Technical Paper

TALIS Starting Strong 2024 Conceptual Framework



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TALIS Starting Strong 2024
Conceptual Framework



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1 Introduction

Early childhood is a critical stage in children's development since it sets the foundations for their socio-emotional learning, cognitive development, health, nutrition, and later educational success (Costa et al., 2019[1]; McCoy et al., 2017[2]; Richter et al., 2017[3]). Given this importance, enlarging children's access to high-quality early childhood education and care (ECEC)—characterised by playful and meaningful interactions and developmentally appropriate environments that promote children's development, well-being, and learning (Needham and Ülküer, 2020[4]; OECD, 2020d[5])—is an important policy concern.

Recognising the critical role of ECEC in children's development, well-being, and learning, the OECD has developed a long-term data development strategy and a data collection roadmap to increase the knowledge base around ECEC systems (OECD, 2012b[6]; 2013[7]). To help countries make well-informed policy choices, the OECD's roadmap identified a significant need for new, higher-quality data on ECEC, including but not limited to: (a) staff-level data on aspects of process quality (OECD, 2018b[8]); (b) development, well-being and learning environments (namely, ECEC settings); and (c) child development, well-being, and learning outcomes (also referred to as child outcomes). The Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) stems from this work and aims to monitor trends in the quality of ECEC settings.

TALIS Starting Strong is a large-scale international survey of staff and leaders working in ECEC settings with children in pre-primary education, with an option to survey staff working with children under the age of three. To monitor trends, TALIS Starting Strong collects long-term data about workforce characteristics, working conditions, and the nature of the work performed in ECEC settings across different countries. As a survey of the ECEC workforce, the focus of TALIS Starting Strong is to provide information on factors that have been shown to influence children's development, well-being, and learning.

Quality ECEC settings are conceptualised in the international literature as having two main dimensions: process quality and structural quality. Process quality pertains to children's daily interactions in their ECEC settings (including with ECEC staff, with other children in their classroom or playgroup, with families, and with the wider community), as well as the features of the learning environment and the materials used in everyday ECEC provision (OECD, 2021[9]). In other words, process quality refers to the factors most proximal to the child's experiences in ECEC; it is the mechanism responsible for child development, well-being and learning outcomes (Pianta et al., 2009[10]). Structural quality refers to factors that are less proximal to child development, yet are easier to measure and regulate; such as staff-child ratios, class/playgroup size, and staff qualifications and training. Factors related to structural quality are considered to be important preconditions of process quality (Slot et al., 2015[11]). Both process quality and structural quality were captured in TALIS Starting Strong 2018, and they continue to be measured in TALIS Starting Strong 2024.

The survey is intended as an internationally comparable survey of ECEC programme leaders and staff. It examines aspects related to the quality of development, well-being, and learning environments in ECEC settings by asking questions on staff beliefs and the types of pedagogical practices they deploy. Hence, the survey provides a suitable and economically feasible alternative or complement to systematic observation measures of process quality. After all, while such observation measures can

achieve reliability and validity, they remain technically and financially challenging for many countries to collect and use.

In addition, the survey captures the perspective of ECEC staff, which is often overlooked in available process quality instruments. TALIS Starting Strong captures valuable information on ECEC staff relationships with other staff, leaders, parents, and the community (OECD, 2018b[8]). The survey also seeks to inform policy around motivating, developing, and retaining staff in the profession. It therefore asks about ECEC job satisfaction, ECEC setting climate, ECEC leadership, and information related to ECEC staff turnover. The survey also gathers information on ECEC staff's educational background, as well as barriers and facilitators to continuing professional development.

The first cycle of TALIS Starting Strong in 2018 produced many policy-relevant findings, and it demonstrated the feasibility of an internationally comparable study of ECEC. It provided insights into individual indicators, as well as relationships between those indicators, both between and within countries.

TALIS Starting Strong 2018 involved nine countries that collected data from staff working with children in pre-primary education[1] (ISCED 02)[2]. In addition, four of these countries administered the survey for staff working with children under the age of three[3]. Each of these modules included a staff and leader questionnaire. Given the diversity of ECEC services and structures, TALIS Starting Strong 2018 also included a combined questionnaire version of the survey for very small settings (i.e., home-based settings, or settings with only one staff member). An expanded version of the combined questionnaire was also developed. This expanded version incorporated additional questions to account for the fact that leaders are also teachers in Israel's ISCED 02 provision.

TALIS Starting Strong 2024 is the second cycle of the survey and will involve a larger number of participating countries. The survey builds on the information collected in the first cycle to facilitate trend comparisons. It also continues to collect data from both pre-primary staff and staff working with children under the age of three using three types of questionnaires (staff questionnaire, leader questionnaire, and combined questionnaire). There are two versions of the combined questionnaire: (i) one aimed at very small centres with only one staff member or at home-based settings; and (ii) another aimed at centres whose leaders also perform staff duties. Both versions of the combined questionnaire take questions from both the staff questionnaire and the leader questionnaire.

It is important to note that this second cycle refines rather than redevelops the survey. While the TALIS Starting Strong 2024 Conceptual Framework is largely anchored on the conceptual framework of TALIS Starting Strong 2018, the former also includes updates to the latter. TALIS Starting Strong 2024 incorporates new, emerging evidence to strengthen the theoretical underpinnings of the survey. This new evidence also ensures the survey's relevance across the larger, more diverse group of countries participating in the second cycle.

Continuing from the first cycle, TALIS Starting Strong 2024 still gathers information from ECEC staff and leaders on factors that contribute to children's development, well-being, and learning, including: (a) pedagogical practices used by ECEC staff; (b) characteristics of ECEC staff and settings; (c) working conditions and job satisfaction; and (d) features of high-quality development, well-being, and learning environments (e.g., pedagogical leadership, safety of the ECEC setting, staff-child ratio and interactions).

While TALIS Starting Strong 2024 retains many content areas covered by TALIS Starting Strong 2018, this second cycle nonetheless presents an opportunity to refine ways to capture information on the survey's content areas and constructs of interest. Furthermore, it provides an avenue to collect data regarding issues of increasing relevance and of growing priority to the ECEC field since TALIS Starting Strong was last administered in 2018.

This document lays out the conceptual framework for TALIS Starting Strong 2024 and is organised into four sections, as follows:

- **Section I** discusses the purpose and goals of TALIS Starting Strong 2024 – namely, to inform policies (principles, rules, and guidelines) that could be adopted by governments and education systems to support their long-term goals and strategies regarding ECEC. This implies a focus on factors that are amenable and malleable to change at the ECEC system, setting, and staff levels. Section I also provides an overview of the survey's links to TALIS, as well as key insights obtained through the first cycle of TALIS Starting Strong.
- **Section II** provides an overview of how the focus of TALIS Starting Strong was established. It also lays out content areas that have been retained from the 2018 cycle, as well as new areas that are explored in TALIS Starting Strong 2024. It also updates the 'TALIS Starting Strong Conceptual Mapping of ECEC Environment for Children's Development, Well-Being and Learning' (Sim et al., 2019[12]). In doing so, it highlights the central role of ECEC staff in mediating children's experiences of ECEC provision and reflects new and emerging content areas for the 2024 cycle.
- **Section III** elaborates on the survey's underpinning content areas by laying out their theoretical foundation and discussing empirical findings of previous relevant research. The section proceeds along four distinct but interrelated themes:
    - Staff practices with children (including: aspects of process quality; and the monitoring and assessment of children's development, well-being and learning).
    - ECEC staff and leader characteristics (including: staff and leader demographic and education backgrounds; professional development; well-being; professional beliefs about children's development, well-being and learning; and self-efficacy).
    - ECEC setting characteristics (including: structural quality characteristics; pedagogical and administrative leadership; organisational climate and working conditions; and stakeholder relations).
    - Cross-cutting content areas (diversity, equity, and inclusion in ECEC settings; approaches to comprehensive and continuous child supports; fostering competent ECEC settings; and the use of digital technologies to support staff and leaders).
- **Section IV** discusses the survey design and methodology for TALIS Starting Strong 2024. It covers the sampling approach, definition of the target population, and actual survey procedures (including initial development of the survey instrument, pilot, field trial, and main survey administration).

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Notes

[1] Chile, Denmark, Germany, Iceland, Israel, Japan, Korea, Norway, and Türkiye.

[2] ISCED (International Standard Classification of Education) was designed by UNESCO in the early 1970s to serve "as an instrument suitable for assembling, compiling and presenting statistics of education both within individual countries and internationally" UNESCO. 1997. International Standard Classification of Education: ISCED 1997 [Online]. UNESCO. Available: http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf. [Accessed 25 June 2021]. The most recent classification of educational levels references 2011 data and was published in 2012 (ISCED-2011) UNESCO 2012. International Standard Classification of Education: ISCED 2011, Montreal, Canada: Statistics, UIS.

[3] Denmark, Germany, Israel and Norway.

2 The role and policy relevance of TALIS Starting Strong as an evolving study

TALIS Starting Strong is a large-scale international survey of staff and leaders in early childhood education and care (ECEC) settings. It is complemented by other activities and studies in the larger OECD programme of work.

Overview of TALIS Starting Strong 2024[1]

Objective and purpose as an indicator study

TALIS Starting Strong aims to provide robust international indicators and policy-relevant analysis on ECEC staff and leaders, pedagogical and professional practices in ECEC settings, and the development, well-being, and learning environments frequented by children in ECEC settings. Moreover, it describes how the aforesaid aspects of ECEC provision vary within and between countries, and how they change (or do not change) over time. In collecting cross-country data, TALIS Starting Strong acknowledges that indicators will inevitably be influenced by differences in cultural norms and values.

The indicators and analyses produced by TALIS Starting Strong intend to help countries and jurisdictions review and develop policies that facilitate child development, well-being, and learning. Given TALIS Starting Strong's focus on policy relevance, the survey covers indicators that have been theoretically and empirically found to be associated with children's positive development and learning outcomes.

The guiding principles of TALIS Starting Strong are aligned with those from the core TALIS at ISCED level 2. These are as follows:

- **Policy relevance**: Clarity about key policy issues and a focus on the questions that are most relevant for participating countries are essential.
- **Value added**: International comparisons should be a significant source of the study's benefits.
- Indicator-oriented: The results should yield information that can be used to develop indicators.
- **Validity, reliability, comparability, and rigour**: Based on a rigorous review of the knowledge base, the survey should yield information that is valid, reliable, and comparable across participating countries.
- **Interpretability**: Participating countries should be able to interpret the results in a meaningful way.

- **Efficiency and cost-effectiveness**: The work should be carried out in a timely and cost-effective way.

Like the first cycle, TALIS Starting Strong 2024 will produce:

- **Indicators** that monitor ECEC systems at the levels of staff and settings (including those related to leaders, as well as staff who work directly with children).
- A reliable, comparative **database** providing within- and between-country data on: (a) characteristics of ECEC staff and ECEC setting leaders; (b) their pedagogical practices with children; (c) professional practices in other aspects of their work; and (d) development, well-being, and learning environments.

Analyses of the survey indicators aim to elucidate the context and associations across: (a) ECEC staff and leaders' characteristics; (b) ECEC staff and leaders' pedagogical and professional practices; and (c) the different features of development, well-being, and learning environments. Furthermore, the results of TALIS Starting Strong 2024 will be a source of information for the OECD's education indicators programme, which seeks to prompt policy discourse, help shape international public policy, and inform decision-making within the ECEC and larger education system of participating countries.

Countries participating in TALIS Starting Strong have made it a priority to ensure that at least some indicators can be compared across cycles and education levels covered by the TALIS programme (see Section I). For TALIS Starting Strong 2024, this need for comparison means retaining certain questions from TALIS Starting Strong 2018 to start conducting trend analyses. However, the need for comparison does not preclude making changes that would improve on how concepts are measured in the survey. It also does not preclude introducing new items that would cover areas deemed relevant for the 2024 cycle.

Main areas for policy considerations

The policy issues identified for the first cycle remain relevant for TALIS Starting Strong 2024. The development of the first cycle's conceptual framework was guided by the document titled "Towards a Conceptual Framework for an International Survey on ECEC Staff", which was prepared in the early phases of developing TALIS Starting Strong (Loizillon, 2016[1]). This document was based on discussions with the OECD ECEC Network, which brought together: (a) international policymakers and researchers; (b) international organisations, such as the European Commission and UNESCO; (c) a subgroup of this Network, comprised of countries that were initially interested and eventually participated in TALIS Starting Strong; and (d) other external experts.

The TALIS Starting Strong 2024 Conceptual Framework is the result of an iterative process: concepts formulated by the ECEC Questionnaire Expert Group (ECEC QEG) were revised following discussions with relevant stakeholders. The ECEC QEG includes subject experts in the field of early childhood and experts in survey methodology. The ECEC QEG works in close collaboration with members of the international research consortium, the Chair of the TALIS QEG, the OECD Secretariat, and the Technical Advisory Group (TAG).

In developing the Conceptual Framework, the ECEC QEG considered: (a) participating countries' priority areas; (b) theoretical literature; (c) key developments and debates on the subject; and (d) the indicators' analytical potential. Discussions and consultations after the first cycle of data collection helped identify ways to refine and focus the policy considerations for TALIS Starting Strong 2024. For instance, the importance of diversity, equity, and inclusion was a salient point in these discussions; this has led to diversity, equity, and inclusion becoming a core policy issue for TALIS Starting Strong 2024.

In addition, the first cycle's policy issues have been streamlined from three to two for TALIS Starting Strong 2024, owing to the overlap in the scope of the second and third policy issues. As such, building on the foundational work from the first cycle, the main policy issues for the second cycle are:

- **Ensuring quality and equity in learning and well-being for all children.** This includes the following questions: what pedagogical practices are used by ECEC staff? How do staff support children's development, well-being, and learning? How do staff and leaders adapt practices to children's individual needs and different family backgrounds? Do children from different family backgrounds experience a similar quality of development, well-being, and learning environments? Are staff prepared to address the needs of an increasingly diverse child population? What are staff beliefs around issues relating to equity and diversity in ECEC settings?
- **Motivating, developing, and retaining staff in the profession.** This includes the following questions: how are ECEC staff trained? What are the barriers and facilitators of staff professional development? How satisfied are ECEC staff with their profession? How do ECEC staff describe their well-being and sources of stress? How much turnover is there among ECEC staff?

Staff- and setting-level contextual information that cuts across these different policy issues was also deemed necessary to properly interpret the results and to better address questions like:

- Who are the ECEC staff in participating countries/sub-national territories? How do their personal characteristics (e.g., demographic background, initial training and professional development, employment status, level of experience) compare?
- What settings do they work in? How do these settings and working environments compare?

Links to TALIS developed for other levels of education

TALIS Starting Strong, as part of the TALIS programme, focuses on staff and leaders working in ECEC. The core survey of TALIS focuses on teachers and principals working in lower secondary education (ISCED level 2). TALIS Starting Strong 2024 was developed in close co-ordination with the team developing the core TALIS questionnaires and has been firmly integrated into the TALIS programme for the 2024 cycle. This integration is described in the text that follows.

The development of TALIS Starting Strong was based on the same principles guiding the core TALIS survey. As discussed in Section I, the development process sought to maintain comparability between cycles to start building trend analyses, refine and improve the quality of questions, and maximise alignments and synergies with the TALIS programme for other levels of education, particularly for ISCED level 2 and primary education (ISCED level 1). Content areas were aligned across surveys, while acknowledging that item-level differences would be necessary to ensure the applicability of TALIS Starting Strong to the ECEC context.

A guiding concept paper set the direction for TALIS 2024, including for TALIS Starting Strong. This first step aimed to establish thematic alignment across surveys. Through a literature review, as well as consultations with participating countries and jurisdictions, four areas of growing priority were identified, as follows:

1. Diversity, equity, and inclusion in ECEC settings;
2. Approaches to comprehensive/continuous child supports;
3. Fostering competent ECEC settings; and
4. Digital technologies to support leaders and staff.

TALIS Starting Strong 2024 and TALIS 2024 share some common areas of growing relevance: *Diversity and Equity*, *Socio-Emotional Learning*, and *Educational Use of Technology*. Issues related to diversity and equity are highly relevant across educational levels. Ensuring children's holistic development, which includes their social and emotional development, is a long-standing focus of ECEC; hence, it remains relevant for the second cycle (Schäfer, 2019[2]). In addition, there is growing interest in supporting students' social and emotional development at later educational stages, acknowledging how older learners could also benefit from the integrated education and care approach used in ECEC. There is also increased interest in fostering competent ECEC systems that can respond rapidly and effectively to changing circumstances at a local, national, or international level. Finally, there is an emerging need to improve our understanding of the role of digital technology in ECEC provision and how it can be used for various aspects of ECEC staff's work. Common policy issues addressed by both TALIS 2024 and TALIS Starting Strong 2024 are outlined in Table 2.1 below.

Further alignment is made at the level of survey governance and implementation. For example, countries are encouraged to have one national survey centre for both projects. In addition, a number of experts sit in the respective Questionnaire Expert Groups (QEGs) of both TALIS 2024 and TALIS Starting Strong 2024. The two studies also share one Technical Advisory Group (TAG).

Table 2.1. Policy issues in TALIS Starting Strong 2024 and TALIS 2024

TALIS Starting Strong 2024 (ISCED 02 and settings for children under age 3)	TALIS 2024 (ISCED 1, 2 and 3)
1. Ensuring quality and equity in development, well-being, and learning environments for all children	1. Quality teachers and teaching
	5. School policies and effectiveness
2. Motivating, developing and retaining staff in the profession	2. Attracting teachers to the profession
	4. Retaining teachers in the profession
	3. Developing teachers within the profession

Insights from TALIS Starting Strong 2018

Findings from TALIS Starting Strong 2018 are reported in three main OECD publications: (i) 'Providing Quality Early Childhood Education and Care' (OECD, 2019c[3]); (ii) 'Building a High-Quality Early Childhood Education and Care Workforce' (OECD, 2020b[4]); and 'Quality Early Childhood Education and Care for Children Under Age 3' (OECD, 2020f[5]). Key findings are summarised below.

Regarding results related to staff beliefs about skills and abilities that will prepare children for life in the future, TALIS Starting Strong 2018 found that ECEC staff considered helping children develop the capacity to cooperate with others to be their highest priority. This priority is followed by supporting the development of children's oral language and enquiry skills, then the ability to think creatively.

Regarding staff initial preparation and continuous professional development, TALIS Starting Strong 2018 found that a majority of staff in participating countries had received pre-service training with a focus on working with children. In addition, it reported that a majority of staff in all countries had participated in continuing professional development activities in the 12 months preceding the survey.

In addition, TALIS Starting Strong 2018 observed that the breadth and depth of in-service training matters. In all countries, staff who received pre-service and in-service training that covered a wider range of content areas reported adapting their practices to children's needs – that is, compared to staff whose training covered less content. Survey findings also showed how more training in a given area is associated with an increase in staff's sense of self-efficacy to support children's development. Results

also indicated that, in ECEC settings that serve more diverse groups of children, there is a larger proportion of staff who received training on how to work with children from diverse backgrounds.

Broadly speaking, ECEC staff surveyed for TALIS Starting Strong 2018 reported having high levels of job satisfaction. However, both ECEC staff and leaders expressed mixed views regarding their working conditions, with many indicating a low level of satisfaction with their salaries. It was also found that staff working in more challenging settings were not systematically afforded better working conditions.

ECEC staff reported the following as being their main sources of stress: (a) lack of resources; (b) having too many children in the classroom or playroom; (c) having too much work related to documenting children's development; and (d) having too much administrative work. In addition, staff across all countries reported feeling more valued by the children they serve and their parents or guardians than by society. Staff across all participating countries also agreed that reducing group size, improving staff salaries, and receiving support to help them serve children with special needs should be important spending priorities. However, the results of TALIS Starting Strong 2018 indicated that monitoring activities were more likely to focus on assessing facilities and setting finances than on the quality of staff-child interactions.

The reports also explored leadership and management in ECEC settings. They found pedagogical leadership to be positively associated with staff attitudes and practices, which were in turn linked to quality of ECEC provision. Furthermore, staff who perceived their leaders as employing a more distributed form of leadership tended to engage more frequently in collaborative practices and reported higher levels of job satisfaction.

In all participating countries, ECEC leaders reported that they often communicated with parents or guardians through both formal and informal channels While staff communication with parents was found to be common, fewer staff reported encouraging parents to play and conduct learning activities with their children at home. ECEC setting collocation with primary schools was found, in several countries, to be associated with greater frequency of communication with primary school staff. Collocated ECEC settings also tended to more frequently conduct activities targeted at parents or guardians to facilitate children's transitions across educational levels.

Given these findings, staff-child interactions, initial training and continuous professional development of ECEC staff and leaders, working conditions, leadership, and stakeholder relations in ECEC settings continue to be areas of interest for TALIS Starting Strong 2024. All of these themes are relevant to the areas of growing priority identified for the second cycle (see Section 2).

The second cycle of TALIS Starting Strong presents an opportunity to refine the data obtained through the survey instrument. The 2018 cycle of TALIS Starting Strong revealed that the methods used to capture information on the quality of staff-child interactions (or process quality) could still be improved to facilitate data analysis and interpretation. Hence, developing TALIS Starting Strong 2024 involved exploring alternative ways to capture this information.

Moreover, TALIS Starting Strong 2018 asked staff to think about a specific 'target group' to encourage respondents to think concretely when answering certain questions about their work with children. While the concept of a 'target group' is difficult to align across countries and settings, it is a useful way to prompt ECEC staff to think about their practices in a specific context. Thus, TALIS Starting Strong 2024 retains this notion of a 'target group', although the definition was slightly revised in an effort to make the construct more relevant across diverse ECEC systems.

Diversity, equity, and inclusion in ECEC settings was identified as an area of growing priority for TALIS Starting Strong 2024. Therefore, it was important for the questionnaires to capture the degree of diversity of children attending ECEC settings across all participating countries and jurisdictions. Strategies to improve capturing information on this included revisiting the response options and definitions on the

percentage of children from different backgrounds – for instance, 'socio-economically disadvantaged homes' or 'refugees' – to increase the granularity of the data collected.

Staff diversity was also important to capture. This includes the amount of ethnic and linguistic diversity of staff in ECEC settings, and the extent to which the background of staff matches that of the child group. Staff training on adopting inclusive practices to ensure that all children can participate fully in their learning experiences is another core dimension of the 'diversity, equity, and inclusion' content area.

Other areas of growing priority that are covered by TALIS Starting Strong 2024 include but are not limited to: (a) ECEC staff's preference for part-time work; (b) reasons for joining the profession; (c) perceived usefulness of continuous professional development; (d) staff sense of self-efficacy; (e) staff development needs regarding the use of digital technologies; and (f) resources available to ECEC settings.

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Notes

[1] This section draws heavily on the TALIS Starting Strong 2018 Conceptual Framework (Sim et al., 2019[6]).

3 The focus of TALIS Starting Strong 2024

To define the focus of TALIS Starting Strong 2024, consultations with the OECD ECEC Network and the ECEC QEG were undertaken following a targeted literature review that was used to inform the scope of TALIS Starting Strong 2024. The literature review and subsequent consultations concluded that the policy issues and content areas defined for TALIS Starting Strong 2018 remain broadly valid for TALIS Starting Strong 2024. In addition, four areas of growing priority, which had been discussed in Section I, were identified for TALIS Starting Strong 2024.

Prioritisation of content areas for TALIS Starting Strong 2024

In the first cycle, a priority rating exercise and a consultation process helped to identify content areas that would inform the main policy issues. The TALIS Starting Strong 2018 Conceptual Framework (Sim et al., 2019[1]) presents a detailed account of this process. The second cycle continues to explore the 12 content areas addressed by TALIS Starting Strong 2018, albeit with updated labelling. The labelling was updated for precision and conciseness, as well as to better reflect the focus of TALIS Starting Strong 2024. Table 3.1 presents the themes addressed in 2024 and their corresponding labels from 2018.

Table 3.1. Content areas addressed in TALIS Starting Strong 2024 and 2018

2024 content areas	2018 content areas
Process quality	Process quality of staff-child interaction
Monitoring children's development, well-being and learning	Monitoring children's development, well-being and learning
Professional beliefs about children's development, well-being and learning	Professional beliefs about children's development, well-being and learning
Self-efficacy	Self-efficacy
Staff and leader demographic and education background	Background and initial preparation
Professional development	Professional development
Well-being	Well-being
Structural quality	Structural quality characteristics
Pedagogical and administrative leadership	Pedagogical and administrative leadership
Organisational climate and working conditions	Climate
Stakeholder relations	Stakeholder relations
Diversity, equity, and inclusion in ECEC settings	Equity and diversity in the child group
Approaches to comprehensive/continuous child supports	
Fostering competent ECEC settings	
Digital technologies to support leaders and staff	

To bolster the relevance of TALIS Starting Strong 2024, the TALIS 2024 International Consortium[1] conducted a targeted literature review that included evidence published after 2018. This literature review sought to update the survey's theoretical underpinnings using the most current evidence. In addition, this review identified trends and new developments that could guide the direction of subsequent TALIS Starting Strong cycles.

The identified topics correspond with the content areas established for TALIS Starting Strong 2018. As mentioned in Section I, these areas include issues related: (a) diversity, equity, and inclusion in ECEC settings; (b) approaches to comprehensive/continuous child supports; (c) ways of fostering competent ECEC settings; and (d) the role of digital technologies in supporting leaders and staff. However, while the content areas of the 2018 and 2024 cycle align, the 2024 cycle iterates on the 2018 cycle by shifting the focus and/or formulation of existing survey items, as well as by introducing new questions or items while minimising respondent burden as much as possible. These new cross-cutting content areas are described in detail in Section III.

