
Source: Baseline Child Care Observation and Family Child Care Provider Interview completed in spring 2009, and Follow-Up Child Care Observation and Family Child Care Provider Interview completed in winter 2010.
Note: All treatment and control differences were statistically significant except the Space and Furnishings and Interaction subscales. Most were at the 0.05 or 0.01 level.
Sample Size: 43.
[a] Impact is defined as treatment-control differences at follow-up, after controlling for baseline differences.
n.s.= not statistically significant.

FIGURE 3. Impacts[a] on Child Care Centers' Seeds Scores



Source: Baseline Child Care Observation and Teacher Questionnaire completed in spring 2009, and Follow-Up Child Care Observation and Teacher Questionnaire completed in winter 2010.
Note: Only ERS had statistically significant differences between treatment and control groups (0.01).
Sample Size: 14.
[a] Impact is defined as treatment-control differences at follow-up, after controlling for baseline differences.
n.s. = not statistically significant.

FIGURE 4. Impacts[a] on Family Child Care Providers' Seeds Scores



Source: Baseline Child Care Observation and Family Child Care Provider Interview completed in spring 2009, and Follow-Up Child Care Observation and Family Child Care Provider Interview completed in winter 2010.
Note: Only ERS had statistically significant differences between treatment and control groups (0.01).
Sample Size: 43.
[a] Impact is defined as treatment-control differences at follow-up, after controlling for baseline differences.
n.s. = not statistically significant.

REFERENCES

Arnett, J. "Caregivers in Day-Care Centers: Does Training Matter?" *Journal of Applied Developmental Psychology*, vol. 10, 1989, pp. 541–552.

Bloom, G. S., C. L. Castagna, E. Moir, and B. Warren. "Blended Coaching: Skills and Strategies to Support Principal Development." Thousand Oaks, CA: Corwin Press, 2005. Retrieved from http://www.Corwin.Com/Booksproddesc.Nav?Prodid=Book225999#Tab view=Title on June 14, 2010.

Boller, K., P. Del Grosso, R. Blair, Y. Jolly, K. Fortson, D. Paulsell, E. Lundquist, K. Hallgren, and M. Kovac. "The Seeds to Success Modified Field Test: Findings from the Impact and Implementation Studies." Princeton, NJ: Mathematica Policy Research, June 2010.

Coaches Training Institute. "Coach Training." Retrieved from http://www.thecoaches.com/coach-training/ on June 14, 2010.

Del Grosso, P., K. Hallgren, D. Paulsell, and K. Boller. "The Seeds to Success Modified Field Test: Implementation Lessons." Princeton, NJ: Mathematica Policy Research, April 2010.

Harms, T., R.M. Clifford, and D. Cryer. "Early Childhood Environment Rating Scale - Revised edition (ECERS-R)." New York: Columbia University, Teachers College Press, 1998.

Harms, T., D. Cryer, and R.M. Clifford. "Family Child Care Environment Rating Scale - Revised edition (FCCRS-R)." New York: Columbia University, Teachers College Press, 2007.

Harms, T., D. Cryer, and R.M. Clifford. "Infant/Toddler Environment Rating Scale - Revised edition (ITERS-R)." New York: Columbia University, Teachers College Press, 2003.

Jackson, R., A. McCoy, C. Pistorino, A. Wilkinson, J. Burghardt, M. Clark, C. Ross, P. Schochet, P. Swank, and S.R. Schmidt. "National Evaluation of Early Reading First." Final Report to Congress. U.S. Department of Education, Institute of Education Sciences, Washington, DC: U.S. Government Printing Office, May 2007.

Landry, S. H., J. L. Anthony, P. R. Swank, and P. Monseque-Bailey. "Effectiveness of Comprehensive Professional Development for Teachers of At-Risk Preschoolers." *Journal of Educational Psychology*, vol. 101, 2009, pp. 448-465.

Neuman, S. B., and L. Cunningham. "The Impact of Professional Development and Coaching on Early Language and Literacy Instructional Practices." *American Educational Research Journal*, vol. 46, 2009, pp. 532-566.

Powell, D. R., K. E. Diamond, and M. R. Burchinal. "Effects of an Early Literacy Professional Development Intervention on Head Start Teachers and Children." *Journal of Educational Psychology*, vol. 102, 2010, pp. 289-312.

Schein, E. "Process Consultation: Its Role in Organization Development." Reading, MA: Addison-Wesley Publishing Company, 1969.

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