

## Overview of the Fostering Effective Early Learning (FEEL) RCT: Design, methods and findings

The Fostering Effective Early Learning (FEEL) study used an RCT design to investigate the effectiveness of an evidence-based<sup>3,4,6</sup> in-service professional learning (PD) – *Leadership for Learning* – for improving the quality of curricula and interactions in 90 early childhood education and care (ECEC) services (i.e., preschools, long-day care) across NSW. The PD was designed to cover the foundational principles of child learning and development – self-regulation, literacy, numeracy, science and critical thinking – and featured a *cascading model* of delivery to prepare participants to take up a leadership role within their workplaces and share their new knowledge with colleagues and children’s families.

*Leadership for Learning* emphasized a focus on curriculum and developmental content, collective participation, coherence of approach, duration and active learning. It also promoted deeper knowledge regarding aspects of pedagogical leadership, change management, reflective practice, quality improvement and self-assessment. Practitioner networks, designed to support sustainability, were created through group-based delivery then reinforced through online platforms. The PD content was tailored, in part, by two research-based instruments used to measure environmental quality in ECEC settings. These were,

1. The **Early Childhood Environment Rating Scale-Extension** (ECERS-E; Sylva et al., 2010), which focuses on curriculum content, concept development and pedagogy.
2. The **Sustained, Shared Thinking and Emotional Well-being scale** (SSTEWS) scale (Siraj et al., 2015), which focuses on interactional quality, developing children’s reasoning and critical thinking and social-emotional skills via relational and intentional pedagogy.

The PD was structured across three phases and delivered over a 7-month timeframe. Phase 1 involved two full-day intensive face-to-face sessions on aspects and evidence supporting quality in ECEC. Phase 2 consisted of five fortnightly half-day sessions that focused on key areas of professional competence and curriculum content (e.g., literacy, self-regulation, numeracy, science, and critical thinking). Phase 2 also gave participants a chance to apply the PD content to their own practice before feeding it back at the next session. Finally, Phase 3 involved a concurrent online support program that provided resources and facilitated discussions outside face-to-face interactions.

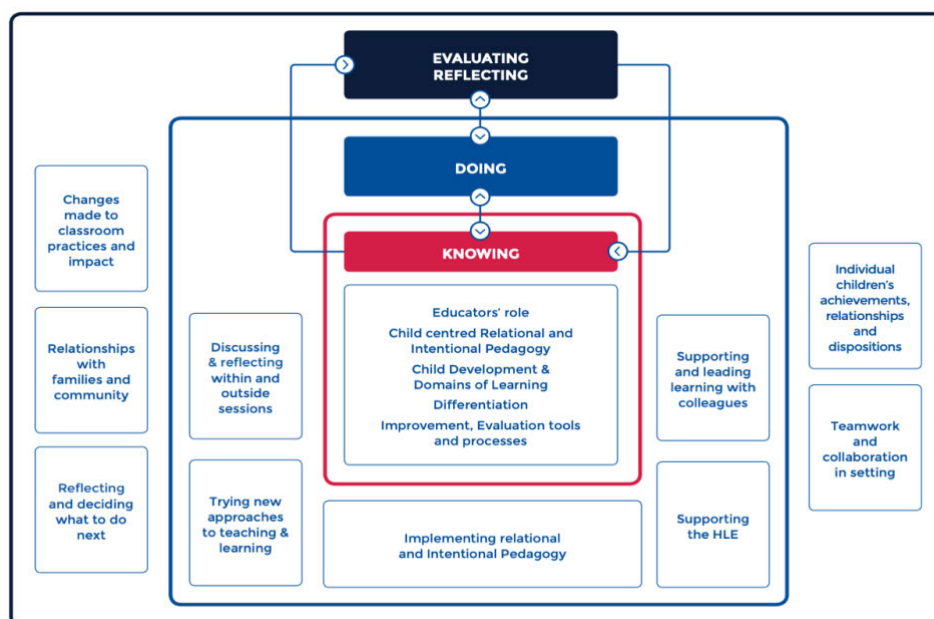
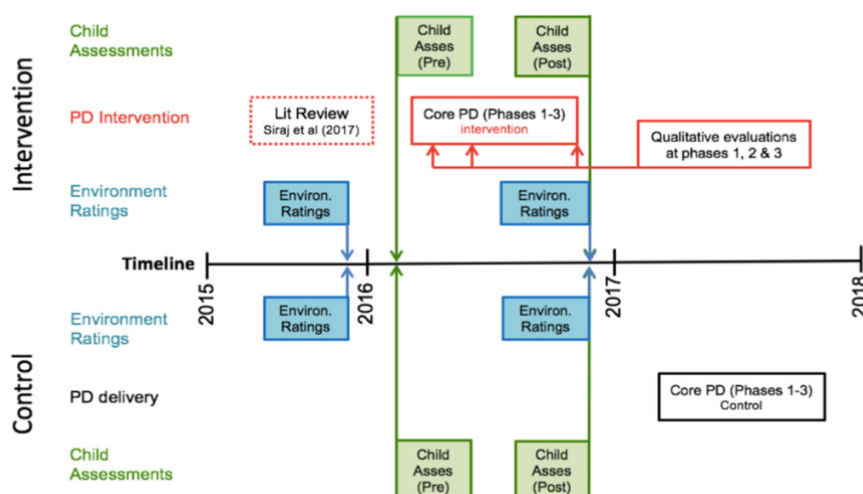