In January 2021, the initial results from the targeted literature review were presented and discussed during separate consultations with the ECEC QEG and the OECD ECEC Network. Feedback from these consultations was used to refine how priority areas are framed in the survey. For instance, countries voiced interest in exploring the use of digital technology in ECEC. In doing so, they stressed their interest in understanding how digital technology is used by staff to facilitate their own learning and practice, rather than how staff use digital tools in their interactions with children.

Following the iterations and refinements described above, the areas of growing priority were discussed and approved at the 27th OECD ECEC Network meeting. The previously described consultations established how the policy issues and content areas covered by TALIS Starting Strong 2018 remain relevant for the 2024 cycle. It was also agreed that the areas of growing priority identified through this consultation process should be explored in TALIS Starting Strong 2024.

Participating countries and economies, as well as the OECD ECEC Network, were asked to rank the identified areas of growing priority in order of importance, through a priority rating exercise conducted in May 2021. They were also asked to identify questions from TALIS Starting Strong 2018 that should be retained to enable trend analyses in the second cycle. This prioritisation exercise was open to all members of the ECEC Network, as well as to all confirmed participants in the second cycle. Participation in this exercise was voluntary.

It should be noted that there was significant variation in the way in which countries ranked the areas of growing priority. The resulting prioritisation aligned more closely with the priorities of some countries over others. Moreover, not all countries implementing TALIS Starting Strong 2024 participated in this prioritisation exercise.

Seventeen stakeholders (including countries, jurisdictions, and a civil society organisation)[2] provided input on the areas of growing priority. While views differed, diversity, equity, and inclusion was judged to be the most important. This was followed by approaches to comprehensive and continuous child supports, then by fostering competent ECEC systems, and finally, by the use of digital technologies to support ECEC staff and leaders.

Eighteen stakeholders[3] rated the staff and leader survey questions, indicating: (a) whether a question was of high priority and (b) if a question should be kept the same, kept with modifications, kept but considered low-priority, or dropped. The group decided that over 70% and 80% of the questions in the staff and leader questionnaire, respectively, should be kept but with modifications. Around 15% of the questions from both the staff and leader questionnaires were considered high-priority. Very few questions from both the staff and leader questionnaires were judged appropriate to drop or to be of low priority.

These results indicate participating countries and jurisdictions' continued interest in exploring the same content areas as the 2018 cycle while also refining survey questions, in the interest of improving data quality and ensuring that the identified areas of growing priority are covered.

Differences within ECEC

The above issues are broadly relevant across the two populations of interest for TALIS Starting Strong: ECEC staff and leaders working with children under the age of three, and those working in pre-primary education. TALIS Starting Strong explores the same policy questions and content areas at both levels.

However, there may be differences between settings serving either population, especially in countries or jurisdictions where ECEC for the said age groups is delivered separately. These differences were considered throughout survey development. For instance, the initial preparation and professional development received by ECEC staff serving either age group, as well as the practices they use; staff serving younger children might place a stronger emphasis on the care dimension of ECEC. In addition, organisational structures may also differ between ECEC settings serving either age group, hence requiring different approaches to leadership or stakeholder relations.

The complexities of ECEC systems are highlighted by the classification of ECEC settings in the International Standard Classification of Education (ISCED). ISCED is an instrument for compiling international education statistics, with ECEC classified as ISCED level 0. Within ISCED level 0, programmes are often further differentiated by age: early childhood educational development serving children under the age of three is categorised as ISCED level 01, and pre-primary education serving children from age three to primary school age is categorised as ISCED level 02. Pre-primary settings in TALIS Starting Strong meet the definition for ISCED level 02, whereas settings serving children under the age of three are not required to meet the formal definition for ISCED level 01.

These variations were considered when designing TALIS Starting Strong 2018, and they remain important for TALIS Starting Strong 2024. TALIS Starting Strong 2024 continues to use tailored response options to account for variations between staff working with children under the age of three, compared to those working with older pre-primary children.

Generating evidence specific to ECEC settings serving children under the age of three continues to be relevant, especially since this age group remains understudied (Cadima et al., 2020[2]). However, while pertinent evidence remains limited, the available literature indicates that, despite a sharp increase in access to ECEC in OECD countries, enrolment for children under the age of three remains low in many countries (OECD, 2018a[3]; Schleicher, 2019[4]).

As such, there is a need to obtain more fine-grained information about aspects of process quality – specifically for younger children – as well as information about the beliefs, practices, professional supports, and experiences of ECEC staff working with younger children. Some of these aspects are suitable for measurement in TALIS Starting Strong (Cadima et al., 2020[2]). This information can also provide valuable insight into the extent to which these processes may vary across younger children of diverse backgrounds. Thus, TALIS Starting Strong can generate insight regarding equity in ECEC provision – between and within countries – for children under the age of three.

It is also important to note that ECEC is delivered across diverse institutional configurations. ECEC settings cover a wide range of arrangements, ranging from centre-based (i.e., located within rooms specifically dedicated to ECEC, either in a standalone building or within a school) to home-based (i.e., within rooms in homes of the corresponding ECEC staff; OECD (2019e[5])). Settings also vary in the size of their staffing complement and in the way roles and responsibilities are distributed across ECEC setting staff. For instance, some countries have ECEC settings staffed by only one person caring for a small

number of children, as well as settings where ECEC staff members simultaneously perform leadership responsibilities and work directly with children.

To account for these different institutional configurations, the second cycle includes combined questionnaires which incorporate questions from both the staff and leader questionnaires. The combined questionnaire appears in two versions: one version is aimed at (i) very small centres with only one staff member or home-based settings while the other is aimed at (ii) centres whose leaders also perform staff duties.

Overview of conceptual mapping of content areas and their relationships

A conceptual model was developed as part of the first cycle of TALIS Starting Strong to describe the ECEC system, staff, and leader characteristics, as well as the quality of ECEC development, well-being, and learning environments (Sim et al., 2019[1]). This model laid out the survey's theoretical underpinnings and is described in detail in the TALIS Starting Strong 2018 Conceptual Framework.

TALIS Starting Strong 2024 continues to be grounded on the 2018 conceptual model but updates it to reflect the centrality of staff and leaders as the survey respondents. It also continues to capture various aspects of ECEC provision that are considered relevant and influential to children's development, well-being, and learning.

Drawing on Bronfenbrenner's (1979[6]) ecological systems framework, the updated conceptual mapping for TALIS Starting Strong 2024 seeks to showcase that children's development, well-being and learning, while at the centre of ECEC provision, are interrelated and influenced by the wider environment in which children operate. The updated mapping also reflects international conceptualisations of quality ECEC, such as the structure-process model of quality (Kluczniok and Roßbach, 2014[7]); which conceives quality ECEC as being made up of four interrelated components: structural characteristics, educational beliefs, educational processes, and networking with families. The conceptual mapping for TALIS Starting Strong 2024 is illustrated in Figure 3.1. To account for the structural and organisational heterogeneity of ECEC provision in participating countries and jurisdictions, the TALIS Starting Strong 2024 conceptual mapping, like the 2018 conceptual model, is conceived broadly and comprehensively – reflecting all main spheres of the ECEC ecosystem.

Figure 3.1. TALIS Starting Strong 2024 conceptual mapping of ECEC environment for children's development, well-being, and learning (D, WB & L)

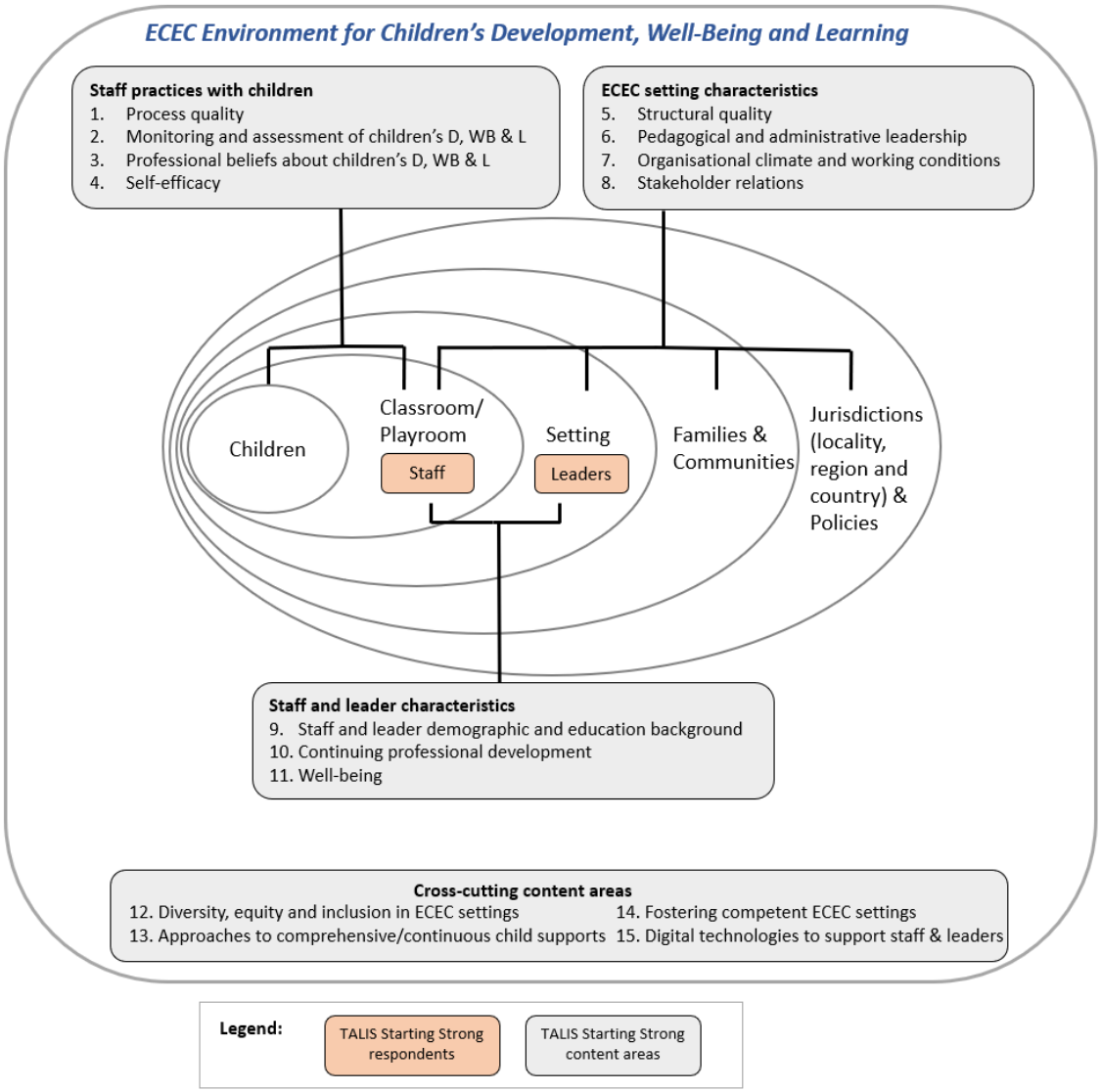


Figure 3.1 above shows that children are situated in the classroom or playroom, where they interact with staff and peers; the nature of those interactions are influenced by the characteristics, knowledge, and beliefs of staff and their pedagogical approach. These staff-child and child-child interactions are situated within the larger ECEC setting, where leaders influence the institutional setting, including goals, resources, management practices, and working conditions. Staff and leaders interact with each other, and, as such, leaders can influence staff practices and child experiences in the classroom or playroom and setting through leadership approaches and decisions. In turn, ECEC settings are themselves located in a broader community, where other stakeholders – such as children's families, other educational institutions, and other service providers – may interact with children, setting leaders, and staff. Such stakeholders can range from the families of the participating children, whose role is central in providing safe and nurturing interactions during infancy and early childhood which will positively affect development and well-being, to other educational institutions, and other service providers.

Subsequently, the community environment and settings are influenced by the wider ECEC policy at local, regional and national levels.

The survey supports the collection of information at the classroom or playroom level and at the ECEC setting level, as reported by ECEC staff and leaders. While children are at the centre of this model – given how ECEC systems' ultimate objective is to support children and their families – the experiences and practices of ECEC setting staff and leaders are equally important.

The survey's content areas are organised into four dimensions: (1) staff practices with children (specifically elements related to process quality); (2) ECEC setting characteristics; (3) staff and leader characteristics; and (4) cross-cutting content areas that are linked to the three other dimensions and that apply across the various levels of the ECEC ecosystem. The conceptual mapping in Figure 3.1 illustrates where the four dimensions are situated within the ECEC ecosystem.

Staff practices with children are captured by indicators pertaining to: (a) process quality; (b) approaches to monitoring and assessment; (c) professional beliefs about children's development, well-being, and learning; and (d) self-efficacy. The second dimension, ECEC setting characteristics, is constituted by indicators relating to: (a) the structural quality of the environment; (b) pedagogical and administrative leadership of the ECEC setting; (c) organisational climate and working conditions; and (d) stakeholder relations. Staff and leader characteristics represent the third dimension, which pertain to staff and leaders': (a) demographic background; (b) formal, initial preparation for working with young children; (c) continuing professional development; and (d) well-being. Finally, as discussed in Section I, the cross-cutting content areas concern: (a) diversity, equity and inclusion in ECEC settings; (b) approaches to comprehensive and continuous supports for children; (c) competent ECEC systems; and (d) use of digital technology to support ECEC staff and leaders.

It is assumed that the factors subsumed within the four dimensions influence each other. However, Figure 3.1 does not show paths of influence, partly because the conceptual mapping intends to represent broad content areas rather than defined indicators, and partly to account for the large number of potential interrelationships across content areas. In addition, the relationships between content areas (or their corresponding indicators) could be unidirectional or bidirectional.

Finally, while TALIS Starting Strong 2024 can provide valuable information about associations between dimensions and indicators, the survey data does not seek to make causal inferences about those associations. The main goal of TALIS Starting Strong 2024 is thus for each factor across the different dimensions to contribute to the knowledge base regarding the main policy issues guiding the survey, namely: (i) ensuring quality and equity in development, well-being, and learning environments for all children (Policy Issue 1); and (ii) motivating, developing, and retaining staff in the profession (Policy Issue 2). These factors are discussed in more detail in the respective thematic sub-sections in Section III. These sub-sections also outline how the content areas interrelate with each other.

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Notes

[1] The TALIS 2024 International Consortium is led by the International Association for the Evaluation of Educational Achievement (IEA), with its premises in Amsterdam, the Netherlands, and Hamburg, Germany. IEA is responsible for implementing the survey at the international level on behalf of the OECD Secretariat. The key partner for developing the Conceptual Framework and pilot instruments for TALIS Starting Strong is RAND Europe, based in Cambridge, the United Kingdom. Other members of the International Consortium include the Australian Council for Educational Research (ACER) based in Melbourne, Australia, and cApStAn Linguistic Quality Control based in Brussels, Belgium.

[2] Australia; Belgium (FL) (ISCED level 02); Belgium (FL) (ISCED level 01); Chile; Colombia; Denmark; Finland; Germany; Ireland; Israel; Japan; New Zealand; Norway; Spain; Sweden; Morocco; and the Trade Union Advisory Council (TUAC).

[3] The same stakeholders that provided input on to the areas of growing priority provided input on the questionnaires with the addition of Türkiye for the latter. The countries that provided input on the questionnaire priority rating exercise were: Australia; Belgium (FL) (ISCED level 02); Belgium (FL) (ISCED level 01); Chile; Colombia; Denmark; Finland; Germany; Ireland; Israel; Japan; New Zealand; Norway; Spain; Sweden; Türkiye; Morocco; and TUAC.

4 A closer look at content areas for TALIS Starting Strong 2024

This section provides an overview of research related to each of the TALIS Starting Strong 2024 content areas. The description of each content area is accompanied by a definition, a short review of related literature, a list of relevant indicators based on research, and a discussion of the extent to which the content area can be suitably explored by TALIS Starting Strong.

Staff practices with children

The *Staff Practices with Children* dimension is comprised of four content areas that closely relate to the ways staff deliver pedagogy and support to children; these undergird the quality of ECEC provision. These four content areas are: (i) process quality that focuses on staff-child interactions; (ii) monitoring and assessment of children's development, well-being, and learning; (iii) beliefs about children's development, well-being, and learning; and (iv) self-efficacy.

Process quality

As discussed in the previous section, early childhood experts generally conceptualise the quality of ECEC settings as having two main dimensions: process quality and structural quality. This sub-section focuses on process quality; structural quality is discussed in a later sub-section.

In the ECEC context, process quality usually refers to children's daily experiences in the ECEC setting that may foster their development, well-being, and learning. These include the nature of children's interactions with adults and with other children, with the physical environment and learning materials, with their families, and with the larger community [see, for example: Burchinal (2018[1]), Hamre (2014[2]), Layzer and Goodson (2006[3]), Mashburn et al. (2008[4]), OECD (2021[5]), Pianta et al (2005[6])]. In the ECEC setting, these processes may refer to positive and nurturing relationships with staff, classroom routines or pedagogical practices employed by staff such as scaffolding, posing questions and modelling.

For the purposes of TALIS Starting Strong, process quality is primarily focused on the quality of staff-child interactions and, more specifically, on the pedagogical practices of ECEC staff. This conceptualisation aligns with how process quality is most commonly operationalised in the literature (McNally and Slutsky, 2020[7]; Pianta and Hofkens, 2023[8]; Hofkens, Pianta and Hamre, 2023[9]; OECD, 2018b[10]). However, even with this more specific conceptualisation, pedagogical practices comprise a wide range of activities and approaches, including but not limited to domain-specific instructional practices, learning through play, classroom or playroom management, and emotional support provided to children within the classroom or playroom environment. Hence, excellent process quality is conceptualised in TALIS Starting Strong as a repertoire of practices, rather than being typified by any one pedagogical practice.

TALIS Starting Strong also recognises the influence of the quality of interactions between different stakeholders in the ECEC setting – for example, interactions between children, between ECEC staff, between children and ECEC staff, between children and parents, and between staff and parents – on children's development, well-being, and learning. As such, the survey also aims to capture select information on the nature of these inter-stakeholder interactions. Staff-parent interactions are particularly addressed in the *Stakeholder Relations* content area.

In research that aims to measure process quality, trained assessors typically observe staff-child interactions in their natural classroom or playroom settings and rate staff practices using well-validated tools and rubrics [for example: the Environment Rating Scales developed by Harms et al. (2014[11]), Harms et al. (2017[12]), and the Classroom Assessment Scoring System, or CLASS, developed by Pianta et al. (2008[13])]. Other observation-based tools have been developed to measure the nature of child-child interactions as well. The development of observational assessment tools remains an active area of research, with research efforts aiming to address persistent issues of validity and inter-rater reliability and to develop tools that can be used across diverse settings, within and across countries (Pianta, Hamre and Nguyen, 2020[14]; Raikes, Davis and Burton, 2019[15]; Sokolovic et al., 2021[16]; UNESCO et al., 2017[17]).

The proceeding text appraises the literature that has shaped understandings of how process quality influences children's development, well-being, and learning. Afterwards, it discusses options for capturing data regarding process quality in TALIS Starting Strong 2024.

Theoretical and empirical background

Cognition, including higher-order cognitive processes like self-regulation, undergoes markedly rapid development during early childhood (Montroy et al., 2016[18]; Asmussen et al., 2018[19]). At the same time, young children's growing regulatory capacity and motivational systems are inextricably linked to their socio-emotional development (National Scientific Council on the Developing Child, 2015[20]). This early socio-emotional development is defined by the Collaborative for Academic, Social and Emotional Learning (CASEL) as being constituted by five core social and emotional competencies: self-awareness, self-management, responsible decision-making, relationship skills, and social awareness (CASEL, 2020[21]).

The TALIS Starting Strong 2018 Conceptual Framework (Sim et al., 2019[22]) included a discussion of the extensive body of research on the conceptualisation and measurement of process quality. According to the literature, effective pedagogical practices can include interactions that help develop general higher-order cognitive skills and interactions that promote domain-specific learning (OECD, 2015b[23]; Sylva et al., 2004a[24]; UNESCO, 2013[25]; Vegas et al., 2013[26]; Yoshikawa et al., 2013[27]). In addition, high-quality staff-child interactions are characterised by sensitive and consistent emotional responses from ECEC staff. These positive staff-child interactions have been found to be associated with the development of pro-social behaviour (Johnson et al., 2013[28]) and self-regulation (Williford et al., 2013[29]) in children.

A range of pedagogical practices have been identified as contributing to process quality. One example is scaffolding: the process by which adults (parents or educators) adjust their interaction with a child to ensure that the support they provide is developmentally appropriate (Cazden, 1983[30]; Dorn, 1996[31]; Sawyer, 2006[32]). Scaffolding – when integrated with play and embedded in a developmentally appropriate curriculum – is a key element of process quality that facilitates the development of children's linguistic, numerical, and social skills, among others (Ciolan, 2013[33]; Moser et al., 2017[34]).

Incorporating children's perspectives to inform staff practice and to encourage child-to-child interactions is another practice that is characteristic of good process quality (Church and Bateman, 2019[35]; Næsby, 2019[36]; Vandenbroeck, 2020[37]). It has been found that actively engaging children to make choices about their own learning can boost their creativity and their enjoyment of ECEC (Cronin, 2016[38]).

Indeed, there is no single practice that constitutes excellent process quality. Regardless of the ECEC context (that is, whole group, small group, free play, outdoor time, and routines), research underlines the need for ECEC staff to draw on a repertoire of effective strategies, examples of which are discussed in the text that follows.

The skill of adapting activities to the content, type of learning experience, and individual child, as informed by a clear learning target, is called intentional teaching (Epstein, 2007[39]; NAEYC/NAECS-SDE, 2003[40]). Intentional teaching (or intentional pedagogy) has come to be seen as increasingly important in ECEC provision since it involves deliberate and purposeful decisions on the part of the practitioner, drawing not only on their professional expertise and pedagogical skills but also on their understanding of the individual needs of the children in their group. This level of information synthesis then allows practitioners to create meaningful and appropriate experiences for children in support of learning and well-being (McLaughlin, Aspden and Snyder, 2016[41]; Siraj-Blatchford, 2014[42]). Intentional teaching is linked to what is often referred to in later stages of education as 'differentiated instruction' – that is, teachers' deliberate adaptation of materials, activities, and assessments to meet students' learning needs and interests (Smale-Jacobse et al., 2019[43]). Both intentional teaching and differentiated instruction are underpinned by the assumption that learners can achieve higher levels of engagement when, rather than taking a one-size-fits-all approach, practitioners design learning processes that account for children's individual backgrounds, interests, and readiness levels (Tomlinson, 2017[44]).

Literature often draws a distinction between child-centred instruction (characterised by child-initiated activities, children's engagement in problem solving, and inquiry-oriented learning) and didactic instruction (characterised by staff-directed activities and planned tasks focused on acquiring and practicing academic skills). Both approaches can boost academic skills, but there is some evidence that child-centred instruction may be more effective (Huffman and Speer, 2000[45]). The consensus view can be characterised as social-constructivist, which stresses the importance of children's intrinsically motivated activity and initiative as the driver of development (McMullen et al., 2005[46]; Pramling-Samuelsson and Fleer, 2009[47]).

It is important to note, however, how different cultures may perceive the value of more didactic approaches (such as whole-group teaching), as opposed to more constructivist and personalised methodologies (such as child-initiated play) – with the latter perceived as being more closely aligned with cultural values typically characterised as 'Western' (e.g., individualism) (Hu et al., 2015[48]). Moreover, it should be stressed that child-centred and didactic instruction are not mutually exclusive and can both be integrated in the delivery of ECEC.

Indeed, the role of ECEC staff is not limited to creating conditions to facilitate self-propelled development. ECEC staff are also responsible for developing children's skills and experiences in various competence areas such as language, literacy, numeracy, social skills, and emotional development. In doing so, ECEC staff should respect developmental and motivational principles – allowing children, where appropriate, to take initiative and to determine their own learning pathways through the curriculum, using constructivist, symbolic pretend play and small-group, collaborative work as the main vehicles to stimulate development. This approach characterises "developmentally appropriate practice", as coined by Bredekamp (1987[49]).

Evidence indicates that ECEC curricula designed according to the pedagogical principles of developmentally appropriate practice may be especially important for the development of children's cognitive control, self-regulation, and creativity (Diamond and Lee, 2011[50]; McClelland, Acock and Morrison, 2006[51]). The development of cognitive control and emotional self-regulation in early childhood has been found to be promoted by peer interaction in pretend play (Berk, Mann and Ogan, 2006[52]; Bodrova, 2008[53]). Emotional self-regulation skills also appear to be enhanced through socio-dramatic

play, with children taking up roles that require imagining others' state of mind (Elias and Berk, 2002[54]; Slot et al., 2017[55]).

Major advances in cognitive ability that typically occur in early childhood are also known to lay the foundations for further learning in other competence areas, such as literacy or numeracy (Hohm et al., 2007[56]; Lonigan, Burgess and Anthony, 2000[57]). Indeed, a growing body of correlational research suggests that the development of executive functioning skills during the early years, such as children's capacity to manipulate items in their working memory, are positively associated with mathematics attainment in early childhood education [see, for example: Lan et al. (2011[58]) and McClelland et al. (2014[59])].

For children under the age of three, research also points to the importance of predictable play-based activities and routine care that is provided within a balanced curriculum (Johnson et al., 2019[60]). This also involves the use of narrative and storybook reading and informal conversations – both in the context of staff-child and child-to-child interactions. While there is evidence on how specific pedagogical strategies can be best combined with sensitive, responsive, and warm interactions and relationships to promote a young child's holistic development (Downer, Sabol and Hamre, 2010[61]), evidence specific to ECEC provision for children under the age of three is more limited compared to evidence regarding children of pre-primary age.

Another aspect of process quality that reflects the nature of staff-child interactions is classroom or playroom climate, which is also known as emotional climate. Classroom or playroom climate (Howes, 2000[62]; Raver, 2004[63]; Raver, Garner and Smith-Donald, 2007[64]) refers to the nature of staff–child relationships and the extent to which these may be characterised by warmth and responsiveness, as opposed to anger and harshness (Li Grining et al., 2010[65]). ECEC staff's levels of job satisfaction, well-being, stress, and burnout, together with the larger ECEC setting's organisational climate, may be correlated with the classroom or playroom climate (Cumming, 2017[66]).

Research has demonstrated that a negative classroom or playroom climate tends to adversely affect children's social outcomes (Howes, 2000[62]; Howes et al., 2011[67]; Hughes and Kwok, 2007[68]; NICHD Early Child Care Research Network, 2003[69]; Ponitz et al., 2009[70]). In contrast, a cross-country study by Wysłowska and Slot (2020[71]) found that, in conjunction with a broad range of stimulating and developmentally appropriate activities, a positive and warm classroom or playroom climate was beneficial for toddlers' development and learning.

In sum, while there is no single conceptualisation of process quality, there are areas of growing consensus: for example, the use of a child-centred and developmentally appropriate approach (McMullen et al., 2005[46]; Pramling-Samuelsson and Fleer, 2009[47]), the use of intentional teaching (McLaughlin, Aspden and Snyder, 2016[41]; Siraj-Blatchford, 2014[42]) or the focus on positive emotional climate (Howes, 2000[62]; Howes et al., 2011[67]; Hughes and Kwok, 2007[68]; NICHD Early Child Care Research Network, 2003[69]; Ponitz et al., 2009[70]). More broadly, the literature on process quality points to a range of appropriate practices that, together, can provide a positive classroom/playroom climate and ensure a child-centred, developmentally appropriate approach to children's development, well-being, and learning.

It is important to note, however, that since process quality is typically conceptualised as a classroom/playroom-level variable, it is likely to be influenced by factors situated in other spheres of the ECEC ecosystem, such as structural quality characteristics and ECEC staff and leader characteristics. For instance, high-quality interactions may have greater impact on children when staff-child ratios are low, since this provides opportunities for more frequent and sustained interactions (Pianta et al., 2009[72]).

There is a strong theoretical basis for expecting that process quality is a key driver of children's development, well-being and learning—accompanied by emerging evidence of a predictive relationship

(Anderson and & Phillips, 2017[73]; Hong et al., 2019[74]; Ulferts, Wolf and Anders, 2019[75]). However, rigorous experimental and quasi-experimental studies regarding process quality remain sparse (Sim et al., 2019[22]). Many studies that relate measures of process quality to child outcomes—including those cited throughout this discussion—are correlational in design. Where evidence is available, the results have been mixed (Sim et al., 2019[22]).

For instance, a review by Burchinal (2018[1]) found that children who experienced higher process quality also scored higher on a range of cognitive and socioemotional outcomes. In addition, recent evidence suggests there may be a cumulative effect of process quality, with sustained year-on-year exposure to high-quality environments having a positive impact on literacy and mathematics outcomes (Carr et al., 2019[76]). Meta-analytical, longitudinal, and secondary analyses of multiple data points also demonstrate a predictive, and possibly lasting, relationship between process quality and learning outcomes (Burchinal, Kainz and Cai, 2011[77]; Keys et al., 2013[78]; Hong et al., 2019[74]; Ulferts, Wolf and Anders, 2019[75]). However, it must be noted that the standardised effect size in these studies is low (where significant, ranging between.05 to.1013 for both cognitive and social-emotional outcomes). In addition, findings and measures of process quality are not consistent across samples (Keys et al., 2013[78]; Hong et al., 2019[74]).

Small but positive associations between some, but not all, aspects of process quality and child outcomes have been found by studies conducted in China (Li et al., 2016[79]), Portugal (Abreu-Lima et al., 2013[80]), Chile (Leyva et al., 2015[81]), and Finland (Pakarinen et al., 2011[82]). In contrast, one large and representative US study did not find any associations between process quality and child outcomes (Burchinal, Zaslow and Tarullo, 2016[83]).

It must also be noted that a large majority of published evidence regarding process quality draws on studies conducted in Western development, well-being, and learning environments (Tobin, 2022[84]; Pianta and Hofkens, 2023[8]). The preponderance of evidence from Western ECEC settings may have led to a culturally biased understanding of what constitutes ‘good practice’ in ECEC instruction (Tobin, 2022[84]). In consequence, most instruments for measuring the quality of ECEC provision favour practices that are considered acceptable by Western standards (Ishimine and Tayler, 2014[85]). Moreover, prevalent understandings of ECEC quality also influence the pre-service training and continuous professional development received by ECEC staff across different countries; these, in turn, have an impact on staff-child interactions (Campbell-Bar and Bogatić, 2017[86]).

Nonetheless, Ishimine and Tayler (2014[85]) recognise that, while process quality instruments predominantly originate from Western ECEC settings, these instruments provide some room for culturally specific modifications. However, these instruments’ cross-cultural validity—especially when incorporating cultural modifications—is, to a large extent, psychometrically untested (Ishimine and Tayler, 2014[85]). This issue of cross-cultural validity is made more complex by the variability in how ECEC quality is understood, even when accounting only for Western education systems, where research is more readily available (Klinkhammer et al., 2017[87]; Tobin, 2022[84]).

The mixed findings and cultural caveats discussed above suggest that, while the available tools for measuring process quality—most of which are based on observational data—may, in some instances, be able to capture a predictive relationship, they are not sufficiently developed to robustly capture the aspects of process quality that matter most for children’s development, well-being, and learning (Pianta, Hamre and Nguyen, 2020[14]). Moreover, existing tools may not always take stock of cultural specificities. These issues underscore a need for new and improved tools to assess process quality.

Analytical potential and indicators

As a workforce survey, TALIS Starting Strong cannot assess the relationship between process quality and child development, well-being, and learning. Nonetheless, it can be used to explore the views and practices of ECEC setting staff and leaders regarding various dimensions of process quality, which are

in turn known to influence children's development, well-being, and learning outcomes. TALIS Starting Strong 2024 collects a variety of indicators across these dimensions to ensure a sufficiently wide range of items. This would allow for a holistic appraisal of process quality within the limits of a workforce survey. The relationship between these process quality indicators and various characteristics of the ECEC workforce and ECEC settings can also be explored.

Thus, one key focus for TALIS Starting Strong 2024 is collecting self-reported, proxy measures of process quality, as objectively as possible, from leaders and teachers, that allow within- and between-country comparisons. These comparisons may help explain variations in the reported quality of early development, well-being, and learning environments that children experience.

However, being a survey, TALIS Starting Strong 2024 only captures participants' responses to questions that are intended to capture aspects of process quality. While these responses should have the benefit of reflecting long-term patterns in beliefs and practices, responses are dependent on participant-level factors like their accuracy of recall and tendency to respond in a socially desirable manner, as well as cultural differences in response styles. These are important limitations of the survey's process quality measures.

As noted earlier, several strategies were employed in TALIS Starting Strong 2018 to obtain assessments of process quality, in an effort to minimise potential biases attributable to social desirability, culture, or other considerations. These approaches included: (a) collecting information on ECEC staff's beliefs regarding the importance of specific learning objectives; (b) asking ECEC staff respondents about practices used by their colleagues at their ECEC setting; (c) asking ECEC staff about how frequently they engage in specified practices with their target group; and (d) using situational judgement tasks.

TALIS Starting Strong 2024 builds on the strategies listed above and iterates on them, where necessary, based on issues encountered in the 2018 cycle. The following strategies continue to be used in TALIS Starting Strong 2024:

- Collecting information on the beliefs of ECEC staff respondents regarding the importance of specific learning objectives for children. This is based on research indicating an association between such beliefs and actual teaching practices (Pianta et al., 2005[6]; Sim et al., 2019[22]; Stipek et al., 2001[88]).
- Asking ECEC staff respondents about the frequency of using specific practices with a 'target group' of children (defined as the group of children they were worked with the most on the last working day before the survey date).
- Using concrete vignettes describing everyday situations that staff may encounter in ECEC provision (i.e., Situational Judgement Tasks items or SJTs), respondents indicate which of the actions listed as options they are likely to take.

TALIS Starting Strong 2024 no longer uses questions that ask respondents about the practices of 'ECEC staff at this ECEC centre', rather than the practices of respondents themselves. These questions are asked with respect to their frequency during the previous work week, to encourage staff to think concretely about their practices. By collecting data about the respondents' own practices rather than the practices in their setting, it will be possible to link individuals' practices with their background characteristics, such as level and content of education and training programmes.

Other strategies to improve the viability of self-reported data on process quality collected by TALIS Starting Strong 2024 include: (a) revisiting the response scale used in questions to obtain better response variability; (b) reconsidering the placement of process quality questions to make use of more concrete reference points (such as the target group or typical working week); and (c) reviewing items to ensure a comprehensive set of practices can be captured.

Despite these challenges and limitations, developing process quality indicators remains a goal for TALIS Starting Strong 2024. These process quality indicators allow for analysing and reporting on interactions that are known to influence children's development, well-being, and learning outcomes. Furthermore, over the course of developing the survey instruments through the pilot and field trial, particular attention was given to improving these items in terms of their validity and response burden.

Another key priority was to build upon the initial work on SJTs in the first cycle of the survey. This involved consultations with the ECEC QEG to develop SJTs that are both reliable and valid. To address the poor reliability and multidimensionality exhibited by the SJTs in TALIS Starting Strong 2018, a theory- or construct-based approach became the starting point for TALIS Starting Strong 2024.

Following the approach successfully adopted by Aldrup et al. (2020[89]), the CLASS framework was used as an initial theoretical basis for designing the SJTs in TALIS Starting Strong 2024. CLASS has been extensively validated as a framework and tool for capturing process quality with respect to ECEC provision for the relevant age groups (Pianta et al., 2008[13]). Furthermore, it is conceptually aligned with TALIS Starting Strong 2024, in that it also measures process quality through staff-child interactions.

Selecting SJTs for inclusion in the final instruments was based on the SJTs' psychometric performance in the TALIS Starting Strong 2024 Field Trial. Contextual and cultural sensitivities were also considered in this selection process, acknowledging that, while the conceptualisation of process quality in CLASS is widely used, what counts as 'best practice' may differ across TALIS Starting Strong countries.

TALIS Starting Strong 2024 differentiates between global and domain-specific process quality, as defined by Ulferts et al. (2019[75]). Global process quality captures general aspects of physical and emotional care and support, instruction, and cognitive stimulation experienced by children, which aim to support their global development, well-being, and learning. Domain-specific process quality pertains to care, support, instruction, and cognitive stimulation that targets development in specific learning areas, such as early literacy or numeracy. Often these processes will overlap, even if they are intended to serve different purposes by staff.

As with TALIS Starting Strong 2018, the 2024 cycle aims to capture indicators of process quality, or more specifically indicators of the quality of staff-child interaction, across two domains and eight sub-domains:

a) practices aimed at supporting children's *global* development, well-being, and learning:
    - Adapting practices to individual children's needs and interests
    - Supporting classroom/playgroup management
    - Supporting play and exploration
b) Practices aimed at facilitating *domain-specific* development:
    - Supporting language
    - Supporting early literacy
    - Supporting early numeracy
    - Supporting pro-social behaviour
    - Supporting emotional development and well-being

The identified domains do not represent the universe of all possible process quality domains, however, and the TALIS Starting Strong 2024 conceptualisation of process quality may differ from conceptualisations used in other studies.

Within content area analyses

As with TALIS Starting Strong 2018, there is a need to understand within- and between-country heterogeneity of pedagogical practices and play. Analyses of between-country heterogeneity will

continue to be conditional on measurement comparability. Detailed analyses of between-country differences in the way process quality is operationalised in the classroom/playroom will inform an understanding of indicators that are more universal across countries, and those that may be more culturally-relative.

Cross-content area analyses

Indicators related to the quality of staff-child interactions are also a main area of interest in TALIS Starting Strong 2024. Analyses within and between countries and jurisdictions can shed light on associations between process quality and: (a) structural quality indicators at setting and classroom/playroom level; (b) resources available to ECEC settings (e.g., funding and funding structures); (c) staff and leader characteristics, their professional development, and their professional beliefs; (d) staff and leader well-being; and (e) diversity, equity, and inclusion in ECEC settings.

Monitoring and assessment of children's development, well-being, and learning

Monitoring and assessment are closely related terms that refer to how early childhood professionals gain an understanding of children's development, well-being, and learning. However, while closely related, they are distinct processes. On one hand, monitoring tracks children's learning process and identifies areas where they need support to help them meet developmentally appropriate objectives. On the other hand, assessment aims to determine whether children reach specific learning and development objectives.

TALIS Starting Strong 2024 is particularly well-suited to capture information related to monitoring and assessment of children's development, well-being, and learning. The survey collects information on how staff use monitoring and assessment data for ECEC provision. In addition, it asks respondents whether monitoring and assessment data is shared across ECEC staff to discuss children's development, well-being, and learning needs. It also asks whether this information is shared with staff in subsequent educational levels to ensure smooth transitions of children across ECEC stages or onto primary education.

Given the wide range of monitoring and assessment methods that can exist in ECEC settings, it is important that staff have the knowledge and skills to use these methods correctly and appropriately. As such, TALIS Starting Strong 2024 captures information related to the training and professional development received by ECEC staff on monitoring and assessing children's development. In addition, the survey asks ECEC staff about their sense of self-efficacy when it comes to using monitoring and assessment tools.

Theoretical and empirical background

Research has shown that ECEC staff who know children's level of development demonstrate better pedagogical practices (Cadima et al., 2020[90]). Monitoring and assessing children's development, well-being, and learning can play an important role in improving staff practices and service provision, and thus enhance children's development (Litjens, 2013[91]). For instance, information regarding children's development in specific skill areas helps practitioners adjust their practices to children's individual needs (Barblett and Maloney, 2010[92]) and adapt curricula and standards to meet said needs (Litjens, 2013[91]). In fact, Yoshikawa et al. (2013[27]) argue that most successful curricula take stock of findings from the monitoring and assessment of children's progress.

There is also a need for developmentally appropriate methods and tools (Meisels and Atkins-Burnett, 2000[93]; Sattler, 1998[94]) that are designed to identify children's development needs, abilities, and skills, according to their age (Barnett, Ayers and Francis, 2014[95]; Waterman et al., 2012[96]). In addition,

monitoring and assessment methods for ECEC should be enjoyable, not stressful for children, and be grounded on children's interests (Copple and Bredekamp, 2009[97]; Meisels and Atkins-Burnett, 2000[93]).

Staff competence in using the results of monitoring and assessment for different purposes and in deploying a variety of developmentally appropriate monitoring and assessment tools is therefore critical (Iqbal, Saleem and Arshad, 2020[98]). Staff who have sufficient knowledge and skills to use assessment in ECEC settings are better at adapting their teaching to the specific developmental needs of the child (Iqbal, Saleem and Arshad, 2020[98]). Given this, training on monitoring and assessment becomes an important consideration.

TALIS Starting Strong 2018 results showed that approximately 90% of surveyed staff across participating countries received some training on monitoring and documenting children's development, well-being, and learning – be that during their pre-service training, in-service training, or both (OECD, 2020b[99]). Initial preparation and continuing professional development on monitoring and assessment can also shape staff views on this area. For instance, a study with an Israeli sample showed that even a basic assessment course changed teachers' conceptions about the role of assessment for improving learning and teaching (Levy-Vered and Alhija, 2018[100]).

Various developmental areas, learning objectives, and aspects of well-being can and should be included in monitoring or assessment, such as: language and literacy; numeracy and mathematics; science; digital literacy; socioemotional development; motor development; self-care and health; practical life skills; autonomy; creativity; and well-being, among others (Barblett and Maloney, 2010[92]; Raver, 2002[101]; Snow and van Hemel, 2008[102]). As a result, it becomes important to ensure developmentally appropriate monitoring and assessment practices that take a holistic approach – that is, practices that are not limited to measuring narrow cognitive domains - see also Barnett, Ayers, & Francis (2014[95]).

For the Starting Strong IV report (OECD, 2015b[23]), the OECD surveyed 21 countries or jurisdictions on the use of instruments for monitoring child development. The findings published in this report revealed that, while monitoring and assessing child development, well-being, and learning is a mostly internal process and is often linked to staff- and setting-level practices, external agencies can play a role in this process. In addition, national, regional, or local policies influence monitoring and assessment.

The OECD (2015b[23]) Starting Strong IV report categorises frequently used assessment tools into three categories:

1. Direct assessments, such as standardised assessments and screening instruments, which are intended to measure children's knowledge, skills, and aptitudes Approaches to comprehensive/continuous child supports;
2. Narrative assessments, such as storytelling and portfolios, which describe children's development through narratives or stories based on artefacts produced by the child
3. Observational methods, such as rating scales and checklists

Monitoring and assessment can either be formative or summative. Formative monitoring or assessment pertains to formal and informal procedures conducted by ECEC staff in their day-to-day work. This can take the form of observation, task-based activities, or unstructured interviews (Brodie, 2013[103]). On one hand, formative assessment informs adjustments made by ECEC staff to their instructional approach or to the environment to better support children's development, well-being, and learning. On the other hand, summative monitoring or assessment indicates the child's current level of development, well-being, and learning based on information gathered from a range of sources. In summative assessment, the child's progress is determined by comparing current levels of knowledge and ability against an established standard or benchmark.

However, while formative and summative assessment serve distinct purposes, they are not mutually exclusive and are in fact often used alongside each other. After all, researchers and practitioners

recommend assessment systems that use multiple, ongoing methods (NAEYC/NAECS-SDE, 2003[40]; Shepard, Kagan and Wurtz, 1998[104]).

Nevertheless, it is worth discussing emerging concerns about the risks of using summative assessments in an ECEC context. ECEC staff in many countries are concerned about the potential misuse of summative methods. For instance, misuse may lead to the 'schoolification' of ECEC pedagogy, where placing a 'score' on children's learning becomes the main priority, hence taking focus away from a child's holistic well-being and development (Alcock and Haggerty, 2013[105]; Lazzari and Vandenbroeck, 2013[106]). ECEC staff also expressed concern about using assessment to delay or deny school entry, since doing so risks a child being labelled as a 'failure' early in their school career; this could adversely affect a child's development.

Formative assessment can be deliberate and organised (Guddemi and Case, 2004[107]). A study in the United States measured practices and environments to promote children's development in literacy and language. This study found the following conditions to have a positive effect on the quality of ECEC practices: (a) when a curriculum-based child assessment tool is used; (b) when the development of portfolios is aligned with the federal programme for early learning; and (c) when child assessment information is integrated into instructional planning (Hallam et al., 2007[108]).

However, since formative evaluation is embedded in ongoing pedagogical activities, it is not typically identified as a separate instructional activity in the same way as summative assessment (for example, in the form of an end-of-term examination). ECEC staff have traditionally used formative assessment through informal methods, such as authentic, naturalistic observations, narrative and anecdotal records, and portfolios (Copple and Bredekamp, 2009[97]; Meisels and Atkins-Burnett, 2000[93]). There is some evidence of a positive relationship between the use of non-formal monitoring mechanisms, such as observation, documentation, portfolios or narrative assessments and positive child development, well-being and learning when these are used to inform practice (Bagnato, 2005[109]; Grisham-Brown, 2008[110]; Meisels, 2003[111]).

According to the OECD (2015b[23]) Starting Strong IV report, the monitoring of child development through observations and narrative assessments is more common and comprehensive than direct assessments. The most prevalent areas covered by observation-based assessments are literacy, numeracy, and teacher-rated social-emotional adjustment, while self-regulation and higher-order cognitive skills are largely absent from monitoring and assessment mechanisms (Burchinal, 2018[1]). On the other hand, direct assessments, in many jurisdictions, tend to cover a narrower set of domains than observations and narrative assessments. More than half of the surveyed jurisdictions apply direct assessments that often focus on skills such as language and literacy, health development, socio-emotional skills, and motor skills (OECD, 2015b[23]).

It is also worth discussing cultural considerations regarding the use of monitoring and assessment in ECEC. Culture guides behaviour, and as such, differences in cultural values may influence staff opinions, beliefs, and practices regarding child monitoring and assessment (Grieve, 1992[112]). Therefore, monitoring and assessing child development should be sensitive to cultural values and beliefs about child development; involving family and community members in this process can help to ensure that cultural context is considered (Broekhuizen et al., 2015[113]; Espinosa and López, 2007[114]; Oliver et al., 2011[115]). This is also stressed in the OECD Network on ECEC's (2015[116]) document, 'Early Learning and Development: Common Understandings'.

Analytical potential and indicators

Within content area analyses

The main indicators on the monitoring and assessment of children's development, well-being, and learning are:

- Content of initial education regarding monitoring and assessment
- Content of professional development and need for further development regarding monitoring and assessment
- Self-efficacy regarding the monitoring and assessment of children
- Staff use of monitoring and assessment
- Time spent on the monitoring and assessment of children
- Staff engagement in collaborative professional practices related to the monitoring and assessment of children
- Monitoring and assessment information sharing with stakeholders

Cross-content area analyses

Indicators related to the monitoring and assessment of children's development, well-being, and learning will be key predictor variables in TALIS Starting Strong 2024. Analyses will also likely examine how monitoring and assessment are influenced by policies and structural quality, using the corresponding survey questions, items, and measures.

Measures of child monitoring and assessment provide an opportunity to address research issues such as:

1. Monitoring or assessment in relation to continuing professional development, initial training, culture, and ideological beliefs.
2. Links between child monitoring and assessment, process quality, and pedagogical practices.
3. ECEC staff beliefs regarding monitoring and assessment, including how prepared they feel to conduct assessments.

Professional beliefs about children's development, well-being and learning

ECEC staff beliefs regarding young children's development, well-being, and learning influence their pedagogical approach and practice, which in turn, influences children's outcomes (Staub and Stern, 2002[117]; Blömeke, 2017[118]). For instance, ECEC staff beliefs regarding the value of direct instruction (i.e., teacher-centred practices) with young children are likely to influence the extent to which they use the said approach.

ECEC staff beliefs and practices may be shaped by various factors. For instance, situational factors, such as the degree of staff independence or management and group sizes, affect the nature of the relationship between beliefs and practices (König and Pflanzl, 2016[119]; König and Rothland, 2013[120]). The pre-service and in-service education and training received by ECEC staff can also affect ECEC beliefs and practices (König, 2012[121]). Cultural, historical, and familial contexts also exert an influence (König, 2012[121]).

Theoretical and empirical background

Link between beliefs and practice

Beliefs of ECEC staff regarding young children's development, well-being, and learning directly shape their practices (Charlesworth et al., 1991[122]; Kagan, Tarrant and Kauerz, 2008[123]; Pianta et al., 2005[6]; Stipek and Byler, 1997[124]; Stipek et al., 2001[88]). In fact, Pianta and colleagues (2005[6]) found that,

even after adjusting for staff experience or training and structural factors (such as staff-child ratio), ECEC staff beliefs about children had the strongest association with observed pedagogical quality.

However, more recent studies have found the association between pedagogical beliefs and practices in ECEC to be less clear [see, for example: Lam (2018[125]); Gerde et al. (2019[126]); Ata-Akturk and Sevimli-Celik (2020[127])]. For instance, a study in Singapore conducted by Ting Tan and Rao (2017[128]) found that, although staff tended to report having child-centred rather than teacher-centred beliefs, their actual practice was largely teacher-directed, didactic, and focused on children acquiring academic skills. Similarly, in a study with a Norwegian sample, Nilsen (2021[129]) found that ECEC staff unanimously acknowledged the importance of having play materials available for children and believe that play materials contribute to children's learning and development. Notwithstanding, ECEC staff would still take play materials out of children's reach due to practical considerations. The studies cited above indicate how pedagogical beliefs might not always reflect in ECEC staff practices.

Factors that influence beliefs

Some studies suggest that staff competencies and qualifications seem to be closely associated with pedagogical beliefs (Wieduwilt, Lehrl and Anders, 2021[130]). Research from different countries has found that historical narratives and cultural context – which can vary even across regions within the same country (Matsumoto and Tsuneda, 2019[131]) – are also important influences on ECEC staff.

The beliefs and practices of ECEC staff can also be influenced by the characteristics of the children and families with whom they work. For example, children's socio-economic status (SES) has been found to be related to ECEC staff practices (Lee and Ginsburg, 2007a[132]; Stipek and Byler, 1997[124]). Children from low-SES backgrounds are often behind their more affluent peers in many areas, and awareness of this disparity may influence the beliefs and practices of ECEC staff who serve children from disadvantaged backgrounds. For example, ECEC staff working with low-SES children rate memorising facts and rote tasks (procedural knowledge) as more important pedagogical goals than problem-solving and tasks involving reasoning [conceptual knowledge; Stipek & Byler, (1997[124])]. ECEC staff who work with low-SES children also tend to prioritise the acquisition of more basic skills, in comparison to their counterparts who work with middle-SES children (Stipek and Byler, 1997[124]).