Figure 1. Leadership for Learning professional development model

Over the course of the year, participant participated in approximately 38 hours of PD. Central to the PD was the inclusion of evidence-based understandings of process-quality and how young children learn best, which included notions of holistic learning, high-quality interactions and extending children’s thinking and engagement in a variety of contexts and activities. The model of practice change which underpins the Leadership for Learning PD is presented in Figure 1.

The FEEL study represents one of the most rigorous studies of in-service PD for ECEC ever conducted. It employed a cluster randomised controlled trial (RCT) design<sup>1</sup> (see Figure 2) to examine both the direct effects of the PD program on educator practice but also changes in children’s learning outcomes associated with the intervention. After centre recruitment (late 2015), **environmental quality ratings** of each preschool classroom were conducted at the end of the year prior to the PD intervention to ensure the quality of service provision was measured at the same time of year both before and after the intervention.



**Figure 2.** The design of the FEEL cluster RCT examining the efficacy of the Leadership for Learning Professional Development

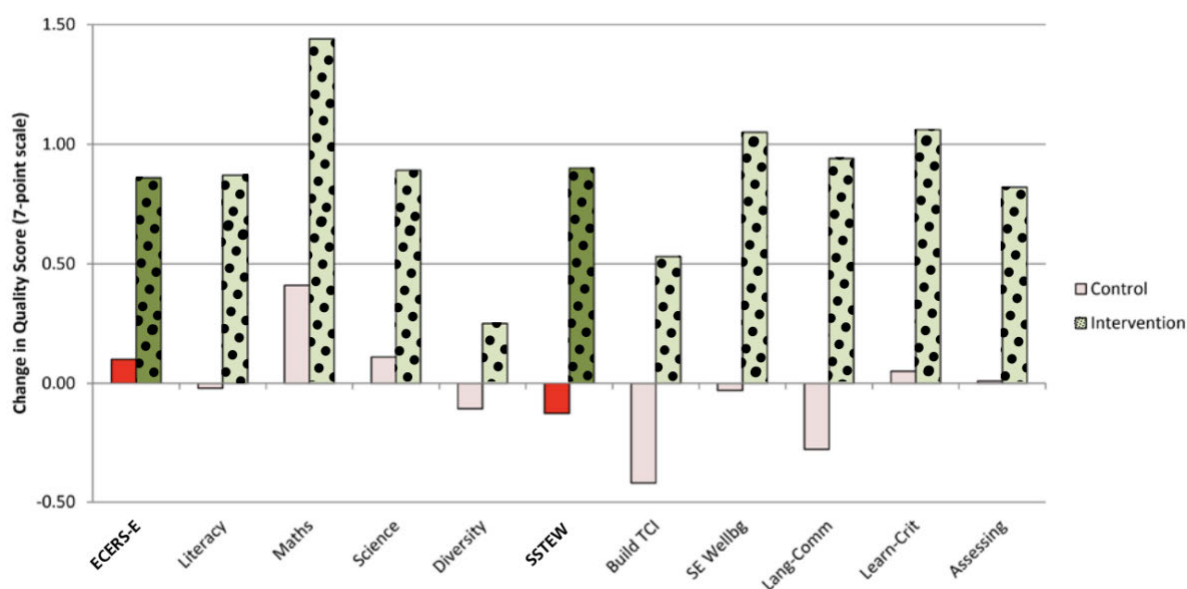
Centres in the FEEL study were selected to represent a range of service types, locations and quality (as defined on the [National Quality Standard](#); NQS) and were randomly assigned to the intervention group or control group. Table 1, below, presents a summary of the sample.<sup>5</sup>

**Table 1.** Final sample centre characteristics by group

	Intervention	Control
Number of centres	38	45
# of preschool rooms	39	54
Geographic Location	18 regional, 20 metro	18 regional, 27 metro
Service Type	28 long day care, 10 preschool	31 long day care, 14 preschool
NQS Rating	9 WT, 9 M, 19 E, 1 UR	12 WT, 14 M, 18 E, 1 UR
SEIFA Decile	M = 3.84 (45% Decile 1-3)	M = 3.89 (49% Decile 1-3)

Prior to the start of the PD program, highly trained observers undertook a one-day observation to assess curricular and interactional quality using the two quality rating scales. Assessments of participating children’s cognitive and social-behavioural development were also undertaken, using measures of language (verbal comprehension and expressive vocabulary), numeracy (early numeracy and early number concepts) and social-behavioural development (self-regulation, internalising and externalising problems, and prosocial behaviour). Post-intervention child assessments and environmental quality ratings were conducted at the end of the 9-month intervention period (see Figure 2).

Results of the randomised controlled trial indicate that the PD program had a strong positive impact on the quality of participating staff’s practice (*direct effect on quality of practice*), in all areas of curricular and interactional quality as measured on the environmental rating scales (see Figure 3). Also, the intervention led to significantly improved learning outcomes for children (*indirect effects of the PD*) in key domains of early numeracy and language development<sup>5,6</sup>. These findings provide an indication of the extent and breadth of positive outcomes that can be achieved through provision of high-quality evidence-based PD for early childhood educators.



**Figure 3.** Comparison of scale and subscale scores for intervention and control groups *ECERS-E* indicates average change scale (baseline to post-intervention across all *ECERS-E* subscales. *SSTEW* indicated average change score across *SSTEW* subscales. *Build TCI* = building trust, confidence and independence; *SE Wellbg* = social and emotional wellbeing; *Lang-Comm* = supporting and extending language and communication; *Learn-Crit* = supporting learning and critical thinking; *Assessing* = assessing learning and language)

### A multi-dimensional approach to evaluation

The benefits of the Leadership for Learning PD programme arose through a qualitative evaluation of practitioners’ perceptions of the programme<sup>6</sup>. Participants completed evaluative questionnaires at the end of each phase (see Figure 1). PD success depends, in part, on the translation of new levels of understanding including *content knowledge*, *pedagogical knowledge* and *subject-specific pedagogical knowledge* into skilful, sustainable practice and professional growth. A deeper understanding of the process of change from practitioners’ viewpoints represents a unique and important contribution from the FEEL study to our growing understanding around workforce development and quality ECEC practice.