In another study, ECEC staff working with low-SES children believed that children should engage in mathematics activities in preparation for kindergarten (i.e., the year before formal school), even if they initially showed little or no interest (Lee and Ginsburg, 2007b[133]). Conversely, ECEC staff working with middle-SES children were more likely to express that activities should be child-focused and child-initiated, and they tended to emphasise children's social-emotional development (Lee, 2006[134]; Lee and Ginsburg, 2007b[133]). Lee and Ginsburg (2007b[133]) hypothesised this was because ECEC staff believed that middle-SES parents already provided their children with significant academic support at home.

Changing beliefs

Trying to change pedagogy without considering pedagogical beliefs may prompt resistance (Lee and Ginsburg, 2007b[133]; Ryan and Grieshaber, 2004[135]). As such, efforts to change pedagogical practices must consider how staff perceive their role with young children, as well as their beliefs about the purpose of ECEC settings. In addition, some pedagogical beliefs have been found to be more malleable than others (Di Santo, Timmons and Lenis, 2017[136]). For instance, Di Santo and colleagues (2017[136]) reported that beliefs about behaviour management were more malleable to change, while beliefs about classroom or playroom practice and beliefs about children tended to be stable. Hence, changing beliefs is a relatively complex endeavour.

Furthermore, research has shown that ECEC staff views are often established even before they receive initial training (Isikoglu, 2008[137]; La Paro et al., 2009[138]; Vartuli and Rohs, 2009[139]). Multiple factors, including family, friends, religion, media, and ECEC staff's own educational experiences, influence beliefs about pedagogy and practice (Aldemir and Sezer, 2009[140]). Nonetheless, opportunities to learn appropriate pedagogy in a given subject can mediate staff beliefs. For instance, one study found that knowledge of mathematics and opportunities to learn mathematics pedagogy were significantly related to beliefs (Blömeke, Dunekacke and Jenßen, 2017[141]). This suggests that, while beliefs may indeed develop well before ECEC staff undergo initial training, professional development can still play a role in changing practitioners' beliefs and practices.

Another study found a link between ECEC staff's perceived need for professional development in science, technology, maths, and engineering (STEM), their pedagogical beliefs about STEM, and their sense of self-efficacy (Chen, Huang and Wu, 2021[142]). The same study found STEM pedagogical beliefs to mediate the association between self-efficacy and perceived need for professional development, suggesting that beliefs can motivate staff to address the difficulties they face in delivering ECEC.

Analytical potential and indicators

Within content area analyses

Capturing data on professional beliefs is relevant from a policy perspective, given how beliefs can influence various aspects of process quality. In addition, obtaining this data through TALIS Starting Strong 2024 provides an opportunity to explore cross-country and cross-cultural differences in professional beliefs.

However, questions on beliefs need to be carefully considered to avoid social desirability bias. Socially desirable responding may be particularly marked in ECEC staff, since there are often very public discourses about what young children should be and are able to do. The socially acceptable discourse may differ from one's beliefs; for instance, while child-centric models are popular, an ECEC practitioner's personal beliefs may be that teaching should be adult-directed. However, when reporting their beliefs, the same practitioner might indicate an alignment with child-centric ECEC, since they know that this is the most socially accepted answer.

Indicators and dimensions concerned with professional beliefs about children's development, well-being and learning can be summarised as follows:

- Beliefs about enhancing the development of children's abilities and skills, and
- Beliefs about diversity, equity, and inclusion practices

Cross-content area analyses

Information on professional beliefs – in conjunction with information on process quality and related content areas – may give insight into ECEC staff's education, training, and professional development needs. Capturing data on ECEC staff's professional beliefs about children's development, well-being, and learning can also help answer research questions concerning:

- The relationship between professional beliefs and staff background (e.g., previous education or professional development);
- Cultural differences in professional beliefs and how these may influence patterns of professional development in ECEC across countries and jurisdictions;
- Professional beliefs on how to develop children's skills for life in the 21st century;

- The association of professional beliefs with staff self-efficacy, ECEC setting climate, job satisfaction, pedagogical practices, and process quality.

Self-efficacy

The concept of self-efficacy was introduced by Bandura (1977[143]), who defined it as a belief in one's own ability to perform the actions needed to attain a given goal. From an ECEC standpoint, this corresponds to the degree to which staff feel comfortable and confident in their ability to perform their job (OECD, 2020b[99]). While there has been substantial research on self-efficacy among teachers of school-aged children, studies regarding professional self-efficacy within the ECEC context are limited. TALIS Starting Strong hence makes a systematic, large-scale effort to document ECEC staff and leader self-efficacy.

In TALIS Starting Strong, self-efficacy refers to ECEC staff's own beliefs and judgements about their own ability to promote children's development, well-being, and learning. Bandura (1977[143]) clarified that, while self-efficacy beliefs may be influenced by external factors and obstacles, self-efficacy is first and foremost a subjective evaluation of one's own capability. Thus, individuals within the same environment or context – be it a school, country, or educational system – may have different levels of self-efficacy. This conceptualisation comprises elements of self-efficacy theory and is also informed by research on effective instruction.

A positive sense of self-efficacy can lead to improvements in practice and job satisfaction – both of which can, in turn, bolster children's development, well-being, and learning (Armor, 1976[144]; Jeon, Buettner and Grant, 2018[145]; Rotter, 1966[146]; Skaalvik and Skaalvik, 2007[147]). As such, capturing data on ECEC staff and leader self-efficacy is a matter of policy interest. TALIS Starting Strong can provide this data.

Theoretical and empirical background

Tschannen-Moran and Hoy (2001[148]) and Skaalvik and Skaalvik (2010[149]) identified six aspects of educators' self-efficacy. Combining and adapting their conceptualisations of educators' self-efficacy to an ECEC context, self-efficacy can therefore be conceived as spanning: (i) pedagogical practices; (ii) ability to adapt practice to children's individual needs; (iii) promoting children engagement in and excitement for learning; (iv) maintaining a well-organized and ordered environment (e.g., low noise levels) in the classroom or playroom; (v) cooperating with colleagues and parents; and (vi) coping with change. It is also important to note that self-efficacy can develop over time and with experience, especially as teachers' skills improve (Tschannen-Moran and Hoy, 2001[148]).

In a review of research, Jerald (2007[150]) found that some teacher behaviours appeared to be related to their sense of self-efficacy. Teachers with a stronger sense of self-efficacy:

- Tend to exhibit greater levels of planning and organisation.
- Are more open to new ideas and more willing to experiment with new methods to better meet the needs of their students.
- Are more persistent and resilient when things do not go smoothly.
- Are less critical of students when they make errors.
- Are less inclined to refer a difficult student to special education.

Self-efficacy beliefs are context-specific and connected to instructional capabilities and tasks (Tschannen-Moran and Hoy, 2001[148]), (Klassen et al., 2011[151]; Malinen et al., 2013[152]). For instance, Yada and colleagues (2019[153]) found differences in the sources of self-efficacy for Japanese and Finnish teachers. The sources of self-efficacy considered in their study[1] explained only 15% of the variance in Japanese teachers' self-efficacy ratings, while it accounted for 54% in the Finnish teachers'

ratings. This difference could be at least partly explained by cultural factors, such as the de-emphasising of personal accomplishments in Eastern ECEC settings (Yada et al., 2019[153]).

Studies have found various correlates of self-efficacy in an educational context. The Job Demands-Resources (JD-R) model explains how both contextual and individual factors can influence work performance, well-being and teacher self-efficacy, although the direction of the effect could not be established (Bakker and Demerouti, 2007[154]). For instance, Huang, Yin, and Lv (2019[155]) found that the emotional job demand of teaching is positively correlated to self-efficacy and well-being in a Hong Kong sample. Lipscomb and colleagues (2021[156]) observed that, after controlling for teachers's education level and professional development, self-efficacy and professional support predicted 55% of the variance in work engagement. An earlier study, conducted by Albridge and Fraser (2016[157]), yielded similar results, demonstrating how teacher self-efficacy and job satisfaction were related and were both connected to school climate. There may also be gender differences, with Klassen and Chiu (2010[158]) reporting that female educators expressed weaker feelings of self-efficacy in the way of classroom management.

While there is substantial research on teachers' self-efficacy, comparatively little is known about the self-efficacy beliefs of ECEC staff. One pioneering study examining self-efficacy in ECEC was conducted by Justice and colleagues (2008[159]), using an adapted version of the Teacher Self-Efficacy Scale (Bandura, 1997[160]). They found that ECEC staff reported having generally high self-efficacy when it comes to facilitating children's learning. Guo, Kaderavek, and colleagues (2011[161]) – also using Bandura's (1997[160]) TSES – and Brown (2005[162]), using Tschannen-Moran and Hoy's (2001[148]) Teachers' Sense of Efficacy Scale, found similar results.

However, ECEC staff expressed low to moderate levels of self-efficacy in terms of their influence on administrative issues, such as classroom/playroom size and composition (Guo et al., 2012[163]; McGinty, Justice and Rimm-Kaufman, 2008[164]). This may be due to ECEC staff believing that policy-related decisions, such as class size, are made at the level of setting administration, where they feel they have no influence. It is worth noting, however, that the self-efficacy studies above were all conducted with an American sample.

Taken together, these studies' findings indicate that, while ECEC staff in the United States are confident in their abilities to motivate and engage young children, manage children's behaviour, and use effective instructional strategies, they feel they have much less control over administrative aspects of ECEC provision, which affect structural quality.

Further research in the United States by Guo and colleagues (2010[165]; 2012[163]) found that ECEC staff self-efficacy – by way of its association with improved process quality in staff-child interactions – was linked to gains in children's language development. Earlier studies yielded similar results [see, for example: Sylva et al. (2004a[24]); Connor et al. (2005[166]); Mashburn et al. (2008[4])]. In other words, the quality of staff-child interactions was found to mediate the relationship between ECEC staff self-efficacy and children's learning.

Certain teacher-level characteristics also correlate with self-efficacy. For instance, Bullock and colleagues (2015[167]) demonstrated a positive association between years of teaching experience and classroom/playroom management self-efficacy. The study also found that ECEC staff's level of extraversion and openness to experience predicted their classroom/playroom management self-efficacy, beyond years of teaching experience. Another study with pre-service ECEC teachers in Türkiye found that participants who reported themselves as being 'competent' or 'moderately competent' with parental involvement in ECEC provision also tended to have higher levels of self-efficacy in this area (Alaçam and Olgan, 2017[168]).

TALIS Starting Strong 2018 is one of few studies that provide insight into ECEC staff's self-efficacy across a range of countries, and its results showed varying levels of self-efficacy across countries and

content areas. Broadly speaking, ECEC staff report lower levels of self-efficacy when it comes to working with diverse groups of children and expressed a need for more training in this area (Danmarks Evalueringsinstitut, 2020[169]; Gjerustad, Hjetland and Opheim, 2019[170]; OECD, 2020b[99]).

Compared to other aspects of their job, ECEC staff surveyed in TALIS Starting Strong 2018 also felt less confident about using digital technology (OECD, 2020b[99]). Other studies generated similar results: many ECEC staff lack knowledge and confidence in using online tools in developmentally appropriate ways (Marklund, 2019[171]; Murcia, Campbell and Aranda, 2018[172]).

Therefore, it is of interest for countries to develop policies that would help raise the skills and confidence of ECEC staff in the aforementioned areas (OECD, 2020b[99]).

Analytical potential and indicators

Within content area analyses

TALIS Starting Strong 2024's questions regarding staff self-efficacy can describe the extent to which ECEC staff feel capable of performing different aspects of their role. They can also be used to identify differences in ECEC staff self-efficacy across cultures, countries and jurisdictions, and educational systems.

TALIS Starting Strong 2024 conceptualises staff self-efficacy as encompassing the full range of practices and responsibilities that come with being a staff member in an ECEC setting. Hence, questions about staff self-efficacy refer to the following areas, among others:

- Self-efficacy regarding staff-child interaction.
- Self-efficacy regarding the monitoring and assessment of children.
- Self-efficacy regarding facilitating children development, well-being and learning.
- Self-efficacy relating to diversity, equity, and inclusion practices.
- Self-efficacy regarding use of digital technologies.

Cross-content area analyses

It would be possible to examine the relationship of ECEC staff self-efficacy with other indicators, such as: (a) pedagogical practices; (b) prior education and training; (c) professional development; (d) well-being; (e) organisational climate; and (f) individual background characteristics, such as age, gender, and level of professional experience. Understanding these associations can potentially inform interventions that aim to strengthen the self-efficacy of ECEC staff.

Staff and leader characteristics

Staff and leader demographic and education background

TALIS Starting Strong 2024 collects information about staff and leaders' backgrounds, such as gender, age, work experience and formal education prior to working at their ECEC setting. Besides providing a valuable description of ECEC settings and systems, data on staff and leaders' backgrounds can also be used to explore how these characteristics may relate to other indicators (e.g., self-efficacy, well-being, and professional beliefs). Furthermore, data on staff and leaders' background characteristics lends context to the survey data on other content areas and indicators.

This sub-section explores how ECEC staff and leaders' background characteristics, including their prior formal education, relate to other content areas and indicators of the survey. In addition, this sub-section

discusses how practitioners' background characteristics relate to ECEC quality and children's development, well-being, and learning outcomes.

Theoretical and empirical background

There are multiple pathways into ECEC work and the structure, content, and emphasis of initial education vary between and within countries (OECD, 2012a[173]). Different regulations for the ECEC sector mean there can be large variation across initial training programmes for ECEC practitioners, compared to counterpart programmes in primary education (Pardo and Adlerstein, 2016[174]).

Characteristics of initial education and training (level and length/duration)

The characteristics of ECEC practitioners' initial education and training is a matter of policy interest, as demonstrated by efforts to professionalise the ECEC workforce. However, TALIS Starting Strong 2018 found that the proportion of staff who received prior education on working with children varies widely across countries, ranging from 64% of ECEC staff in Iceland, to 97% in Germany (OECD, 2020b[99]). The characteristics of initial training for ECEC staff, such as the duration and the educational level at which the qualification is obtained, also vary by staff category and across countries (Bertram et al., 2016[175]; Cobano, Llorent and Navarro, 2020[176]; OECD, 2012a[173]; Pardo and Adlerstein, 2016[174]).

Initial training for ECEC practitioners ranges from a programme held at a secondary education institution to master's degree programmes obtained at university (OECD, 2012a[173]; 2020b[99]). In some countries, the level of qualification obtained may vary depending on staff category – that is, teachers and assistants might have different qualifications (OECD, 2019c[177]). It is also worth noting that, as a result of the previously mentioned professionalisation efforts, countries like Brazil and Chile are abolishing ECEC training programmes at the secondary level (Pardo and Adlerstein, 2016[174]). Short-cycle higher education ECEC staff preparation programmes, which last two years rather than the three or four years of a typical university degree, also exist in certain countries; these were often put in place to attract larger numbers of prospective qualified ECEC practitioners, hence addressing shortages (Carver-Thomas and Darling-Hammond, 2017[178]).

Evidence suggests that there are positive associations between having ECEC-specific content or a specialisation in early childhood as part of initial training, the length of training and the type of practices that staff deploy (OECD, 2018b[10]; Sim et al., 2019[22]). Although many countries have established national standards of required competencies, the actual share of ECEC staff trained to these standards varies. For example, ECEC staff qualifications in the US range from high school equivalents (or even lower for home-based providers) to advanced degrees (Pianta, Hamre and Nguyen, 2020[14]). Qualifications of ECEC practitioners vary similarly across European countries, despite the European Union's efforts to establish common criteria. For instance, a study of ECEC preparation programmes in England, France, and Spain found that ECEC practitioners across the three countries had different levels of qualification, and broadly speaking, the qualifications required of ECEC practitioners were lower than what was required of practitioners at other levels of education (Cobano, Llorent and Navarro, 2020[176]).

Monitoring in this area is poor in many countries (UNESCO, 2015[179]), and in some countries the pressure of enrolment surges (e.g., with the introduction of compulsory education) has lowered training and hiring standards. Formal or informal policies supporting the recruitment of staff from ethnic minorities or other disadvantaged groups are enforced in many countries, but staff often lack the required training to meet national standards (UNESCO, 2015[179]). Furthermore, some countries are contending with rapidly increasing enrolment rates (due to the introduction of compulsory ECEC, for instance), which has, in some cases, prompted a lowering of training and hiring standards (UNESCO, 2015[179]).

Pedagogy and content of pre-service education and training

There is a lack of systematised information regarding the pedagogy, content, and mode of delivery of pre-service education and training for ECEC practitioners. Research on the content and quality of ECEC preparation programmes also remains limited (Early et al., 2007[180]; Fukkink and Lont, 2007[181]). TALIS Starting Strong 2024 provides an opportunity to fill in this gap.

Pre-service education has the potential to create a common understanding of good practices across ECEC staff (OECD, 2019c[177]). The knowledge base that should be included in initial preparation programmes for ECEC staff is broad and typically considered to include areas such as: child development, curriculum content, pedagogy, disciplinary content (mathematics, language and literacy, science, social studies, and arts), psychology, and play. In addition, the following content areas are becoming increasingly important: (a) working with diverse groups of children (Vandenbroeck, 2020[37]); (b) attending to children's holistic well-being (OECD, 2019c[177]); (c) effectively engaging families and communicating with other educational and non-educational institutions (Haslip and Gullo, 2018[182]; Schleicher, 2019[183]); and (d) using digital technologies in developmentally appropriate ways (Kalogiannakis and Papadakis, 2019[184]).

There is also growing interest in providing pre-service trainees with opportunities to rehearse teaching practices in real classrooms or playrooms, accompanied by expert teachers; these rehearsal opportunities may also be video-recorded and analysed to facilitate the learning of pre-service trainees (Ball et al., 2009[185]; Grossman, 2018[186]; Grossman et al., 2009[187]; Lampert, 2010[188]). However, while teaching practicum forms part of many pre-service training programmes, the duration of the practicum varies across countries.

Some countries have defined a minimum number of days of practicum required to graduate. For example, Norway and Sweden currently require students to complete 100 days of practical placement while Denmark requires one year (OECD, 2019a[189]). In Spain, the minimum amount of time trainees must spend in the classroom or playroom, at the time of writing, varies between 400 and 600 hours, depending on the qualification being pursued (OECD, 2019a[189]).

The role of internship schools – or university-school partnerships - during initial ECEC training is also worth exploring (Zhang, Admiraal and Saab, 2020[190]). Online degrees have also emerged, offering ease of access and more flexible education formats (Gardner et al., 2019[191]; Workman, Guernsey and Mead, 2018[192]). But regardless of the modality (that is, onsite or online), practical work remains a common requirement of most ECEC programmes.

However, the content of initial ECEC training has not been systematically examined, and this is made difficult by the wide range of training pathways into ECEC work. Between - and within-country variation in the content of ECEC training programmes, as shown by the results of TALIS Starting Strong 2018, adds further complexity. For instance, in a recent study of 14 Latin American countries, Pardo and Adlerstein (2016[174]) found that only two countries had national guidelines on curriculum for ECEC pre-service programmes. In a UK-based survey by Hadfield and Jopling (2012[193]), about 23% of the trained ECEC professionals surveyed indicated that their degree had no content that was specifically relevant to ECEC, while 64% stated that their degree had directly relevant content. Furthermore, relevance of ECEC training was higher among UK practitioners in child-care settings or other local ECEC settings, compared to their counterparts in school-based and home-based settings (Hadfield and Jopling, 2012[193]).

TALIS Starting Strong 2024 aims to contribute towards mapping the various content areas and programme components of pre-service ECEC education across different countries.

Effectiveness of ECEC pre-service education and training

Evidence supports the importance of ECEC staff with the specific content knowledge relevant for working with young children. Studies have shown that children in ECEC settings whose ECEC staff possess knowledge and understanding of child development showed better development, well-being, and learning outcomes (Hanno et al., 2020[194]; Naudeau et al., 2011[195]; Siraj-Blatchford et al., 2003[196]). Furthermore, having a credential in early childhood education has been generally linked to higher overall quality in ECEC settings (Manning et al., 2017[197]; Torquati, Raikes and Huddleston-Casas, 2007[198]). However, the level of education at which the ECEC qualification was obtained, as well as the duration of the initial training received, also appears to influence the quality of ECEC provision.

Various studies have shown higher staff education to be a moderate to strong predictor of higher-quality ECEC classroom/playroom environments and higher-quality ECEC staff-child interactions, both of which are linked to improved child outcomes (Early et al., 2007[180]; Fontaine et al., 2006[199]; Manning et al., 2017[197]; Phillipsen et al., 1997[200]; Slot, 2018[201]). The IEA Pre-Primary Project, a 10-country study of preschools, showed that the duration of pre-service education was strongly associated with children's higher language scores at age 7 (Montie, Xiang and Schweinhart, 2006[202]).

More specifically, ECEC staff with a four-year university degree score higher on classroom or playroom environment according to the ECERS-R (Early et al., 2007[180])[2]. In addition, ECEC staff with a four-year college degree and a teaching certificate specialised in early childhood education were more likely to create higher-quality development, well-being, and learning environments, compared to ECEC staff with no formal training in early childhood (Pianta et al., 2005[6]; Sylva et al., 2004a[24]).

These findings are supported by Hong and colleagues' (2019) analysis of six large-scale US studies, which found teacher education to be associated with child outcomes. In some studies, children had even showed gains in language and cognition that lasted through to the second year of primary education (Whitebook and Ryan, 2011[203]). A study of Peruvian ECEC programmes, conducted by Hanno and colleagues (2020[194]), found similar results, with children in classrooms or playrooms facilitated by teachers with a university degree attaining higher scores on a vocabulary test (PPVT), when controlling for children and setting variables.

These outcome gains may be at least partly attributed to improvements in staff-child interactions that are observed in ECEC practitioners with university-level qualifications. For instance, the National Child Care Staffing Study (NCCSS) found that ECEC staff with a four-year degree were more sensitive than ECEC staff with two or less years of training (Howes, Whitebook and Phillips, 1992[204]), and children with more sensitive and responsive educators tend to achieve better language outcomes and engage in higher levels of peer play (Howes, Whitebook and Phillips, 1992[204]; Melhuish et al., 1990[205]). Moreover, professional, trained ECEC staff are more likely to engage with children in an age-appropriate manner, in comparison to non-professional staff, when it comes to developing socio-emotional and verbal skills (Katz, 1983[206]; Shonkoff and Phillips, 2000[207]). Having a credential in early childhood education has also been linked to higher overall quality in ECEC settings (Manning et al., 2017[197]; Torquati, Raikes and Huddleston-Casas, 2007[198]).

Meta-analytical evidence supports these findings. Higher teacher qualifications are significantly and positively associated with higher-quality ECEC provision (Manning et al., 2019[208]). In addition, Nocita and colleagues (2020[209])found a positive association between teachers' early childhood specialisation and children's language and socioemotional development outcomes; however, this was a weak association.

Hence, the question lies not in the presence or absence of an association of ECEC training programmes with the quality of ECEC provision, but in the magnitude of this association. That the meta-analysis by Nocita and colleagues (2020[209]) found a weak association may be due to previously discussed

variations in content, modality, duration, and quality across the wide range of ECEC programmes, as discussed earlier.

Analytical potential and indicators

Within content area analyses

Based on the previously presented evidence, it would be reasonable to expect a lot of variability in the characteristics and content of pre-service education and training programmes for ECEC, both between and within countries. Similarly, one could also expect to find both highly trained staff and staff with little training, between and within countries. Therefore, TALIS Starting Strong 2024 remains interested in explore the types and levels of qualifications, as well as the content and duration of initial training received by ECEC staff and leaders across countries.

The indicators and dimensions of staff and leader demographic and educational background can be summarised as follows:

- Gender
- Age
- Linguistic background
- Years of experience in ECEC
- Content of prior formal education
- Characteristics of prior formal education
- Qualifications gained from prior formal education

Cross-content area analyses

The evidence presented earlier in this sub-section also suggests a relationship between ECEC staff's initial education, the practices they use, and the quality of ECEC provision. As such, TALIS Starting Strong will help further develop an understanding of the relationship between initial ECEC education and staff practices with children.

Continuing professional development

A well-trained and knowledgeable workforce is a critical component of a quality ECEC programme (Slot, 2018[201]; Zaslow and Martinez-Beck, 2006[210]). Studies have shown positive associations between staff professional development and staff-child interactions (Egert, Dederer and Fukkink, 2020[211]; OECD, 2018b[10]; Slot, 2018[201]).

Continuing professional development (CPD) (also referred to as 'continuing professional learning' (Ainley et al., in press[212])) can be understood as activities that seek to strengthen the skills and knowledge of currently employed ECEC staff, as well as improve their effectiveness (Neuman and Cunningham, 2009[213]). Professional development activities vary widely, ranging from one-hour workshops, to multi-year-long coaching programmes, to professional learning communities. They also vary widely in terms of content, delivery format, location, and number of participants (Zaslow et al., 2010[214]).

CPD provides ECEC staff with the opportunity to critically reflect on their practices, which can in turn improve the quality of their interactions with children, families, colleagues, and other stakeholders within the ECEC ecosystem. It also helps ECEC staff keep abreast of new developments in the field. Overall, studies have shown positive associations between staff professional development and staff-child

interactions (Egert, Dederer and Fukkink, 2020[211]; OECD, 2018b[10]; Slot, 2018[201]). CPD can also be a tool to bridge gaps in the knowledge and skills of low-qualified staff (OECD, 2018b[10]).