Participants noted personal, philosophical and attitudinal shifts, improved pedagogy and practice, renewed sense of purpose, better understanding of the educational and social-emotional needs of the

children in their care, and a deeper understanding of their role as an educator in the lives of children and families. As one educator explained, Leadership for Learning gave her,

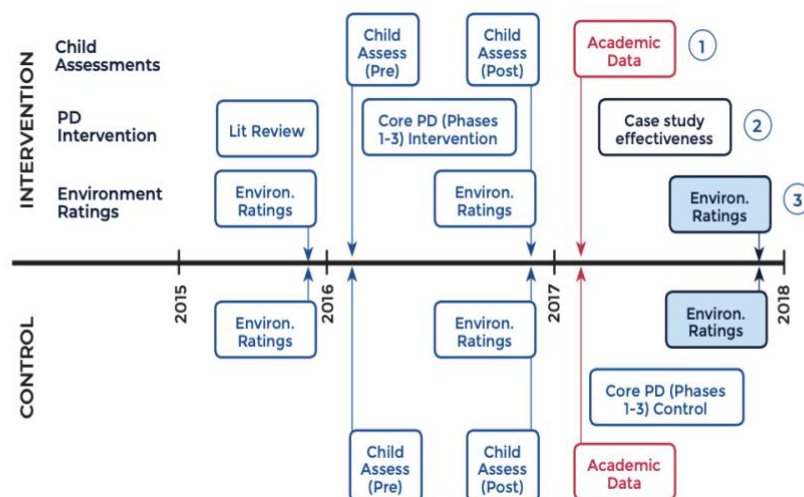
*... a clearer image of what "high-quality" actually looks like, it has made it much easier to confidently provide rich environments, interactions and experiences for children that are proven to be supportive of successful learning... it has really helped me to focus my support and training, to educate educators (and families), and to have confidence in my role. (Assistant Director)*

Findings of the qualitative evaluation provided insight into the process of new knowledge translation into professional practice. An important feature of the PD was its **cascading model of delivery**, with participants asked to adopt a leadership role with responsibility for both personal change and change in their centre teams (i.e., supporting practice change with staff not participating directly in the PD). This holistic approach was integral in ensuring room-level shifts in quality.

The inclusion of educator perspectives was important for identifying aspects of the PD that promote growth in pedagogical knowledge and skills and subsequent improved classroom quality and children's learning. For example:

- the need for multiple staff from the same service to attend the PD,
- opportunity for contextualised learning
- inclusion of structural supports and planning tools
- evidence-based illustrative practices

The perceptions of educators also indicated that the fidelity and effectiveness of the PD was linked to the capability, credibility and knowledge of the presenters, this being the most oft cited catalyst for practice change. Educators also reflected on the feeling of being valued and treated as "professionals" and they liked the interactive nature of the half-day sessions, seeing opportunities for networking and discussion of practices with other educators and services. The largest barrier to implementing changes was *time*. *Time* was a concept that emerged frequently in educators' responses and captured such things as *time to implement change*, the need for *time to reflect*, lack of *prioritisation of time* within their workplaces as well as the *time it takes to effect change*.



**Figure 3.** The design of the FEEL RCT and case study examining the efficacy of the Leadership for Learning Professional Development

### **Follow-up Case Studies of Effective Practice**

Following the FEEL intervention, subsequent investigation adopted a multiple-case study design to help determine the *practices involved in those FEEL classrooms which were high quality and whose children made the most developmental progress*<sup>2</sup> (see Figure 3). Six centres were selected based on their improvements during the intervention in curricular and interactional quality, and in child outcomes. These centres were selected to capture different growth rates, including some which had started low in quality and had shown substantial improvement and others which had started high in quality and had continued to improve.

Educators and Directors were asked to reflect on any changes they had made as a result of their involvement in FEEL – and on the structural or process qualities which had supported this change. The key structural facilitators identified by the participants included:

- whole-staff commitment to the PD
- low staff-child ratios – with three centres working at ratios of 1:8
- allocation of additional time for planning and reflection
- supportive management, which included such things as advocating for additional time for training with the management committee
- financial support for resource allocation and environmental changes.