The success of CPD depends in part on the supply of effective programmes; a programme can be considered effective if it sufficiently addresses the learning needs of ECEC staff. Time and resource investments on the part of ECEC settings are also necessary to the success of CPD. Of course, participants' motivation and disposition to learn and apply newly acquired competences are important as well.

TALIS Starting Strong 2024 aims to help identify the professional development needs of ECEC staff, as well as the different incentives and barriers to their participation in professional development activities. This information can help countries and jurisdictions put in place the conditions needed for effective CPD.

Theoretical and empirical background

Since the competencies of ECEC staff are commonly acknowledged as determinants of children's outcomes, more and more countries are focusing on CPD (Sheridan et al., 2009[215]; Slot, 2018[201]). As noted earlier, CPD opportunities for ECEC staff can take different forms, including but not limited to academic courses with degrees or credentials, coaching and mentoring, and professional learning communities (Buysse, Winton and Rous, 2009[216]; Egert, Dederer and Fukkink, 2020[211]; Fuligni et al., 2009[217]). ECEC settings may also run their own internal CPD activities, such as communities of practice and induction activities for new staff.

ECEC staff value professional development and generally perceive it to be useful, since it can inform their practice (Gomez and Ford, 2017[218]; Méndez et al., 2017[219]; Moor et al., 2005[220]; Stormont and Young-Walker, 2017[221]). Indeed, several studies have found a significant association between ECEC staff's participation in CPD and children's outcomes, even though it is not always clear how these processes function (Ciesielski and Creaghead, 2020[222]; Jensen and Rasmussen, 2019[223]; Sheridan et al., 2009[215]; Slot, 2018[201]). A meta-analysis by Egert and colleagues (2018[224]) suggests that participation in CPD improves children's outcomes by way of improving classroom/playroom quality; in other words, classroom/playroom quality mediates the relationship between CPD participation and children's outcomes. A systematic review by Brunsek and colleagues (2020[225]) found that CPD improved children's outcomes when the content areas of the professional development activity corresponded with the outcome measures.

Some studies even suggest that, compared to initial ECEC training, in-service training – especially training on guided play, collaborative work, and appropriate emergent literacy, mathematics, and science activities – has a larger positive effect on staff-child interactions (Assel et al., 2007[226]; Ciesielski and Creaghead, 2020[222]; De Haan et al., 2013[227]; Sylva et al., 2007[228]; Zaslow et al., 2010[214]).

Furthermore, according to one Chilean study, educators believe that their participation in CPD has an impact on their practices and that it is critical to their career progression (Gomez and Ford, 2017[218]). In addition, ECEC staff in New York stated that professional development was one of the reasons they would not leave the profession (Blank et al., 2006[229]). These studies show a potential link between continuing professional development and ECEC staff retention.

Type of continuing professional development

CPD may consist of formal or informal learning opportunities (Richter et al., 2014[230]). On one hand, formal professional learning takes place in structured learning environments, such as mandated staff development or graduate coursework. On the other hand, informal professional learning does not follow a specified curriculum, is not restricted to a specific learning environment, and is generally voluntary.

Examples of informal professional learning are unstructured coaching and grassroots communities of practice.

Traditionally, however, formal CPD in ECEC has been delivered in one-off sessions. These forms of CPD have been criticised for targeting only short-term changes in ECEC staff practice. In addition, critics have claimed that these forms of CPD ignore realities faced by ECEC staff in classrooms, playrooms, and ECEC settings (Schachter, Gerde and Hatton-Bowers, 2019[231]). As such, while one-off training sessions could certainly form part of a broader CPD toolbox, they should not be the core method in any ECEC setting's professional development strategy.

Enrolling ECEC staff in higher education coursework may be a suitable alternative. University-based CPD can range from short-duration certificate courses to two-, three- or four-year programmes that lead to advanced academic degrees. In addition, micro-credentials[3], while still an emerging form of qualification, could serve as a more flexible, personalised, and competency-based professional development pathway for ECEC staff (Hunt et al., 2019[232]). Since micro-credentials are competency-based, personalised, and taken on-demand, ECEC practitioners can choose to focus on a discrete skill that is currently most applicable to their professional needs, their students', or their setting's needs (Crow and Pipkin, 2017[233]).

Structured coaching and mentoring schemes are one of the most effective types of CPD in ECEC (Brunsek et al., 2020[225]). Coaching is understood as an individualised and ongoing learning process where a more experienced practitioner (coach) accompanies another practitioner (coachee), usually onsite (Elek and Page, 2019[234]).

A review of coaching programmes identified four critical features: feedback, observation, goal-setting, and reflection (Elek and Page, 2019[234]). Guided by their coach, the coachee takes stock of their previous experiences and any new knowledge they have acquired through the coaching process and use those to improve their practice (Rogers, Brown and Poblete, 2020[235]).

Video-coaching can also be a powerful tool for prompting collective reflection and providing pedagogical guidance (Balduzzi et al., 2020[236]). The potential benefits of using digital technologies for ECEC staff professional development is explored further in a later sub-section.

These staff coaching programmes can increase classroom/playroom quality and improve staff-child interactions (Fiene, 2002[237]). Onsite coaching, combined with intensive curricula, showed promising results in improving classroom/playroom quality and child development outcomes (Burchinal et al., 2008[238]). A meta-analysis of research on teacher coaching confirms these findings: coaching has a moderate effect on teaching and a small effect on student achievement (Kraft, Blazar and Hogan, 2018[239]).

Participating in CPD alongside groups of teachers and administrators serving children of different ages can help foster a community and culture of learning, which encourages embedding new knowledge into practice (Zaslow et al., 2010[214]). These types of professional networks – which may be known more formally as 'professional learning communities' or 'communities of practice' – give participants a chance to collectively reflect on their daily practices, in their daily context. This form of professional development promotes teacher learning (Rogers, 2017[240]; Zaslow, 2014[241]), individual and collective teacher self-efficacy, and improvements in children's outcomes (Vangrieken et al., 2017[242]). As such, professional learning communities are becoming increasingly present in the ECEC sector across Europe (Jensen and Iannone, 2018[243]), as well as in other countries.

However, a professional development approach that uses a wide variety of methods seems to work best. Indeed, Egert and colleagues' (2020[211]) meta-analysis found that ECEC staff who participated in CPD that combined individual learning opportunities, on-site support, coursework, and workshops, improved their classroom/playroom interactions in all three CLASS domains (i.e., instructional support,

emotional support, and classroom/playroom organisation). Independent of the format of professional development, digital technology can facilitate its delivery (OECD, 2023[244]).

Participation in continuing professional development

Opportunities for CPD participation vary across the OECD's member countries (Bennett et al., 2003[245]; Taguma, Litjens and Makowiecki, 2012[246]). In some countries, participation in CPD has become a requirement for ECEC staff, although it may be optional for ECEC staff working with younger children or for assistant-level ECEC staff (OECD, 2021[5]). For instance, in Poland and Slovenia, CPD is required for career progression and to be eligible for salary increases (European Commission, 2014[247]). In, Japan pre-primary teachers are required to attend regulated courses and lectures provided by universities and other training institutions to be able to renew their accreditation every ten years (OECD, 2021[5]).

Nonetheless, several countries report low CPD uptake (OECD, 2012a[173]). This low uptake could be caused by several factors, including but not limited to: (a) lack of information about training opportunities; (b) limited time-off from regular work; (c) non-reimbursement of CPD expenses; (d) unclear articulation of the benefits of CPD, and (e) lack of CPD offerings that correspond with what ECEC staff wish to learn (OECD, 2012a[173]). According to TALIS Starting Strong 2018, lack of support from ECEC setting leaders and staffing challenges are also common barriers to CPD participation (OECD, 2019c[177]).

It must also be noted that, while it is common for ECEC staff in settings serving children aged three years or older to have opportunities to participate in CPD, this is less the case for settings serving younger children. Moreover, a 2019 OECD survey on ECEC policies revealed that incentives for assistant-level ECEC staff to participate in professional development activities are not regulated or are not required in most countries and jurisdictions (OECD, 2021[5]).

The results of TALIS Starting Strong 2018 revealed various forms of support that promote ECEC staff engagement in CPD. These forms of support include: (a) release from time working with children; (b) being provided with materials needed for professional development activities; (c) cost reimbursement; (d) monetary incentives; and (e) non-monetary incentives (OECD, 2019c[177]; 2021[5]).

Results also indicate the importance of involving ECEC staff in identifying CPD needs (OECD, 2019c[177]). Since lack of alignment between CPD offerings and ECEC staff demand for training is one possible cause of low CPD uptake, staff involvement in identifying training needs could potentially increase CPD participation.

ECEC staff in Denmark and Norway reported needing more training to work with children with special educational needs, multilingual children, and children from diverse backgrounds (e.g., multicultural, economic, religious) (Danmarks Evalueringsinstitut, 2020[169]; Gjerustad, Hjetland and Opheim, 2019[170]). More generally, training on how to work with children from diverse backgrounds was identified as a top professional development need in the results of TALIS Starting Strong 2018 (OECD, 2019c[177]). Other studies with ECEC staff in Sweden and Australia indicated a demand for training on how to use digital technologies in ECEC (Marklund, 2019[171]; Murcia, Campbell and Aranda, 2018[172]; Otterborn, Schönborn and Hultén, 2019[248]).

Analytical potential and indicators

Within content area analyses

Given the evidence discussed above, there is likely to be a lot of variability in the content and types of activities covered by CPD across different countries in TALIS Starting Strong. Lack of financial support, staffing challenges, and disparity between the available CPD offerings and ECEC staff needs are also likely to still be common barriers to CPD participation.

The indicators and dimensions of professional development can be summarised as follows:

- Participation in continuing professional development activities
- Engagement in collaborative professional practices
- Type and content of continuing professional development
- Incentives and resources to participate in continuing professional development
- Perceived usefulness of continuing professional development
- Barriers to continuing professional development
- Staff needs for further continuing professional development
- Use of digital technologies for continuing professional development.

Cross-content area analyses

Given previously discussed evidence of a potential association between various features of professional development and ECEC staff practices, this could be an area of analysis for TALIS Starting Strong 2024. It would also be expected that participation in professional development could partly offset ECEC staff's lack of practical experience. The relationship between various features of pre-service training and ECEC staff's professional development needs can also be explored.

Well-being

The COVID-19 pandemic has brought the physical and mental health of educational practitioners to the fore (Eadie et al., 2021[249]). However, ECEC staff well-being has always had huge policy relevance, especially when considering how ECEC staff well-being influences the quality of ECEC provision. After all, research shows that ECEC staff well-being is associated with the quality of staff-child interactions (De Schipper et al., 2008[250]; Grant, Jeon and Buettner, 2019[251]; Jennings, Jeon and Roberts, 2020[252]; La Paro et al., 2009[138]; Rimm-Kaufman and Hamre, 2010[253]). ECEC staff well-being has also been found to be associated with children's well-being (OECD, 2020g[254]).

The association between the well-being of ECEC staff and their intention to stay in the profession further reinforces the policy relevance of ECEC staff well-being. High levels of staff turnover is endemic to the ECEC sector, with most of the OECD's member countries seeing low retention rates among their ECEC staff (Fenech, Sumsion and Goodfellow, 2006[255]; Huntsman, 2008[256]). Hence, understanding the determinants of ECEC staff well-being could help decrease turnover rates (Cormick, McMullen and Lee, 2021[257]; Kwon et al., 2020[258]; McMullen et al., 2020[259]).

Working conditions also form an important part of the picture. In fact, Corr et al. (2014[260]) found that poor mental health among ECEC staff was linked with poor working conditions. Furthermore, in the US, the most common reasons for ECEC staff attrition all pertain to working conditions: inadequate administrative support, low compensation, lack of benefits, and negative perceptions about the work environment (Porter, 2012[261]).

TALIS Starting Strong 2024 explores ECEC staff well-being from the lens of job satisfaction, stress, reasons for staying in the profession, and whether staff feel valued by others. This information can help countries and jurisdictions to create conditions that promote the well-being of ECEC staff, which could in turn reduce turnover and improve the quality of ECEC provision.

Theoretical and empirical background

ECEC staff and leader well-being is understood in this document as a composite of psychological, physiological, and occupational well-being (Cumming and Wong, 2019[262]; Kwon et al., 2020[258]; Wong et al., 2023[263]). It is a multidimensional construct that involves the interaction of individual, relational

and contextual aspects (Cumming and Wong, 2019[262]; Kwon et al., 2021[264]; Wong et al., 2023[263]). Well-being is also related to other content areas of TALIS Starting Strong, such as stakeholder relations, organisational climate, and working conditions.

It must be noted that the relationship between these factors is not only multidimensional but also multidirectional. For instance, while there is well-established evidence of external factors influencing staff well-being (Cumming and Wong, 2019[262]; Kwon et al., 2021[264]; Wong et al., 2023[263]), Kwon and colleagues (Kwon et al., 2021[264]) found that staff's psychological well-being mediated the relationship between working conditions and professional well-being, as well as the relationship between physical well-being and professional well-being. In other words, different aspects of staff well-being – independent of external factors – also exert an influence on each other.

Job satisfaction, which refers to the extent to which a person dislikes or likes their job (Cumming and Wong, 2019[262]), is often used to operationalise staff well-being (Hall-Kenyon et al., 2014[265]). It has been found to be associated with various aspects of the ECEC setting, such as working conditions, stress, and relationships with colleagues (Hall-Kenyon et al., 2014[265]; Cumming, 2017[66]; OECD, 2020b[99]).

Indeed, good working conditions have the power to attract and retain highly qualified and motivated workers. For example, higher wages and better working conditions affect job satisfaction, work motivation and, indirectly, the quality of teaching, caring, and interactions with children (Heilala et al., 2021[266]; Huntsman, 2008[256]; Moon and Burbank, 2004[267]). Establishing fair working conditions – such as appropriate pay ('living wage') and a supportive organisational climate – promote staff well-being, which in turn lead to improvements in children's development, well-being, and learning outcomes (OECD, 2006[268]). Research also suggests that the staff-child ratio in target groups can impact staff job satisfaction. Lower staff-child ratios – that is, a smaller number of children per staff member – are associated with job satisfaction, since they enable staff to provide better quality care (Munton et al., 2002[269]).

On the other hand, low staff compensation has been linked to low morale, weaker career commitment, and poorer teaching quality (Barnett, 2003[270]). Furthermore, it has been shown that poor working conditions within the ECEC sector – such as low wages, long working hours, and the length of the work year in child-care settings (compared to preschools and kindergartens) – deter qualified professionals from entering or staying in the profession (Torquati, Raikes and Huddleston-Casas, 2007[198]).

Relational and contextual factors are also important for understanding job satisfaction (Cumming, 2017[66]; Hall-Kenyon et al., 2014[265]). For example, according to Jorde-Bloom (1988[271])and Schaack and colleagues (2020[272]), organisational commitment and a shared vision are both related to job satisfaction. Goelman and colleagues (2006[273]) note that the number of staff within a classroom or playroom also impacts job satisfaction. When staff work together in a classroom/playroom, there are opportunities for supervision, consultation, and discussing work challenges, which contributes to job satisfaction. Autonomy in the workplace is another factor that has a positive effect on job satisfaction (Child Care Human Resources Sector Council, 2009[274]). Recent findings also reveal a strong association between teacher autonomy and intention to stay in the profession (Worth and Van den Brande, 2020[275]).

Conversely, high levels of work stress for ECEC staff can lead to job dissatisfaction and poorer performance. A US survey of teachers (including staff at kindergarten level) found that stress levels had increased and job satisfaction had dropped by nearly 25 percentage points during a five-year period (Macia, Markow and Lee, 2013[276]). Work stressors are also negatively correlated with teachers' well-being (Gu, Wang and You, 2020[277]). In addition, teaching-related stress negatively affects the quality of ECEC staff's interactions with children, as well as their enforcement of rules and routines in the classroom or playroom (Penttinen et al., 2020[278]).

Work stress can also affect turnover rates. Teachers who reported high levels of stress tended to have the lowest level of occupational commitment and intention to stay in teaching (Lambert et al., 2019[279]). Hence, there is a need to look more closely at the experience of work stress among staff and leaders, as well as any differences within countries (Gjerustad et al., 2020[280]; Viernickel, Voss and Mauz, 2017[281]).

There are several potential sources of stress for ECEC staff. For instance, staff might feel stressed due to the pressures of complying with a top-down curriculum that expects staff to teach children developmentally inappropriate academic content. Lack of coping strategies to handle children's challenging behaviours may also result in stress. Insufficient human or financial resources in the setting are also a major source for stress for staff, as reported by TALIS Starting Strong 2018 (OECD, 2020b[99]).

The extent to which staff feel valued by others – such as parents and guardians, children and society – also influences their well-being (OECD, 2020b[99]), and thus their intentions to stay in the profession. Satisfaction with ECEC as a profession is related to the social value of the profession, which is complex and based on numerous factors. In TALIS 2008, intrinsic and extrinsic value, and personal and social utility, were found to influence motivations for choosing teaching as a career; social factors, such as the esteem in which the profession is held, also influenced this choice.

The balance of these factors can vary between countries. For example, TALIS Starting Strong 2018 results showed cross-country variations in the extent to which ECEC staff feel valued: in Israel, 75% of pre-primary staff 'strongly agreed' that ECEC staff were valued by society, whereas in Japan, only 31% felt similarly (OECD, 2020b[99]). In the US, ECEC staff who felt their work allowed them to make a positive difference in children's lives were more likely to stay in their position and not change professions (Gable and Hunting, 2001[282]). On the other hand, interviews with ECEC staff and recent graduates in Ireland indicated that they do not intend to work in the ECEC field indefinitely, and that they envisioned the possibility of converting to primary school teaching or other employment where they felt their work would be better recognised and valued (Moloney, 2010[283]).

Analytical potential and indicators

Within content area analyses

Based on the research described above, TALIS Starting Strong 2024 has the potential to further examine the relationship between job satisfaction and sources of work stress. It would also be possible to examine the association between job satisfaction and perceived social value of the profession. The incorporation of ECEC staff well-being in TALIS Starting Strong 2024 also provides opportunities to address research questions concerned with the following factors:

- Within and between-country heterogeneity of satisfaction with ECEC as a profession
- Within and between-country differences in workplace stress
- Within and between-country variations of perception of societal value of the profession

Hence, indicators and dimensions concerned with ECEC well-being can be summarised as follows.

- Satisfaction with career and profession
- Satisfaction with levels of autonomy afforded
- Sources of work stress
- Perception of societal value of the profession

Cross-content area analyses

It would be expected that there would be positive correlations between staff well-being (e.g., satisfaction with working environment) and pedagogical practices and process quality in ECEC (De Schipper et al., 2008[250]), as well as associations with administrative/pedagogical leadership (Porter, 2012[261]).

ECEC setting characteristics

Structural quality

Structural quality refers to characteristics which are thought to indirectly influence child development and are considered to be important preconditions of process quality (Slot, Lerkkanen and Leseman, 2015[284]). Structural quality characteristics ensure that children are in settings that meet basic health and safety requirements, while also providing the enabling conditions for children to flourish.

There is no one unique list of structural quality features, but it is possible to organise them into three levels (Early et al., 2007[180]; Halle et al., 2011[285]; Kuger et al., 2016[286]; Slot, 2018[201]):

i. Setting-level (e.g., physical environment, location, size, staff turnover, financial resources, and health, safety, and nutrition);
ii. Classroom/playroom-level (e.g., staff-to-child ratio, group size, group composition); and
iii. Staff-level (e.g., staff characteristics, working conditions, qualifications, and professional development).

A common feature of structural characteristics is that they are measurable, and therefore they can be more readily regulated. Many countries prescribe minimum structural conditions for ECEC settings to be able to operate, receive public funding, or be certified as educational programmes. Setting these minimum standards allows countries to ensure safety, homogenise services, and offer all children similar quality conditions, contributing to a more equitable ECEC system (OECD, 2015a[287]).

These structural characteristics are necessary conditions to ensure process quality, but not sufficient on their own. However, it is important to note that the effects of individual structural characteristics are difficult to isolate, given how children develop and learn in a context where staff, setting, and classroom/playroom-level characteristics are intertwined (Slot, 2018[201]).

Indeed, elements of structural quality tend to be interdependent, and this interdependence can create inequities. For instance, settings with higher staff-to-child ratios might offer better overall working conditions and be able to employ more highly qualified ECEC staff; the converse also holds, since settings with poorer working conditions struggle to attract qualified ECEC staff.

Theoretical and empirical background

For process quality and learning to occur, as well as to support children's development, well-being, and learning – there are minimum structural conditions that need to be met, which is why it is relevant to capture information on structural characteristics. However, it is important to note that defining acceptable minimum thresholds is more straightforward for certain structural characteristics than others. For instance, while hygiene and safety minimums for an ECEC setting are clear-cut, the acceptable minimum for the ratio of qualified teachers per child or the maximum number of children in the classroom/playroom is not as easy to determine.

Regarding setting-level characteristics, physical spaces – both indoor and outdoor – need to be large enough for children to move safely and freely, be well-ventilated, and have low levels of noise. Equipment and furniture also need to be in good shape (Banghart et al., 2020[288]). Furthermore, children

and adults need to feel safe in their learning environment and secure in the fact that their basic needs are being met (Cleveland, 2018[289]). Water, sanitation, and hygiene are also minimum conditions for the learning process (Arshad, Qamar and Gulzar, 2018[290]; Coronel Ugaz, 2017[291]). The COVID-19 pandemic has demonstrated how these basic conditions are fundamental to avoid disease transmission while children attend educational institutions.

The location of ECEC settings is also relevant to the quality of ECEC provision; it can influence children's transitions and equitable access to quality ECEC. Geographical location (i.e., urban vs rural) is linked to differences in the quality of ECEC provision, and this also seems to interact with children's age. In addition, higher quality staff-child relationships were observed in ECEC settings that were located inside schools for children aged 3 to 6, compared to ECEC settings outside school grounds or independent settings (Slot et al., 2017[55]).

Researchers explain these findings by suggesting that staff-child quality interactions have different characteristics across different age groups (OECD, 2018b[10]). For example, scarce or low-quality resources – which is a challenge that rural settings are more frequently faced with - might have a less pronounced negative effect on outcomes for children under the age of three, where greater emphasis tends to be placed instead on informal conversations and routine care. Furthermore, ecological conceptualisations of early child development postulate that ECEC setting structural quality may be mediated or moderated by the social, economic, and cultural characteristics of the neighbourhood and its built environment (Minh et al., 2017[292]).

The type (public, private, mixed) or amount of funding ECEC settings receive is also associated with programme quality. Funding may impact relationships within the setting, working conditions, and resources (OECD, 2018a[293]). For instance, the availability of funding influences a setting's ability to access and use digital technologies or secure technical support (Burns and Gottschalk, 2020[294]; Schleicher, 2019[183]; Zabatiero et al., 2018[295]).

Staff turnover is another determinant of the quality of ECEC provision (Phillips, Austin and Whitebook, 2016[296]). High turnover has been found to be associated with a lower quality of staff-child interactions, which can then impede children's development, well-being, and learning outcomes (Jennings and Greenberg, 2009[297]; Totenhagen et al., 2016[298]; Melhuish and Gardiner, 2019[299]). Staff turnover also increases the likelihood of the remaining staff leaving, thus exacerbating staffing issues (Whitebook and Sakai, 2003[300]). In sum, high levels of staff turnover has far-reaching effects on ECEC quality, affecting process quality, children's development, learning and well-being, and the staff remaining in the setting (Cassidy et al., 2011[301]).

Structural quality characteristics at the classroom or playroom-level seem to be a more proximal predictor of process quality than setting-level characteristics (OECD, 2018b[10]; Slot, 2018[201]). Specifically, smaller group sizes and higher staff-child ratios are thought to enable staff to have higher-quality interactions with each child, develop a better knowledge of the child's needs, and facilitate activities tailored to each child's needs (Bowne et al., 2017[302]), as well as respond to children's needs in a timely manner (Banghart et al., 2020[288]).

Features related to group size and staff-child ratio are cited as consistent predictors of classroom/playroom quality in various OECD countries. Smaller group sizes and higher staff-child ratios have been linked to improvements in staff-child interactions and higher benefits for children under the age of three (CEPI, 2017[303]; OECD, 2006[268]; Sabol et al., 2013[304]; Sim et al., 2019[22]; Ulferts, Wolf and Anders, 2019[75]). The quality of staff-child interactions has also been found to be higher in settings where the group size was of the recommended size or below (Burchinal, Howes and Kontos, 2002[305]; Huntsman, 2008[256]; NICHD Early Child Care Research Network, 2000[306]) as ECEC staff acted in a more caring way and stimulated action and thinking more often. Conversely, where group sizes were larger than recommended, process quality was poorer (Burchinal et al., 2000[307]).

For instance, children in Mexican preschools with higher staff-child ratios scored higher in cognitive development tests than those in preschools with lower staff-child ratios. Schools with higher ratios also had better-trained teachers, better management, and multiple classrooms/playrooms (Myers, 2004[308]). On the other hand, ECEC staff in Mexico who worked in preschools where the staff-child ratio reached 1:30 expressed an inability to provide individualised attention to the children under their care (Yoshikawa et al., 2007[309]).

Similarly, secondary analyses of five European datasets (from England, the Netherlands, Finland, Portugal and Germany) conducted by Slot, Lerkkanen, and Leseman (2015[284]). found further evidence that group size and staff-child ratio were related to higher levels of observed process quality. However, these analyses also suggested that the association between the said structural quality features and process quality was not straightforward. For instance, in Finland, group size was associated with the organisation of the ECEC setting: in preschools located in school settings, larger groups were associated with higher process quality, whereas the opposite was true in community-based settings (Slot, Lerkkanen and Leseman, 2015[284]).

However, while most studies confirm the relationship between group size and staff-child ratio and process quality, some studies have found null effects for staff-child ratio and even a negative effect of small group size (Slot, 2018[201]). In this regard, it might be interesting to explore if there is a threshold for an optimal group size or staff-child ratio that enables high-quality pedagogical practices (as reported by staff), and how such a threshold might interact with other staff- and setting-level factors across countries and jurisdictions. Indeed, the relationship between group size, staff-child ratios, and child outcomes is complex. For instance, a meta-analysis of US studies of preschool children found nonlinear associations between staff-child ratios and child scores in cognitive and achievement tests (Bowne et al., 2017[310]).

Staff-level characteristics that comprise process quality (staff characteristics, initial education, continuing professional development, and working conditions) are also critical for process quality (OECD, 2018b[10]). TALIS Starting Strong 2024 faces the challenge of capturing staff-child ratio in the most consistent way between and within countries and jurisdictions, as it is not always a stable variable (might change during the day, within days, etc).

Analytical potential and indicators

Within content area analyses

Given the evidence relating structural characteristics to process quality and child development outcomes [e.g., OECD (2006[268]); Burchinal, Howes, et al. (2008[238]); Barros and Aguiar (2010[311]); Morrissey (2010[312]); Sabol et al. (2013[304])], TALIS Starting Strong 2024 provides an opportunity to explore the indicators at the three levels: setting, classroom/playroom, and staff.

TALIS Starting Strong 2024 includes measures of multiple structural quality characteristics:

- Setting location and environment of the neighbourhood
- Setting funding and budget constraints
- Resources, including digital technologies
- Physical space
- Setting staff human resources
- Staff turnover
- Staff-child ratio and group size.

Structural conditions of ECEC settings can vary substantially across countries (OECD, 2015a[287]; Pardo and Adlerstein, 2016[174]). It is important to examine what drives this variability. This would elucidate how

different structural features in ECEC settings across different countries and jurisdictions may bundle together or be associated with process quality.

Cross-content area analyses

The previously listed indicators are relevant both as a predictor and an outcome in analyses. The manner by which structural quality characteristics can predict different outcomes has already been discussed in other parts of this document. However, it is also important to note that structural quality characteristics are themselves influenced by other variables, such as ECEC staff preferences (e.g., do better educated staff work in settings with smaller groups and lower child-staff ratio?).

Moreover, given how ecological conceptualisations of ECEC postulate that children's outcomes may be mediated or moderated by neighbourhood characteristics (Minh et al., 2017[292]), TALIS Starting Strong 2024 provides insight into various neighbourhood-level characteristics. Neighbourhood-level characteristics are an external context, which, in conjunction with setting-level contextual factors (such as child and staff characteristics, as well as setting resources) can inform analysis. Finally, since staff turnover is a concern in many countries, understanding its associations with various work-related factors (including professional development, well-being, and resources) will be highly relevant.

Pedagogical and administrative leadership

TALIS Starting Strong considers the ECEC leader to be the person with the most responsibility for the administrative, managerial or pedagogical leadership at the ECEC setting. The leader plays a crucial role in various aspects of ECEC delivery within settings, including but not limited to curriculum, pedagogy, in-service training of staff, and teamwork. Leadership can also extend to aspects of external supports and services (e.g., education, health, and community services).

Facilitating teamwork is critical to high-quality ECEC provision, and the ECEC leader creates the atmosphere for this. Poor leadership can undermine teamwork by creating competition, resentment, and lack of respect among staff. Autonomy and authority to make instructional and pedagogical decisions are also important aspects of teachers' work (Ingersoll and Collins, 2019[313]). In turn, the autonomy and authority that teachers have over instructional and pedagogical decisions depend, at least in part, on how school leaders organise work in their educational setting (Wenner and Campbell, 2017[314]). This also applies to the ECEC context (Havnes, 2018[315]).

Leadership is a complex undertaking (Sims, Waniganayake and Hadley, 2017[316]; Sisson et al., 2021[317]). Since leaders are involved in a multitude of everyday activities within an ECEC setting, the distinction between administrative and pedagogical leadership has received increased interest (Bøe and Hognestad, 2018[318]).

In sum, leadership is key to organisational learning, knowledge development, and staff motivation; the leader is responsible for creating a stimulating environment that supports children's early development, well-being, and learning (Vannebo and Gotvassli, 2014[319]). It is therefore important to collect data on what ECEC setting leadership entails, from the perspective of both leaders and staff.

Theoretical and empirical background

Research on leadership in ECEC has increased dramatically since the development of the first cycle of TALIS Starting Strong [e.g. Pascal et al. (2018[320]); Granrusten et al. (2018[321]); Aubrey (2019[322]); Strehmel et al. (2019[323]); Nicholson et al. (2020[324]); Karaoğlu (2020[325]); Heikkinen et al. (2021[326]); Movahedazarhouligh (2021[327])]. Through this research, effective leadership has been identified as a determinant of quality in ECEC settings (Bloom and Bella, 2005[328]; Gray, 2004[329]). For instance, the Effective Leadership in Early Years (ELEY) study revealed that effective ECEC leadership positively affects children's well-being, as well as their educational, health, and social achievements (Siraj-

Blatchford and Manni, 2007[330]). However, there appear to be cross-country disparities in research activity in this field. In a review of research on this topic, Fonsén and colleagues (2019[331]) found that Finland and the United States have extensive research on ECEC leadership compared to Germany, Singapore, South Africa and Japan where research into ECEC leadership is less developed.

The role of school leaders in improving teaching and learning is increasingly recognised; this is known as 'pedagogical leadership' (Siraj and Hallet, 2013[332]). Pedagogical leadership is focused on the need to develop skills in leading organisational change in early childhood settings (Andrews, 2009[333]). Ideally, pedagogical leadership should form a bridge between research and practice by disseminating new information and shaping agendas (Kagan and Hallmark, 2001[334]). This approach to leadership is based on a passion for learning, and is different from instructional leadership, which relates to the transmission of knowledge rather than the construction, co-construction, or creation of knowledge (Siraj and Hallet, 2013[332]). Among other capabilities, the leaders' ability to reason, problem-solve, evaluate, give constructive feedback, and learn from and with others, is important for their pedagogical leadership (Hallet, 2012[335]).

A study in Finland specified four dimensions that influence the success of pedagogical leadership: i) context; ii) organisational culture; iii) leader's professionalism; and iv) management of substance (Fonsén, 2013[336]). In addition, four factors were identified as facilitating the performance of pedagogical leadership responsibilities: i) adequate resources (e.g., sufficient personnel, ample time to work, reasonable workload); ii) personnel management skills; iii) pedagogical management skills (including knowledge of pedagogy and recent developments in the ECEC sector); and iv) confidence in organisation's senior staff level (including their supervisors, other management, and administration).

However, the role of an ECEC leader is not limited to pedagogical leadership. Administrative leadership is an equally important aspect of ECEC leadership. There is growing demand for strong leadership, given the need for increased accountability, competition, and financial constraints within the ECEC sector (Muijs et al., 2004[337]). Amidst these financial constraints, the quality and pedagogy of ECEC may be affected by how financial resources are spent – that is, if resources are invested into staff professional development, staff recruitment, staff salaries, or buildings and equipment (Wall, Taguma and Litjens, 2015[338]).

Fostering aspiring leaders is also important; Rodd (2013[339]) points out that formal leaders who do not allow others to aspire to leadership are failing in their responsibility to build leadership capacity and plan for succession. As demonstrated by one study in the United States, the relationship between ECEC staff and the setting leader greatly influenced staff motivation for professional growth (Wagner and French, 2010[340]).

Indeed, good management practices are important for increasing staff satisfaction and the quality of ECEC provision (Aubrey, Godfrey and Harris, 2013[341]). Nonetheless, despite the equal importance of administrative leadership, some studies have found that ECEC leaders felt less prepared for administrative responsibilities (such as financial management); they felt better prepared for responsibilities related to being ECEC educators and building relationships with staff (Hayden, 1997[342]; Muijs et al., 2004[337]).

Furthermore, many ECEC staff are unwilling to take on leadership roles for various reasons (Rodd, 2006[343]), including but not limited to poor working conditions, low pay, low status, lack of understanding of employment rights, and the stressful and physically demanding nature of the work itself. Understanding the working conditions of leaders can contribute to improving the quality of ECEC (OECD, 2012b[344]).

Increasing diversity in both the ECEC workforce and in the population of children in ECEC settings is a growing consideration for ECEC leaders. As such, the leaders' role could also include to shift to a multicultural/multilinguistic approach by fostering respectful relationships among staff, adopting a

collaborative style of leadership, setting clear non-negotiable values, and managing conflicts strategically (Derman-Sparks, LeeKeenan and Nimmo, 2015[345]).

Approaches to leadership are shifting. The traditional leadership model that is mostly hierarchical – with a leader who manages, plans, and directs other staff (Rodd, 2013[339]) – is replaced by distributed and collaborative models (Starratt, 2003[346]; Starratt, 2003[346]; Spillane, 2005[347]; Duffy and Marshall, 2007[348]; Fitzgerald and Gunter, 2008[349]; McDowall Clark and Murray, 2012[350]; Rodd, 2013[339]). McDowall Clark and Murray (2012[350]) describe this leadership approach – that is, distributed leadership – as flexible and non-hierarchical, with members at different levels of the organisation being allowed and encouraged to take on leadership responsibilities and to act on challenges and opportunities. Leadership can come from various actors within the organisation (Raelin, 2003[351]).

Distributed leadership is characterised by the following ways of working (Spillane, 2005[347]):

- It involves multiple actors within the setting, including those without formal leadership positions.
- It is interconnected, and non-hierarchical working is encouraged.
- Interaction among individuals is the key factor of leadership practice, not only the actions of individuals.

In addition, Fu (2022[352]) lays out four features of distributed pedagogical leadership: (i) shared awareness and authority; (ii) emotional competence; (iii) collaboration skills; and (iv) communication skills.

There is emerging observational evidence of these distributed forms of leadership promoting high-quality pedagogy in ECEC settings (Denee and Thornton, 2021[353]; Fu, 2022[352]; Bratsch-Hines et al., 2023[354]; Fonsén et al., 2023[355]). In fact, some research even suggests that pedagogical leadership can become ineffective when a leader works alone, highlighting the importance of implementing distributed leadership (Heikka and Waniganayake, 2011[356]; Heikka, Waniganayake and Hujala, 2013[357]; Heikka, 2014[358]).

Nonetheless, Gronn (2008[359]; 2011[360]) has laid out some limitations of distributed leadership. Given these limitations, Bøe and Hognestad (2017[361]) have suggested hybrid leadership as an alternative. In hybrid leadership, both traditional and distributed forms of leadership can figure in ECEC (Bøe and Hognestad, 2017[361]). They emphasise a need to study the intersection of diverse leadership levels and structures. Sisson and colleagues (2021[317]) have also proposed another alternative type of leadership in ECEC, in the form of co-constructed leadership that goes beyond traditional notions of leadership (transformational; transformative; distributed). Instead of promoting a specific early childhood model, they formulate a number of principles of co-constructed leadership based on the entangled connections between listening, dialogue, and agency.

However, it is worth noting that what constitutes effective leadership may vary depending on the cultural context. For instance, in a review of Chinese ECEC research, Bullough and Palaiologou (2020[362]) discuss the cultural embeddedness of leadership, pointing out that school leaders in China exercise relatively higher degrees of authority, given societal norms regarding leadership; this poses difficulties for pre-school leaders in adopting distributed forms of leadership within their settings and in performing leadership responsibilities outside their classroom (p. 58).

The profile of ECEC leaders (in terms of their education, experience, training, and professional development) is also important when discussing effective leadership (as discussed earlier). Recent studies have found an unambiguous connection between leader characteristics and ECEC setting quality, as operationalised by CLASS and ECERS (Perlman et al., 2020[363]). Notwithstanding, ECEC leaders often take up leadership roles without specific training (Aubrey, 2011[364]). For example, in Germany, less than half of centre leaders have been trained for pedagogy-specific leadership tasks

(Bader et al., 2019[365]). Moreover, recent research notes the absence of leadership in ECEC training curricula (Merenda, 2019[366]).

Since research suggests that the quality of ECEC services is strongly related to their leaders' level of education and development, attracting well-trained leaders becomes a key issue in ECEC provision (OECD, 2012b[344]). However, as noted by Douglass (2019[367]), there have been no large-scale studies regarding the characteristics of ECEC leaders and the features of different leadership structures in ECEC. This makes it difficult to map out the current strengths and development needs of ECEC leaders. As such, Douglass (2019[367]) has highlighted a need to produce more research in the following areas: leadership recruitment; preparation and credentials; professional development; compensation and job design; and contextual supports needed by leaders (Douglass, 2019[367]). TALIS Starting Strong 2024 can help generate this information.

Analytical potential and indicators

Within content area analyses

The nature of the leadership responsibilities (i.e., administrative and pedagogical) and approaches used (i.e., hierarchical, distributed, hybrid, or others) across ECEC settings can be examined through the survey. It would also be possible to explore the relationship between leaders' beliefs regarding their role and their reported leadership practices. In addition, questions regarding leadership issues may be presented to both ECEC leaders and staff; this would give a fuller understanding of leadership in the ECEC setting. Furthermore, TALIS Starting Strong 2024 provides an opportunity to explore differences in leadership structures and approaches across countries.

Cross-content area analyses

The evidence discussed previously suggests a link between leadership and the quality of ECEC provision. TALIS Starting Strong can explore this link, for instance, by analysing how aspects of pedagogical and managerial leadership may be related to various aspects of structural quality and process quality in ECEC.

Evidence also indicates an association between leaders' characteristics (e.g., their education, experience, training, and professional development) and abilities and how leaders perform their responsibilities (e.g., management of working condition, resource management, interaction with their followers, giving appraisal and feedback etc.). TALIS Starting Strong can also examine these associations.

The list below enumerates the indicators and dimensions concerned with pedagogical and administrative leadership:

- Time spent on pedagogical and administrative leadership
- Beliefs about pedagogical, administrative and collaborative leadership
- Education background on leadership
- Professional development needs on leadership
- Providing feedback to staff
- Budget constraints to leadership
- External inspection and monitoring
- Setting resources
- Regulation constraints
- Resources for professional development for staff.

Organisational climate and working conditions

Organisational climate refers to staff perceptions of the organisational culture (norms and values, beliefs, attitudes and practices) which distinguishes their organization from other comparable institutions. When collective perceptions, attitudes, beliefs, and values of individuals that are in one way or another involved in the organisational processes of an ECEC setting are combined with the personalities that come together and the leadership that guides them, an organisational climate emerges (Bloom, 2010[368]). Since ECEC setting leaders play a critical role in shaping the attitudes, beliefs, motivations, and relationships of their staff (Strehmel et al., 2019[323]), leadership is thus an important determinant of organisational climate.

The environmental and relational factors described above – which, together, comprise the organisational climate – influence ECEC staff's psychological and emotional well-being (Cumming, 2017[66]). Given the well-established association between staff well-being and process quality (De Schipper et al., 2008[250]; La Paro et al., 2009[138]; Rimm-Kaufman and Hamre, 2010[253]; Grant, Jeon and Buettner, 2019[251]; Jennings, Jeon and Roberts, 2020[252]), organisational climate therefore becomes an important contributor to process quality. Indeed, evidence from the Researching Effective Pedagogy in Early Years (REPEY) study in England suggests that effective practice needs an appropriate working climate, assessment, management, staff development and support for staff work, as well as pedagogical understanding about classroom or playroom activities (OECD, 2010[369]). These factors are also thought to be related to effective leadership, especially that which promotes a team culture in which all members are valued and respected within a climate of trust (Jones and Pound, 2008[370]).

Working conditions constitute a particular dimension of organisational climate and pertain to a set of structural characteristics that can influence the motivation and satisfaction of ECEC staff with their chosen profession. These characteristics include but are not limited to: pay; the organisation of work and work activities; training, skills, and employability; health, safety and well-being; and working time and work-life balance. Since working conditions affect ECEC staff in different ways, working conditions therefore become are related to ECEC setting quality (Lower and Cassidy, 2007[371]; Dennis and O'Connor, 2013[372]; Logan, Cumming and Wong, 2020[373]; Benchekroun, Cameron and Marmot, 2020[374]) and, in turn, to children's development, well-being, and learning outcomes.

Theoretical and empirical background

The close relationship between organisational climate, job satisfaction, role stress, and burnout is well-documented (Pecino et al., 2019[375]). Moreover, job resources, such as autonomy, skill variety, performance feedback, and opportunities for growth, can have a buffering role on the impact of various job demands on burnout (Bakker and Demerouti, 2017[376]). An organisational climate characterised by collaboration, trust, and open communication has also been found to positively correlate with a higher quality of staff-child interactions (Bennett et al., 2003[245]; Sylva et al., 2004b[377]; Bloom and Bella, 2005[328]; Veziroglu-Celik and Yildiz, 2018[378]; Kang, 2020[379]). In fact, a number of studies have found that, compared to staff-child ratios, organisational climate has an even stronger association with the quality of ECEC provision (OECD, 2018b[10]). For these reasons, various aspects of organisational climate have been considered to be important determinants of the quality of ECEC provision (OECD, 2017a[380]).

Working conditions represent one aspect of organisational climate. Factors like workload and working hours, salary, contract type, career progression, and management characteristics influence the motivation and satisfaction of ECEC staff. Better working conditions, such as competitive salaries and good working hours, help retain effective ECEC staff, as well as attract young people to the workforce; these can indirectly influence process quality (Moon and Burbank, 2004[267]; Fenech, Sumsion and Goodfellow, 2006[255]; Huntsman, 2008[256]).

On the other hand, poor working conditions and poor compensation can lead to high turnover rates in the sector, which disrupts continuity of care, professional development efforts, harms overall quality and negatively affects child outcomes (Siraj-Blatchford et al., 2002[381]; Elliott, 2006[382]; Phillips, Austin and Whitebook, 2016[296]). Retention and contract type/employment status are also expected to be determinants of quality in ECEC provision, although a recent study in Ecuador found that contract status did not predict quality in kindergarten classes (Araujo et al., 2016[383]). Notwithstanding, many countries' ECEC policy continues to pay little attention to the quality of work environments in ECEC settings [see, for example: (Cumming, Wong and Logan, 2021[384])].

ECEC staff working hours and how staff spend their working time are both important working conditions as well. Surveys and high-frequency observations within ECEC settings can provide rich detail regarding how ECEC staff and children spend their time. Typical activity categories for how time is spent in ECEC settings include but are not limited to: (a) activities with children; (b) individual planning for preparing activities; (c) teamwork and dialogue with colleagues; (d) participating in ECEC management; (e) general administrative communication and paperwork; (f) communicating with parents; (g) engaging in extracurricular activities; and (h) professional development activities. However, research investigating how ECEC practitioners use their time is still relatively nascent (De Haan, Elbers and Leseman, 2014[385]), especially in comparison to time use research with primary and secondary school teachers (TNS BMRB, 2014[386]).

Nonetheless, some organisations have recently collected comparable data on ECEC practitioners' time use and overall working time. For example, the International Labour Organization (ILO) collected reports on contact time and overall time. The overall distribution of time and contact time in six OECD countries indicated that hours for ECEC staff were relatively long, compared to hours for primary school teachers (ILO, 2012[387]). ECEC staff's contact hours were also long, leaving little remaining time for preparation, professional development, consultation with parents, or other supporting activities (ILO, 2012[387]).

An OECD (2017c[388]) survey across 19 countries reported similar results, with 11 countries reporting that, compared to their primary school counterparts, most pre-primary teachers have less working time on non-teaching tasks and on tasks not involving contact with children. The same study found only six countries reporting an equal time split between teaching and non-teaching tasks for both pre-primary teachers and primary teachers, although this configuration is projected to become increasingly prevalent across countries (OECD, 2017c[388]).

Analytical potential and indicators

Within content area analyses

TALIS Starting Strong provides an opportunity to contribute to the currently limited evidence base regarding organisational climate and working conditions in ECEC settings. Furthermore, the data collected in the survey will allow for an examination of the relationship between different indicators of organisational climate and working conditions (e.g., working hours and stress, organisational climate, and staff engagement).

Cross-national comparisons and analyses can highlight the policy environment in different countries and surface what is needed to help them improve working environments for their ECEC staff. Given the previously discussed association between organisational climate, working conditions, and ECEC setting quality, such efforts are also likely to contribute towards improving ECEC provision across countries.

The indicators and dimensions concerned with ECEC setting climate can be summarised as follows.

- Facilitation of and opportunities for continuous professional development and learning
- Distributed leadership

- Number of working hours
- Contractual stability
- Level of satisfaction with salary
- Time spent on different tasks that are part of job duties
- Sources of work stress linked to organisational processes and structures
- Staff beliefs about priority areas for improving working conditions through targeted spending

Cross-content area analyses

Given evidence linking organisational climate, working conditions, and job satisfaction, TALIS Starting Strong can explore this association. Analyses can also examine the relationship of organisational climate and working conditions with various aspects of structural and process quality mentioned in this document. For instance, the extent to which organisational climate and working conditions relate to staff-child interactions and the classroom/playroom climate would be of interest.

Evidence has also described the important role that ECEC leaders play in shaping the organisational climate. TALIS Starting Strong may explore how various aspects of ECEC setting leadership relate to working conditions and other features of the organisational climate. Finally, examining these dimensions as part of TALIS Starting Strong 2024 provides continuity with the TALIS 2024 survey, thus making it possible to explore similarities and differences in organisational climate and working conditions across different levels of education.

Stakeholder relations

ECEC do not operate in isolation and often interact with stakeholders to enhance children's development, well-being and learning both within and outside the ECEC setting. According to Hooge et al. (2012[389]), there are four groups of educational stakeholders. The primary stakeholders in education are children and families, followed by a second group formed by educators and other staff, which are considered as internal stakeholders. Institutions that allow the operation of the ECEC programmes such as municipalities, supervisors, educational ministry and local educational authorities are considered as vertical stakeholders, the third group. The fourth group of stakeholders refer to all other persons, groups and institutions that are interested in ECEC in one way or another, such as: community members and organizations, other educational providers (schools, universities, nurseries), social and health services and cultural organisations. This last group is considered to be horizontal stakeholders. This last group is considered to be horizontal stakeholders.

Stakeholder relations and co-operation with ECEC services may facilitate children's development, well-being, and learning (Sim et al., 2019[22]), as children benefit from consistent communication between families and ECEC settings, comprehensive services and seamless transitions.. Good stakeholder relations can also help build competent systems that are able to adapt and respond to changing circumstances in the longer term (OECD, 2020a[390]; Pramling Samuelsson, Wagner and Eriksen Ødegaard, 2020[391]).

Theoretical and empirical background

Research shows that ECEC provision benefits from working with other services (such as family support, social services, and health services), engaging with parents and caregivers, and involving the entire range of ECEC stakeholders in a coordinated manner (Barnes et al., 2018[392]; Haslip and Gullo, 2018[182]; Urban, Cardani and Romer, 2018[393]; OECD, 2019f[394]). However, in alignment with the goals of TALIS Starting Strong 2024, this sub-section focuses on the relationship of ECEC settings with two

of the four aforementioned stakeholder groups: families (group 1) and other institutions interested in ECEC, such as social and health services and other educational institutions (group 4).

The first and most important stakeholders to connect with are families (stakeholder group 1). ECEC settings interact with families by promoting and facilitating parental involvement in their children's learning and by engaging them in the setting's life. The OECD (2012a[173]) reports that parental involvement in ECEC can indirectly influence child development, well-being, and learning; similar findings were reported by the Effective Provision of Pre-School Education [EPPE; Siraj-Blatchford et al. (2004[395])]. The relationship between parents and ECEC staff is of particular interest, given observational evidence of a correlation between quality of staff-parent interactions and children's school attendance and socioemotional development; this correlation is even more pronounced in ethnic minority children (Zulauf-McCurdy and Zinsser, 2021[396]; Zulauf-McCurdy and Loomis, 2023[397]).

For instance, ECEC settings that have the same educational aims as parents, and that hold regular reporting and discussions with parents about their children's progress, tend to see favourable socio-cognitive outcomes for children (Epstein, 2001[398]; Siraj-Blatchford et al., 2004[395]). Research has also found that parental involvement in ECEC enhances parents' understanding of appropriate educational practices and hence improves children's literacy outcomes (Cooter et al., 1999[399]; Bryant, Peisner-Feinberg and Miller-Johnson, 2000[400]).

Combining formal and informal strategies to engage and communicate with parents may be beneficial, with informal communication potentially leading to greater parental satisfaction with children's ECEC experiences (Gjerustad et al., 2020[280]). Given the increased diversity in the groups of children ECEC settings will need to adapt the ways they engage with parents. Examples of strategies to better engage parents with immigrant backgrounds include translating materials into different languages spoken by affiliated families, using translators for parent events and employing bilingual staff (Norheim and Moser, 2020[401]).

Digital technologies can also be used to strengthen the relationships between parents and ECEC staff (Lee, 2016[402]). Leaders can use digital technologies (e.g., text messages, social networks), or at least promote their use, to make communication with parents and guardians more efficient, and to ensure that information about their child is transmitted to both parents, in cases where the child's parents may be divorced, for example (Schleicher, 2019[183]).