One main obstacle impeding practice change is the ‘people affect’ or staff resistance to change. Process or relational supports identified by educators across the six highest performing centres included:

- the existence of positive and respectful staff relationships prior to involvement in the study
- strong emphasis on effective leadership
- shared vision (fostered through effective pedagogical leadership)
- a commitment to staff collaboration
- effective staff communications
- an openness and readiness for change high expectations
- enthusiasm and motivation of staff
- a value for fostering quality family-centre partnerships and community connections.

**Key practices instrumental to service quality and for ensuring positive child outcomes** identified across the six services included:

1. strong commitment to quality leadership and staff collaboration
2. effective communication
3. supportive management structure
4. high levels of intentional and relational pedagogy
5. opportunities for reflective practice
6. a broad range of curriculum content and integrated experiences
7. focus on building problem-solving and sustained shared thinking
8. use of assessment
9. deep understanding of child development
10. valuing of diversity and responsiveness to individual needs
11. staff stability
12. connections with families and the broader community.

## Endnotes

1. Melhuish, E. C., Howard, S. J., Siraj, I., Neilsen-Hewett, C., Kingston, D., de Rosnay, M., Duursma, E., & Luu, B. (2016). Fostering Effective Early Learning (FEEL): Study protocol for a cluster randomized controlled trial of a professional development program for early childhood educators to improve professional practice and child outcomes in the year before formal schooling. *Trials*, 17, 602-1 – 602-10. DOI: 10.1186/s13063-016-1742-1
2. Neilsen-Hewett, C., Siraj, I., Howard, S., Grimmond, J., & Fitzgerald, C. Case Studies of Effective Practice: Evidence form the Fostering Effective Early Learning (FEEL) Study. Sydney: NSW Department of Education. Retrieved from [https://education.nsw.gov.au/content/dam/main-education/early-childhood-education/whats-happening-in-the-early-childhood-education-sector/media/documents/Case-Studies-of-Effective-Practice-FEEL-Study\\_PDF.pdf](https://education.nsw.gov.au/content/dam/main-education/early-childhood-education/whats-happening-in-the-early-childhood-education-sector/media/documents/Case-Studies-of-Effective-Practice-FEEL-Study_PDF.pdf)
3. Siraj, I., Kingston, D., Neilsen-Hewett, C., (2019) The role of professional development in improving quality and supporting child outcomes in early education and care. *Asia-Pacific Journal of Research in Early Childhood Education*, 13, 49-68.
4. Siraj, I., Kingston, D., Neilsen-Hewett, C., Howard, S. J., Melhuish, E., de Rosnay, M., Duursma, E., & Luu, B. (2017). A review of the current international evidence considering quality in early childhood education and care programmes – in delivery, pedagogy and child outcomes. Sydney: NSW Department of Education. Retrieved from <https://education.nsw.gov.au/content/dam/main-education/about-us/educational-data/cese/2018-effects-of-early-childhood-education.pdf>
5. Siraj, I., Melhuish, E., Howard, S. J., Neilsen-Hewett, C., Kingston, D., de Rosnay, M., Huang, R., Gardiner, J., & Luu, B. (2023). Improving quality of teaching and child development: A randomised control trial of the leadership for learning intervention in preschools. *Frontiers in Psychology*, 13, 8061. DOI: 10.3389/fpsyg.2022.1092284
6. Siraj, I., Melhuish, E., Howard, S. J., Neilsen-Hewett, C., Kingston, D., de Rosnay, M., Duursma, E., Feng, X., & Luu, B. (2018). *Fostering Effective Early Learning (FEEL) study*. Sydney: NSW Department of Education. Retrieved from <https://education.nsw.gov.au/content/dam/main-education/early-childhood-education/whats-happening-in-the-early-childhood-education-sector/media/documents/5854-Feel-Study-VFA4-Accessible.pdf>



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Prepared on 8 March 2023 for Royal Commission into Early Childhood Education & Care