Co-operation and communication with other educational institutions are important as well. For instance, children's experiences while transitioning within ECEC and onto primary education can be made smoother by improving communication and co-ordination between practitioners across educational levels (Little, Cohen-Vogel and Curran, 2016[403]; Haciibrahimoglu and Kargin, 2017[404]). When ECEC settings and schools work together, they are better able to ensure consistency and continuity in children's education, as well as design programmes that leverage their shared knowledge, skills, needs, capabilities, and experiences (Pianta and Kraft-Sayre, 2003[405]).

However, co-operation between ECEC settings and primary schools remains a policy challenge for many countries. This is an especially important concern, since transitions between levels of education can be stressful for children or even impede their progress, if they are not handled with care (OECD, 2006[268]). Furthermore, research shows that patterns of behaviour and achievement established during the transition period can influence children's future academic and social trajectory (Dockett and Perry, 2004[406]).

ECEC and primary schools may implement different strategies to facilitate children's transitions such as, including but not limited to: (a) staff and teachers exchanging information on children's prior educational experience and development; (b) children and families visiting school facilities before enrolling in a primary school; (c) primary school teachers visiting children at ECEC settings; (d) sharing

activities between ECEC settings and primary schools; and (e) adapting pedagogical practices (Shuey et al., 2019[407]).

For instance, using flexible and adaptive approaches to pedagogy, monitoring, and assessment can help ECEC settings meet the learning needs of children in transition-year groups (OECD, 2019f[394]; Skolverket, 2019[408]). These approaches are also effective for smoothing transitions for children with special educational needs (Nuske et al., 2018[409]). In addition, establishing links between ECEC and school curricula can also help make transitions smoother (Shuey et al., 2019[407]).

Beyond schools, there is a larger shift towards more integrated service delivery, driven by a growing awareness of the advantages of a more coordinated system of care and support for young children and their families (Barnes et al., 2018[392]). Integrating education, primary healthcare, nutrition, children's rights, social cohesion, and equality into a coherent care system is thought to improve service delivery, resourcing, and professional development, which in turn improves services provided to children and their families (Urban, Cardani and Romer, 2018[393]). Indeed, it has been shown that effective engagement with stakeholders beyond education, such as social service and health service providers, are critical to ensuring children's overall well-being (Barnes et al., 2018[392]).

However, creating an integrated system can be difficult. Services relevant to children are spread across education, health, and social welfare systems, which are grounded in different disciplines and often work in silos (Barnes et al., 2018[392]; Urban, Cardani and Romer, 2018[393]). Nevertheless, many countries and states have made efforts to develop integrated early childhood policies, with the goal of offering broad-based, coordinated services for young children and families by way of inter-agency collaboration.

In the US, there are at least 10 states working with the Build Initiative. The Build initiative partners with state authorities to promote a comprehensive early childhood system focused on early learning, family engagement and support, nutrition, health and mental health, and special needs (BUILD Initiative, n.d.[410]). In Latin America, Uruguay (Ministerio de Desarrollo Social, 2018[411]), Colombia (De Cero a Siempre, 2014[412]) and Chile (Saavedra, 2015[413]), serve as examples of strong integrated early childhood policies.

The policies and initiatives described above require ECEC settings to work closely with health care providers and social services to ensure that children receive vaccinations, health check-ups, developmental screening and monitoring, early learning interventions, social subsidies, and services for special needs, among others. It is critical for involved agencies to coordinate and collaborate not only in delivering these services but also in monitoring children's outcomes and trajectories. While beneficial for all children, inter-agency collaboration is especially critical for children who are at risk of being neglected or abused or who are receiving insufficient health care (Barnett and Masse, 2007[414]; Temple and Reynolds, 2007[415]).

Analytical potential and indicators

Within content area analyses

Multiple examples of successful integration across systems have been documented in the literature, and that their success is at least partly contingent on country-specific contexts (Barnes et al., 2018[392]). Given this cross-country variability, TALIS Starting Strong 2024 is well-placed to describe how ECEC settings in different countries work across agencies to support children, as well as explore how country-specific contextual factors may influence these efforts. Furthermore, by obtaining setting-level information, TALIS Starting Strong 2024 provides insight into how ECEC setting leaders facilitate inter-agency collaboration amidst varying policy contexts.

The indicators and dimensions of stakeholder relations are listed below:

- Relationships with parents or guardians

- Relationships with health and social services
- Relationships with other education institutions (transition to other education levels or primary school).

Cross-content area analyses

TALIS Starting Strong 2024 also has the potential to explore the association between stakeholder relations (e.g., parental engagement, outreach to other stakeholders – health and social services-, transition to primary schools) and group characteristics (e.g., socio-economic status or vulnerability- risk level, diversity), and ECEC staff and leader characteristics (e.g., experience, training, leadership). Assessing stakeholder relations provides the basis for understanding how the co-operation of ECEC settings with other stakeholders is linked to ECEC setting characteristics.

Cross-cutting content areas

Diversity, equity, and inclusion in ECEC settings

Diversity, equity, and inclusion are terms often used interchangeably in the context of ECEC, but they represent distinct concepts. A number of recent studies have shed light on the distinctions between these closely related terms (Frost and Goldberg, 2019[416]; Shaeffer, 2019[417]; Liang and Cohrssen, 2020[418]), which are the focus of this cross-cutting content area of TALIS Starting Strong 2024.

Diversity relates to differences in the composition of children, families, and staff working within an ECEC setting. It covers a variety of biological, psychological, sociological, economic, geographical, and cultural characteristics of children and families. These characteristics include but are not limited to special educational needs, social class, neighbourhood, family income, ethnicity, migration status, cultural heritage, linguistic background, indigenous status, and family composition (one parent/two parent families; lesbian, gay, bisexual, transgender, queer, and intersex (LGBTQI) parents (Santon-Chapman, Denning and Roorbach Jamison, 2008[419]; Petriwskyj, 2010[420]). An equitable ECEC system provides equal access to opportunity for all children, regardless of their personal and familial characteristics.

Equity in ECEC can be achieved through configurations at different levels of the system, from larger-scale policy decisions made at the national level, to setting-level interactions between children, peers, and staff, as well as in engagements with the child's immediate community outside ECEC settings (Unterhalter, 2009[421]; Ainscow, 2020[422]).

As outlined in the TALIS 2024 conceptual framework, policy issues that contribute to equity in education include access to: (a) effective teachers; (b) high-quality learning opportunities; (c) adequate learning resources; and (d) diverse peer groups (van Langen, Bosker and Dekkers, 2006[423]; Dupriez and Dumay, 2006[424]; Montt, 2011[425]). The extent to which staff and leaders within educational settings reflects the diversity of the student population can also shape children's development, well-being, and learning (Dekkers, Bosker and Driessen, 2000[426]; Van de Werfhorst and Mijs, 2010[427]), especially in ECEC (Zinsser et al., 2019[428]; Lastikka, 2019[429]; OECD, 2020f[430]).

Inclusion is seen as a basic value and aim of ECEC, but beyond that, inclusion and inclusive systems are also a means to meet the needs of increasingly diverse populations of children and achieve equity (Frost and Goldberg, 2019[416]; Shaeffer, 2019[417]). An inclusive ECEC system caters to the needs of all children, including but not limited to children from ethnolinguistic minority groups, children from non-heteronormative family structures, and children with special learning or healthcare needs. For children with special learning or healthcare needs, inclusion is concerned with the extent to which they can participate in ECEC settings with their typically developing peers (National Academies of Sciences, 2018[431]). For children from ethnic minority groups (e.g. children with an indigenous background),

inclusion involves expanding the extent to which children's different cultures are represented, as well as adapting care, teaching, and leadership practices to empower children from diverse cultures. These inclusive policies and practices can be put in place through concerted action across ECEC staff, settings, and systems.

Indeed, ECEC has the potential to mitigate inequalities of opportunities associated with children's ethnicity, migrant or refugee status, educational needs, location, or family composition (Broekhuizen et al., 2019[432]; OECD, 2019c[177]). There is evidence from both randomised controlled trials and observational studies that ECEC has the potential to improve the life chances of children from disadvantaged families [e.g., Schweinhart & Weikart (1997[433]); Melhuish et al. (2008[434]); Dearing et al. (2009[435]); Camilli et al. (2010[436]); Barnett (2011[437]); Zachrisson & Dearing (2015[438])]. Similar results have been reported by studies regarding the impact of ECEC on indigenous groups: preschool education has a number of long-term benefits for indigenous children, especially when it comes to learning and development (Elek et al., 2020[439]).

However, there are challenges associated with providing equitable access to quality ECEC. Changes in governance structures – such as increased privatisation of ECEC in some countries – can bring challenges in ensuring equitable access and quality (Wright, 2011[440]). There are also notable differences in access to ECEC between urban and rural locations, highlighting geographical inequalities (Temple, 2009[441]; UNICEF, 2020[442]). Moreover, there is a growing body of literature that underscores the need for ECEC staff to have a range of linguistic and cultural competencies to meet the needs of an increasingly diverse population of children (Zinsser et al., 2019[428]).

Despite these challenges, it is acknowledged that all children should be given equitable access to opportunities to promote their development, well-being, and learning (Nxumalo and Adair, 2019[443]). Therefore, it is necessary to take an equity perspective to inform research on factors that affect children's development, well-being, and learning (Iruka, 2020[444]). Several factors have been noted as being critical to achieving equity and promoting diversity in ECEC settings, including but not limited to ECEC staff (Rosenberg, 2020[445]), and national curricula (Melvin, Landsberg and Kagan, 2020[446]).

Theoretical and empirical background

The expansion of ECEC in many countries has led to a rapid increase in the number of children receiving early education. This expansion – alongside changes in the composition of populations due to factors like increased migration – has resulted in ECEC settings serving more culturally, linguistically, and socioeconomically diverse groups of children (Bader et al., 2019[365]; Schleicher, 2019[183]; González-Sancho et al., 2023[447]; Norheim and Moser, 2020[401]). Furthermore, non-heteronormative families (such as LGBTQI families), families built through adoption, and multicultural families have increased in prevalence, with many families characterised by intersectional identities (Frost and Goldberg, 2019[416]).

However, unequal access to quality ECEC remains a pervasive issue. While some countries have implemented targeted policies to boost attendance of children from disadvantaged and minority families in higher-quality ECEC settings (Leseman et al., 2017[448]), socioeconomically disadvantaged children remain disproportionately underrepresented in high-quality settings (Petitclerc et al., 2017[449]; Aguiar and Aguiar, 2020[450]).

This is true regardless of whether countries have market-based and targeted programmes [e.g., in the US: see Fuller et al. (1996[451])] or universal, subsidised access to ECEC (Sibley et al., 2015[452]). Furthermore, evidence from the US suggests, that in some contexts, children from socioeconomically disadvantaged families tend to enrol in settings of lower quality, compared to their more affluent peers (Dowsett, Huston and Imes, 2008[453]; González-Sancho et al., 2023[447]). Research also indicates that ECEC settings serving high-SES communities, and communities with a low proportion of families from minority backgrounds, may be more attractive to highly qualified and effective teachers; this, in turn,

perpetuates the link between socio-economic disadvantage and a lower-quality ECEC provision (Reid et al., 2015[454]).

Studies also suggest that peer group composition influences children's development (Justice et al., 2011[455]; Ribeiro, Zachrisson and Dearing, 2017[456]; Ribeiro and Zachrisson, 2017[457]). The extent to which children in ECEC settings are segregrated by key characteristics such as race, ethnicity, or economic status is another important consideration. For example, research in the US indicates that ECEC programs are more segregated than early primary classrooms in terms of the race composition of the enrolled children (Greenberg and Monarrez, 2019[458]).

Children in such segregated ECEC settings do not experience the potential benefits of more integrated early childhood environments (Reid et al., 2015[454]). For instance, evidence from the Netherlands indicates that socioeconomically disadvantaged children who participated in mixed-background child groups gained more in literacy and reading than those in socioeconomically homogenous, targeted child groups (De Haan et al., 2013[227]). Consequently, children from socio-economically disadvantaged families, and from ethnically diverse families, are at an even greater disadvantage as they often attend settings alongside children from similar backgrounds (Becker and Schober, 2017[459]).

Socio-economic factors also appear to interact with other demographic characteristics. For instance, a US study showed that more affluent schools tended to be more inclusive towards non-heteronormative families (Bishop and Atlas, 2013[460]). Furthermore, the degree to which the ECEC setting climate is accepting of non-heteronormative family structures has been shown by a number of studies to have an impact on children's educational outcomes [e.g., Peter et al. (2016[461]); Liang & Cohrssen (2020[418])]. These findings further highlight the need to design ECEC development, well-being, and learning environments that address the needs of children from a wide range of backgrounds.

It is also important to consider whether the composition of ECEC staff within a setting – especially staff who work directly with children – with respect to the demographic composition of the child group is associated with differences in children's development, well-being, and learning outcomes (Bernhard et al., 1996[462]; Zinsser et al., 2019[428]). For instance, children's families may find it easier to communicate with ECEC staff from similar racial, ethnic, cultural, linguistic, or migrant backgrounds (Archambault, Côté and Raynault, 2019[463]; Lastikka, 2019[429]; Bergroth and Hansell, 2020[464]).

Curricular content and teacher preparation have also been identified as contributing to inclusive ECEC. For instance, using reading materials that depict non-heteronormative characters help develop very young children's gender literacy (Averett, Hegde and Smith, 2017[465]). However, introducing more gender-inclusive instructional practices is not enough; this should be accompanied by corresponding teacher preparation since this would, to an extent, determine whether such changes will succeed.

Unfortunately, this is not always the case. For instance, a US study found that while pre-service ECEC teachers held positive attitudes towards children from non-heteronormative family structures, they felt inadequately prepared to cater to those children's needs (Averett and Hegde, 2012[466]). Furthermore, research on the effectiveness of gender-inclusive pre-service training interventions remains limited. Nonetheless, there is some evidence that such interventions can influence early-career teachers' attitudes towards non-heteronormative children and families, as well as the extent to which they feel prepared to address the said population's needs (Kintner-Duffy et al., 2012[467]).

Policies regarding the inclusion of children with special education needs have also been shifting. The last few decades have seen policies move towards serving typically developing children and children with special educational needs in the same educational settings (National Academies of Sciences, 2018[431]). This shift has also been seen in ECEC settings, with the expectation that staff and leaders will have the knowledge and skills needed to work with children with a wide range of development, well-being, and learning needs. However, while ECEC settings are becoming increasingly diverse, the

availability of relevant support for children, staff, and leaders in ECEC settings is likely to vary across countries and jurisdictions, owing to differences in policy and resourcing.

Given the increasing diversity in ECEC settings, identifying 'diversity gaps' in ECEC provision and exploring how ECEC can promote equity have become pressing research areas (Duncan and Magnuson, 2013[468]; Sim et al., 2019[22]). It is also of high policy relevance to identify across countries and jurisdictions the extent to which children from different backgrounds are clustered in ECEC, and whether and where settings with substantial numbers of minority group children have lower quality than their counterparts. TALIS Starting Strong can contribute further evidence in this area.

Analytical potential and indicators

Diversity and equity was a cross-cutting content area in TALIS Starting Strong 2018 and remains of high relevance for the second cycle. TALIS Starting Strong 2024 retains this focus while also attending to issues of inclusion.

TALIS Starting Strong can examine how pedagogical practices might vary depending on sociodemographic characteristics at the level of children, families, or ECEC settings – hence revealing any disparities. Information regarding the sociodemographic diversity of ECEC staff can also be captured. TALIS Starting Strong can also explore the extent to which pedagogical practices are adapted to increasingly diverse groups of children, and whether ECEC staff needs for professional development and perceived readiness to respond to this diversity and to support individual children are related to the contexts in which they work.

As a cross-country study, TALIS Starting Strong can reveal within- and between-country differences in pedagogical practices, staff attitudes, and professional development related to diversity, equity, and inclusion.

Like TALIS 2018, TALIS Starting Strong 2024 places dual emphasis on socioeconomic equity and multiculturalism. Relevant indicators include:

- Composition of children in the ECEC setting
- Composition of children in a target group
- Staff linguistic background
- Approaches to diversity and inclusion
- Content of professional development and need for further development regarding diversity, equity and inclusion
- Beliefs and attitudes towards diversity, equity and inclusion
- Self-efficacy relating to diversity, equity and inclusion practices.

Approaches to comprehensive and continuous child supports

This content area covers two distinct but interrelated elements. Comprehensive and continuous approaches to education refer to:

i. the support children receive to facilitate their development and learning across a range of areas, including but not limited to creative thinking, socio-emotional skills, cognitive skills, environmental awareness, and physical health; and

ii. seamless transitions.

ECEC serves as children's first formal opportunity to develop critical skills that can support not only their success and engagement in later educational stages but also their feelings of belonging in society. In other words, ECEC is an important early determinant of children's developmental trajectory.

ECEC supports development of transversal skills (e.g., creative thinking, socio-emotional competence). Fostering pro-social attitudes and behaviours also form part of comprehensive ECEC. Hence, issues of social justice – such as climate, health, equality, and diversity – can also figure into the areas of development, well-being, and learning supported by ECEC provision (Wray-Lake and Syvertsen, 2011[469]; Black et al., 2017[470]). Participating in social justice-oriented activities can support children's feelings of connection to their communities and the environment, while also facilitating their transitions through different stages of learning.

Seamless transitions refer to the way in which ECEC is seen as part of an integrated education and care system, with ECEC settings acting in partnership across ECEC stages and onwards to subsequent levels of education (Ucus, Acar and Raikes, 2017[471]). These partnerships start with children's transition from the home environment to ECEC as they first enter a non-parental care environment.

Integrated approaches that aim to leverage expertise and knowledge to promote better outcomes for children are gaining policy traction (Rentzou and Daglas, 2018[472]). This is supported by a wider body of literature that sees ECEC as being more than a means to prepare children for school, instead positioning it as a fundamental mechanism that supports children's development, well-being, and learning and allows them to take full advantage of their potential for the future (Hayes and Filipović, 2018[473]).

Theoretical and empirical background

There is growing consensus regarding the need to view ECEC as part of a holistic system that also encompasses areas traditionally associated with the domains of health and social care, as well as other stages of education (Goren Niron, 2013[474]; Vaknin, 2020[475]). This holistic view contrasts with approaches that see ECEC as operating in isolation from other services and delivered entirely separately from subsequent levels of education [that is, as opposed to being the first stage of a coordinated education system; Urban et al. (2018[393]); Van Laere & Vandenbroeck (2018[476]); OECD (2019f[394])]. Supporters of this more holistic view highlight ECEC's potential to support children's agency in broader societal issues, such as climate and the environment, nutrition, and digital technologies (OECD, 2019c[177]). This can be seen in ECEC curricula in different countries, which now incorporate elements of environmental education and education for sustainable development.

For instance, in Finland, practical guidance on how to create sustainable development programmes at kindergarten level has been made available (Siraj-Blatchford and Pramling-Samuelsson, 2016[477]). In Korea, the national curriculum for three to five-year-olds has been revised to incorporate principles of green education, aiming to promote transformative and systemic thinking in children to create awareness of sustainable development issues (Park et al., 2016). Indeed, the integration of sustainable development with education is gaining prominence in policy, as evidenced by its incorporation in the United Nations Education Sustainable Goals (SDG 4) (UNESCO, 2012[478]; Ødegaard, 2021[479]).

ECEC settings can also teach children about the importance of good nutrition and provide access to, as well opportunities for modelling healthy eating habits, which can prevent later onset of nutrition-related issues like overweight and obesity (OECD, 2017b[480]). This is a pressing issue, given the rising incidence of childhood obesity in some OECD member states (Martin and Karoly, 2016[481]; OECD, 2019a[189]).

Facilitating transitions between ECEC settings and onwards to subsequent levels of education is another vital function of ECEC provision (Schleicher, 2019[183]; Shuey et al., 2019[407]). Successful transitions can support children's development, well-being, and learning over the long term (Schleicher, 2019[183]).

For example, leading up to transition periods (e.g., between ECEC settings, or from ECEC settings to school), staff across settings (or schools) can share knowledge and experiences regarding children and families, as well as provide children and families with more information on the new setting or school. This kind of information-sharing promotes continuity and progression in children's learning and development trajectories (Schleicher, 2019[183]).

Taking a comprehensive approach can help smooth transitions across stages of ECEC (i.e. from ISCED 01 to ISCED 02) and from ECEC to primary education (Jay and Knaus, 2018[482]; OECD, 2019d[483]; Schleicher, 2019[183]; Shuey et al., 2019[407]). For instance, education systems may establish links between the ECEC curriculum and that of subsequent education levels (Schleicher, 2019[183]; Shuey et al., 2019[407]). Using flexible and adaptive monitoring and assessment methods that make it easy for ECEC staff adjust their pedagogy according to children's individual needs can also support children in transition year groups (OECD, 2019f[394]; Skolverket, 2019[408]). However, research suggests that relevant professional development opportunities, which could help support this kind of continuity, communication and monitoring, are more developed for kindergarten/preschool staff than for staff working with children under the age of three, and limited for home-based ECEC staff (Schleicher, 2019[183]). This situation limits the ability of some of these ECEC settings to develop best practice and can impede efforts for different parts of the ECEC system to work together effectively.

In sum, high-quality ECEC requires coordinated efforts both within and across sectors (Rebello Britto, Engle and Super, 2013[484]). To make such coordinated efforts possible, developing a shared, intersectoral understanding and vision of holistic child development is imperative (Black et al., 2017[470]). However, the degree to which different countries and jurisdictions take a comprehensive approach to ECEC varies. TALIS Starting Strong 2024 can help build a picture of current practice within and across countries, allowing for a stronger understanding of how ECEC settings see themselves with respect to the larger child-care system.

Analytical potential and indicators

TALIS Starting Strong 2024 captures aspects of comprehensive and continuous approaches to child supports by exploring staff professional beliefs about children's development, well-being, and learning. For example, the survey asks ECEC staff about their beliefs regarding the importance of developing different competence areas (e.g., self-care skills, motor skills, socioemotional skills) and their use of related practices to help develop those competences.

ECEC staff are also asked about how they assess and monitor children, how they adapt their teaching to children needs, and how this informs transitions of children onto subsequent education levels. Staff and leader relationships with stakeholders outside the ECEC setting (e.g., other education levels or health and social protection services), and information on ECEC setting characteristics, such as setting location, (e.g., co-location with primary schools, or proximity to other services) are also relevant to ensuring seamless transitions for children.

The comprehensive and continuous approaches to child supports and transitions in the survey include:

- Beliefs about promoting holistic development in children (e.g., facilitating pro-social behaviour and self-regulation alongside skills such as literacy and numeracy)
- Beliefs and practices pertaining to the role of ECEC in developing early environmental awareness and responsibility in young children
- Relationships with other stakeholders (e.g., health, social protection and other child-care services)
- Staff use of monitoring and assessment of children to facilitate transitions

Fostering competent ECEC settings

Fostering competent ECEC settings refers to ECEC settings' ability to respond to change in an efficient and effective manner. This means ensuring that settings, leaders, staff, and families can cope with disruptions caused by events like economic and resource instability, health emergencies, and natural disasters. The COVID-19 pandemic may have brought this issue to the fore (Pramling Samuelsson, Wagner and Eriksen Ødegaard, 2020[391]; Mantovani et al., 2021[485]), but disruptions caused by natural disasters have also been found to be detrimental to children's learning (Mutch, 2015[486]). To cope with such disruptions, ECEC staff and leaders should develop relevant competencies through their pre-service training and continuing professional development.

Theoretical and empirical background

Competent ECEC settings are critical for ensuring continuity and quality of provision, particularly in situations that bring about significant upheaval, change, or disruption. This has become acutely relevant, following the COVID-19 pandemic, which prompted the unprecedented, mass closure of private and public educational institutions. Several studies have highlighted the pandemic's adverse impact on children, with those living in poverty being disproportionately affected; this has aggravated inequalities (United Nations, 2020[487]; Pascal et al., 2020[488]).

During the pandemic, ECEC settings had to quickly adapt and respond to new and frequently changing demands related to hygiene, social distancing, and test-and-trace protocols (Atiles et al., 2021[489]). In addition, ECEC practitioners had to adopt new ways of liaising with parents and supporting children, including moving to online education (Pavlenko and Pavlenko, 2020[490]; Atiles et al., 2021[489]).

For instance, educational settings can act as centres for disaster response and recovery and for supporting emotional, post-traumatic recovery (Mutch, 2015[486]; Le Brocque et al., 2017[491]). These kinds of events can happen to countries at all levels of economic development, but their negative impact may be more salient in lower-income countries (Luby and Arthur, 2019[492]). Given the role of ECEC settings in disaster response and recovery, ECEC staff and leaders should receive adequate preparation to fulfil the accompanying responsibilities.

System-wide disruptions can also adversely affect the financial resources and organisational resilience of ECEC settings. For instance, COVID-19 drove many childcare providers out of business due to mandated closures and/or resulting bottlenecks in their funding streams (Vesoulis, 2020[493]; Viner et al., 2020[494]). Similarly, during the Great Recession, national per-pupil spending in US public schools fell by roughly 7 percent, leading to larger income- and race-related achievement gaps (Jackson et al., 2021). As such, the levels of state support that educational settings receive in times of crisis or severe disruption is an important consideration when examining the competence of ECEC settings.

Several factors have been identified as playing a part in the development of competent and resilient ECEC settings. Good stakeholder relations can help build competent settings that are able to adapt and respond to changing circumstances over the long term (OECD, 2020c[495]; Pramling Samuelsson, Wagner and Eriksen Ødegaard, 2020[391]). This includes relationships with parents, caregivers, and practitioners in the wider community (such as health visitors and social workers).

Practitioner training and development to support distance teaching and learning has also been noted as a necessary factor (Atiles et al., 2021[489]). Leaders in ECEC settings could also benefit from developing skills and allotting time towards building financial management strategies that would making their ECEC setting more resilient in the face of disruption (Muijs et al., 2004[337]; Hujala and Eskelinen, 2013[496]; Hujala et al., 2016[497]).

Attracting and retaining qualified staff is also critical to an ECEC setting's ability to cope with adverse circumstances (Logan, Cumming and Wong, 2020[373]; Fenech et al., 2021[498]). Therefore, better

understanding how and the extent to which ECEC leaders work towards ensuring good working conditions for ECEC staff, such as a positive organisational climate and support structures to help staff cope with work-related stress, is a prime concern (OECD, 2020d[499]; OECD, 2020e[500]; Pramling Samuelsson, Wagner and Eriksen Ødegaard, 2020[391]).

Analytical potential and indicators

The evidence presented above suggests that strong pedagogical and administrative leadership is crucial for fostering resilient ECEC systems. TALIS Starting Strong 2024 can shed light on practices that can help build ECEC staff and leaders' capacity to respond to different types of crises. For example, the survey explores how leaders manage setting resources, as well as the types of training received (or needed) by leaders to enable them to effectively manage their settings' resources.

Given the importance of organisational climate and working conditions to ECEC staff's fulfilment of their responsibilities, the survey also asks ECEC staff about their beliefs regarding their setting leadership (including the extent to which they feel supported by their leader), as well as their job satisfaction and sources of work stress. TALIS Starting Strong 2024 also directly asks respondents about their perception of their own ability to react to system disruptions.

The following indicators and dimensions are associated with fostering competent ECEC settings:

- Type and content of professional development
- Staff needs for further professional development
- Organisational climate for staff learning
- Distributed leadership
- Beliefs about leader and pedagogical leadership
- Satisfaction with autonomy, ECEC setting, work environment and working conditions
- Sources of work stress
- Parent or guardian engagement
- Relationships with other stakeholders (e.g., parents or guardians, social services, schools, community settings)
- Opportunities to develop collective competence (in-service)
- Setting resources
- Resources for professional development of ECEC staff
- Autonomy and capacity to respond to changing regulations

Digital technologies to support staff and leaders

The digital revolution has influenced all levels of educational provision, including ECEC. However, while its use in education was more readily accepted in the context of older learners, its implementation in ECEC has been met with more scrutiny and scepticism (Burns and Gottschalk, 2020[294]). Digital technologies are becoming increasingly present, and there is a need to improve understanding of how they can be used productively in the ECEC context (Marklund, 2019[171]; OECD, 2019b[501]; Schleicher, 2019[183]; Burns and Gottschalk, 2020[294]; OECD, 2023[244]).

TALIS Starting Strong recognises that using digital technology in ECEC settings can benefit children. It could increase children's engagement and prepare them for the realities of a digital society (Zabatiero et al., 2018[295]; Schleicher, 2019[183]; OECD, 2019c[177]; Mertala, 2019[502]; Burns and Gottschalk, 2020[294]). However, despite potential benefits, there are risks and concerns. Among these are the digital competencies of ECEC staff and questions regarding the privacy of children, families, and ECEC staff

(Zabatiero et al., 2018[295]; Schleicher, 2019[183]; Burns and Gottschalk, 2020[294]). The COVID-19 pandemic brought on pressure to use digital technologies with younger children in support of distance learning, despite limited knowledge on how to use digital tools for ECEC in a developmentally appropriate manner and the consequences for staff practices and children's learning (Fleer, 2020[503]; Atiles et al., 2021[489]).

While all these elements are relevant to ECEC, the focus of TALIS Starting Strong 2024 is on digital technologies as a resource for ECEC staff and leaders. This includes how technology can facilitate staff and ECEC leaders' initial training and professional development, and its uses for professional practices, such as collaboration (Murcia, Campbell and Aranda, 2018[172]; Zabatiero et al., 2018[295]; Burns and Gottschalk, 2020[294]). The appropriateness of digital technologies for use in delivering ECEC to young children is not covered.

Theoretical and empirical background

The content of professional development and training can shape practitioners' opinions on the use of digital technologies in ECEC settings, which can in turn influence their decision to incorporate (or not incorporate) digital tools in their pedagogical practice (Kerckaert, Vanderlinde and van Braak, 2015[504]). After all, ECEC staff who are more confident about using digital technologies are more likely to use it in their practice (Murcia, Campbell and Aranda, 2018[172]). One Australian study found that although teachers could be hesitant to incorporate digital tools in their pedagogical practices, some did use them for lesson planning, finding teaching resources or observation/reporting purposes (Dwyer, Jones and Rosas, 2019[505]). It is also worth noting that while ECEC practitioners readily use digital devices in their personal life, they are hesitant to use them for purposes of play-based learning (Palaiologou, 2016[506]; Aldhafeeri, Palaiologo and Folorunsho, 2016[507]). These findings highlight the importance of exploring professional beliefs and self-efficacy as they relate to digital technologies (Zabatiero et al., 2018[295]).

A recent study examining how ECEC staff in the US and several Latin American countries coped with disruptions caused by the COVID-19 pandemic identified a lack of preparation for distance teaching as a key challenge (Atiles et al., 2021[489]). Similarly, TALIS Starting Strong 2018 found that ECEC staff were less confident about using digital technologies to support children's learning, compared to other areas of their work (OECD, 2020b[99]). Indeed, despite the benefits of using digital technologies, a lot of ECEC staff feel they lack knowledge on how to use digital technologies to support children's development, well-being, and learning (Murcia, Campbell and Aranda, 2018[172]; Marklund, 2019[171]; OECD, 2020b[99]). Based on these findings, the OECD recommended that training on the effective use of digital technologies in ECEC delivery be included in continuing professional development programmes (OECD, 2020b[99]). Technology-mediated pre-service education and continuing professional development should not only focus on technical aspects, but also on pedagogical elements that can support meaningful staff learning, teaching and quality monitoring of their practice (Fernández-Batanero et al., 2020[508]).

Digital technologies can also facilitate the delivery of professional development. Since digital technologies can facilitate peer-to-peer communication, they can help convene ECEC staff – prompting reflection, collaboration, and knowledge-sharing (Cherrington and Thornton, 2013[509]; Marklund, 2019[171]; Campbell-Barr et al., 2020[510]; OECD, 2023[244]). ECEC staff can also use online self-assessment tools to monitor their own learning needs and progress (Murcia, Campbell and Aranda, 2018[172]). Moreover, digital technologies can facilitate feedback. For example, MyTeachingPartner is a video-based professional development coaching programme; ECEC staff receive individual feedback on video-recordings of their practice that they create and upload on their own time (Gregory et al., 2017[511]; Ansari and Pianta, 2018[512]).

Digital technologies can also support ECEC staff collaboration. For instance, online platforms can enable ECEC professionals to connect with others within and across ECEC settings to establish

communities of practice (Mertala, 2019[502]; Marklund, 2019[171]; Dwyer, Jones and Rosas, 2019[505]; OECD, 2023[244]). Furthermore, digital technology can facilitate communication between staff and children's parents or guardians (Lee, 2016[402]). Leaders can use or promote the use of technology, such as text messages or social networks, to make sure that parents and guardians can efficiently access information and news about the ECEC setting and their child, and to ensure that information is transmitted to both parents, for example, in cases of divorce (Schleicher, 2019[183]; Oke, Butler and O'Neill, 2021[513]; OECD, 2023[244]).

Analytical potential and indicators

As discussed earlier, the content of initial training and continuing professional development can influence ECEC staff and leaders' confidence in using digital technology and, subsequently, their decision to use (or not use) technology in their practice. Hence, TALIS Starting Strong 2024 asks ECEC staff and leaders about: (a) whether they had received training content around the use of digital technologies to facilitate their work with children; (b) how confident they feel about using digital technologies; (c) barriers to professional development related to digital technologies. The survey can also capture information on whether online digital tools are used to engage with parents or guardians.

The following is a summary of the indicators and dimensions concerned with use of technology in ECEC that are explored in the survey:

- Initial education received regarding the use of digital technologies
- Continuing professional development received regarding the use of digital technologies
- Self-efficacy in using digital technologies to support work with children
- Barriers to participating in professional development related to digital technologies
- Use of digital technologies for outreach to parents or guardians
- Need for investment in digital technology infrastructure.

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Notes

[1] Yada and colleagues, studied four sources that contribute to self-efficacy as defined by Bandura (1997), namely: mastery experience (experience of success or failure in the past), vicarious experience (self-efficacy drawn from comparing one's abilities to others), verbal persuasion (self-efficacy drawn from external evaluative feedback), and affective state (self-efficacy influenced by emotional well-being).

[2] The ECERS-R is the revised Early Childhood Environmental Rating Scale, with sub-scales for space and furnishings, personal care routines, language reasoning, activities, interactions, programme structure, and parents and staff.

[3] Micro-credentials refer to sub-units of a credential or credentials that are larger in scope than a single course but do not confer a full traditional formal qualification, such as a bachelor's or master's degree. A micro-master's programme is one example of a micro-credential.

5 Design of TALIS Starting Strong 2024

The populations covered by TALIS Starting Strong 2024 encompass centre-based ISCED level 02 staff and all staff working with children under the age of 3 and are as comparable as possible across participating countries and jurisdictions. All early childhood educators, pre-primary teachers, kindergarten teachers, preschool teachers, and auxiliary staff taking part in pedagogical work within registered early childhood education and care settings, and their leaders, are included.

Target populations and sampling

TALIS Starting Strong 2024 investigates two target populations:

- Staff and leaders working in pre-primary ECEC centres (ISCED level 02).
- Staff and leaders working in settings providing ECEC services for children under the age of 3.

Although the core focus of TALIS Starting Strong 2024 is ISCED level 02, participating countries and jurisdictions can choose to include the population of registered provision for children under the age of 3 years. TALIS Starting 2024 uses the same version of the leader questionnaire, staff questionnaire, and combined questionnaire for both target populations. A series of consultations with ECEC experts were conducted to ensure the applicability of all questionnaires to both ISCED level 02 ECEC centres and ECEC settings serving children under the age of three, as well as ECEC settings serving both target populations.

Nevertheless, to acknowledge contextual differences across ECEC centres and settings, the combined questionnaire, which consists of questions taken from the staff questionnaire and the leader questionnaire, has two versions. One version was administered to small centres (with only one staff person) or home-based settings while the other was used for leaders who also perform staff duties.

Defining ECEC settings in TALIS Starting Strong 2024

ECEC settings are defined as officially registered settings that provide ECEC programmes (i.e. formal education and care) for young children from birth up to entry into primary education – also defined as ISCED level 0. To be classified as an ‘ECEC setting’, a setting must provide educational activities for at least 2 hours per day and 100 days per year.

ISCED level 02 settings provide education and care designed to support early development in preparation for participation in school and society, and usually accommodate children from age 3 to the start of primary education. ISCED level 02 is also often referred to as ‘pre-primary education’.

The other target population is ECEC settings that: 1) accommodate children younger than 3 years of age; and 2) implement early childhood programmes that contribute to the well-being, development and learning of children in this age group. Those can be based in a traditional centre (e.g., a kindergarten or a crèche)

or in someone's home. Countries need not formally apply the ISCED level 01 definition to settings to participate in this module.

Home-based settings were considered in scope when sampling services for children under the age of 3, as long as they are officially registered within the country's early childhood education and care system and under the country's or relevant jurisdiction's regulations. In contrast, all home-based settings were considered out of scope when sampling ISCED level 02 ECEC centres.

ECEC settings entirely devoted to children with special education needs are considered out of scope for the survey. However, staff members working with children with special education needs in regular ECEC settings are in scope.

ECEC settings that accommodate both children in ISCED level 02 and children under the age of 3 (i.e. mixed age or integrated settings) belong to both target populations.

Defining ECEC staff and leaders in TALIS Starting Strong 2024

The target population of ECEC staff comprises all persons working regularly in a pedagogical way with children within registered ECEC settings. ECEC staff members are defined as persons who, as part of their regular duties in the target setting, provide learning opportunities or care.

ECEC setting leaders are defined as the person with the most responsibility for the administrative, managerial, and/or pedagogical leadership in their ECEC setting. In some ECEC settings, the leader might also spend part of their time working with children.

Staff members are in scope regardless of the number of hours they work with children from the respective target populations. Therefore, staff members working with children of both age groups belong de facto to both target populations.

Leaders who also fulfil the definition of a staff member are included in both the staff and leader populations.

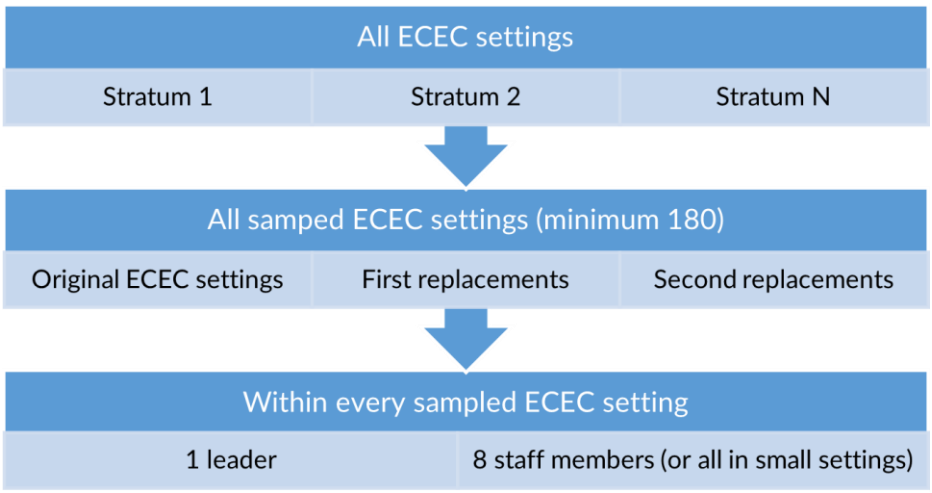
Substitute and other emergency staff, as well as staff on long-term leave, are not part of the target populations.

Overview of the sample design

The objective of the survey is to obtain unbiased estimates of the parameters to be calculated during the analysis process for each of the two target populations. A suitable sampling strategy has been chosen to reflect this objective (see Figure 5.1 below). The samples must yield sufficient data and suitable indicators to allow for meaningful interpretations of the study results. The samples should also be sufficiently broad so that labour market and system-wide indicators could be used to draw valid inferences for policy analysis. The resulting data should contain sufficient detail so that ECEC setting-level data and indicators can policy discussion. This is required for both the staff and leader questionnaires, and for each target population.

The samples for the main survey consist of a minimum of 180 ECEC settings per participating country/economy and target population. In ECEC settings with eight or more eligible staff members, at least eight staff members are selected; in settings with fewer eligible staff members, all of them are included in the sample. The leader is selected in each setting, in addition to these staff members.

Figure 5.1. Overview of sampling design



If countries and jurisdictions, for various reasons, are prevented from surveying all ECEC staff, they are allowed to exclude ECEC settings. However, a 5% threshold is adopted as an upper limit for exclusions within each target population.

The sampling plan is a two-stage design, with ECEC settings as primary sampling units and staff as secondary sampling units. Depending on each country's unique situation, ECEC settings are selected with a systematic random sampling approach, with probability proportional to size if an appropriate measure of size exists.

The expected minimum participation rates are set at 75% of ECEC settings and 75% of staff from participating ECEC settings. An ECEC setting will be deemed to have participated if at least half of its sampled staff members complete the staff questionnaire. These requirements are the same as in the TALIS Starting Strong 2018 cycle.

Overview of survey instruments and their development

The TALIS Starting Strong instruments cover the themes presented in Figure 1 and discussed in detail in Section III. The TALIS Starting Strong 2024 questionnaires are based on:

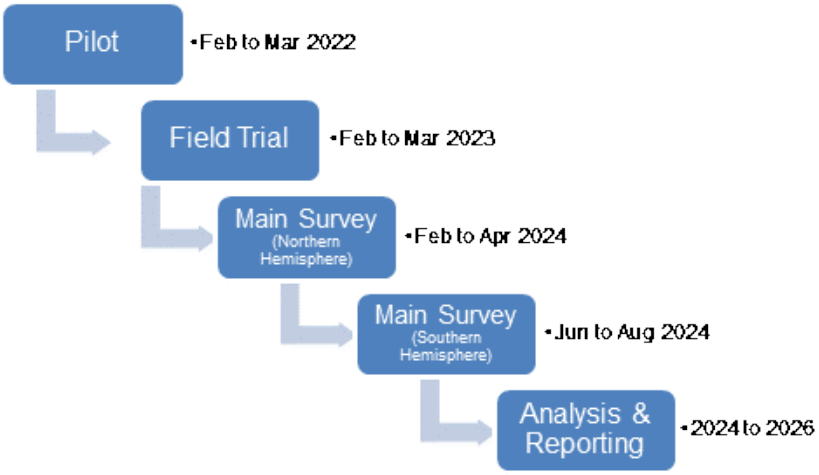
- A review of the proposed content areas and indicators for the survey to ensure that the variables, indicators, and content areas provide a logical basis for instrument development, giving consideration to completeness and coherence.
- A review of the catalogue of existing questions compiled from the TALIS Starting Strong 2018 and the TALIS 2013 and TALIS 2018 surveys, as well as other national and international studies, in order to assess their suitability for measuring constructs within the TALIS Starting Strong 2024 conceptual framework and to identify other possible sources of exemplary questions.
- Newly developed questions for the development of the identified indicators and research questions.
- Stakeholder feedback from the Informal Group on TALIS Starting Strong 2024 and the ECEC Network.
- A thorough review and revision of the questionnaires based on the pilot and field trial results.

Overview of survey operations

As with many other large-scale international comparative surveys (e.g., TALIS), TALIS Starting Strong 2024 includes three consecutive study phases: a pilot study, a field trial and the main survey (see Figure 5.2 below). To validate the quality and content of the survey instruments for the ECEC context, especially for newly developed and modified items, a pilot study was conducted across many participating countries and jurisdictions.

Based on the positive experiences and results from TALIS 2018 and TALIS Starting Strong 2018, a qualitative approach was also selected for the TALIS Starting Strong 2024 pilot. Following this approach, feedback and comments from ECEC staff members and leaders of both TALIS Starting Strong 2024 target populations (ISCED Level 02 and settings for children under the age of 3) were captured through guided focus group discussions carried out in participating countries and jurisdictions. Field trial instruments were then prepared based on the results and feedback collected in the pilot study.

Figure 5.2. General timeline of TALIS Starting Strong 2024



The objective of the field trial was to test the survey instruments and operational procedures in all participating countries and jurisdictions in preparation for the main survey. For the field trial, the minimum sample size per country or jurisdiction was set to 30 sampled ECEC settings per country, ideally providing data for 30 leaders and 240 ECEC staff members per country and target population (if all respondents completed their questionnaires). Each participating country or jurisdiction was required to implement the field trial according to standardised procedures before the main survey. Technical standards and corresponding quality control measures were developed for the TALIS 2024 programme, to ensure that TALIS Starting Strong is implemented in ways that will yield comparable data across participating countries and jurisdictions and across levels of education.

The main survey data collection was conducted in two waves. A minimum sample of 1,200 ECEC staff members and their leaders working in at least 180 sampled ECEC settings were selected for each target population (ISCED Level 02 and settings for children under the age of 3). In consultation with the international consortium, national centres prepared individualised survey schedules within the given international timeline. The field trial and main survey were carried out according to the technical standards, manuals, and guidelines to ensure high response rates and high-quality data.

Given the positive experience and number of participants who completed the TALIS 2018 and TALIS Starting Strong 2018 questionnaires online, this delivery mode is defined as the main mode of

questionnaire administration in TALIS Starting Strong 2024. Online questionnaire administration offers a number of operational benefits, including a significant reduction of paper handling and data capture costs for national centres. Online data collection also improves the administration of questionnaires as it is more flexible, adaptive, and efficient. For example, filter questions can guide respondents through the questionnaire, inconsistencies in responses can be checked in real time, and no manual data entry needs to be planned and organised. However, paper questionnaires will be available as needed to ensure all selected staff members can access to the survey.

All questionnaires were made available to participating countries and jurisdictions in English. For the field trial and the main survey, questionnaires were adapted and translated at the national centres and submitted for international translation verification using the IEA Study Expert. National centres were trained in adapting and translating the instruments into their local language(s) in electronic form, and in how to deliver the questionnaires using the IEA Study Expert. During main survey data collection, the Data Monitor provided national centres with the opportunity to monitor the questionnaire return status and the status of questionnaire completion at any time, allowing them to keep track of response rates.

TALIS Starting Strong 2024 requires detailed attention to all aspects of survey quality and quality control measures. Quality observation measures were implemented in the following areas of activities:

- technical standards, operational manuals, guidelines
- sampling plan implementation
- instrument preparation, including national adaptations, translation and translation verification, and layout verification
- survey implementation and data collection
- international and national quality observation monitoring of data collection
- data entry, processing and products
- weighting
- adjudication
- analysis and report production.

Standards, operational manuals, and guidelines define the rules that national centres are asked to follow when preparing and implementing TALIS Starting Strong 2024. Special attention was given to the training of national project managers (NPMs) and their staff to enable them to fulfil all required tasks and activities to the highest quality possible.

In international comparative surveys like TALIS Starting Strong 2024, it is of utmost importance to apply instruments identical in meaning, wording, and style in all participating countries and jurisdictions and their languages. Several quality control steps were developed to ensure comparability of the instruments. First, mandatory and optional national adaptations were prepared by the national centres and approved by the international research consortium. Second, instruments were translated by national centres following international standards and procedures defined in the Survey Operations Procedures (SOP) units, technical standards, and manuals. Third, all translated instruments went through a translation verification procedure, which flagged any deviation of the translated instruments from the source versions. Intensive communication and guidance during the translation/verification process were put in place to guarantee high-quality survey instruments. All adaptations and acceptable deviations from the source versions of the questionnaires were documented and considered during data processing and adjudication.

International quality observation monitoring was also a central part of the quality control measures of TALIS Starting Strong 2024. An International Quality Observation Programme was implemented, and international quality observers (IQOs) from each participating country were trained to conduct the programme. In addition, a National Quality Observation Manual, as well as training and guidelines for NPMs, were provided to prepare and implement national quality observation measures.

Following data collection, NPMs were required to comply with the standards and guidelines described in the SOPs, as well as attend a data management training.

Data submission by the national centres were monitored closely by the international consortium to verify the completeness and quality of the data received.

A fully documented international database containing ECEC setting-related responses, together with the survey weights to allow published estimates to be reproduced and original analyses to be conducted, will be made available free of charge. Additionally, a technical report documenting the methods and procedures used in developing and implementing TALIS Starting Strong 2024 and analysis guidelines will be prepared and published.

Annex A. Analogous content areas in TALIS Starting Strong 2024 and TALIS 2024

Table A.1. Analogous content areas in TALIS Starting Strong 2024 and TALIS 2024

TALIS Starting Strong 2024 content areas	TALIS 2024 content areas
Process quality	• Teaching practices • Professional practices
Monitoring children's development, well-being and learning	
Professional beliefs about children's development, well-being and learning	
Stakeholder relations	
Self-efficacy	• Teacher self-efficacy
Staff and leader demographic and education background	• Teacher characteristics • School and school leader characteristics • Initial teacher education
Professional development	• Continuing professional learning
Pedagogical and administrative leadership	• School leadership
Structural quality	• School climate • Job satisfaction, occupational well-being, and perceived value of teaching
Organisational climate and working conditions	
Well-being	
Cross-cutting content areas[1]	
Diversity, equity, and inclusion in ECEC settings	• Diversity and equity
Approaches to comprehensive/continuous child supports	• Social and emotional learning[2] • Environmental sustainability education[3]
Digital technologies to support leaders and staff	• Educational use of technology
Fostering competent ECEC settings	Not formally labelled a cross-cutting content area but embedded across different questions in TALIS 2024

Notes

[1] It is important to note that, while there may not always be one-to-one correspondence between the so-labelled cross-cutting content areas in TALIS Starting Strong 2024 and TALIS 2024, there is significant overlap in the two surveys' priority areas.

[2] While social and emotional learning is not officially named as a "cross-cutting content area" in TALIS Starting Strong 2024, social and emotional learning is embedded across different content areas. For example, supporting emotional development and well-being and supporting pro-social behaviour represent two of the eight sub-domains of process quality, as it is operationalised in TALIS Starting Strong 2024. In addition, approaches to comprehensive/continuous child supports include (but are not limited to) beliefs about and practices that contribute to children's holistic development, including elements of social and emotional learning, such as self-regulation and pro-social behaviour.

[3] Environmental sustainability education appears to a limited extent in TALIS Starting Strong 2024, with a few questions asking about approaches used by ECEC practitioners to develop children's early environmental awareness.

The OECD Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) is the first international survey that focuses on the early childhood education and care (ECEC) workforce. The TALIS Starting Strong 2024 conceptual framework builds on foundations established in 2018 and links the survey's areas of focus and policy questions to existing knowledge.

Key themes in the framework include staff practices with children, staff and leader education, professional development, well-being and job satisfaction, as well as terms of employment and intent to stay in the profession. It also addresses themes related to diversity in ECEC settings, providing comprehensive child supports, fostering competent settings, and the use of digital technologies to support staff and leaders, all in the context of setting resources and leadership and structural features.

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