STRENGTHENING THE QUALITY ASSURANCE AND MONITORING CAPACITY OF PRESCHOOLS IN KAZAKHSTAN
STRENGTHENING THE QUALITY ASSURANCE AND MONITORING CAPACITY OF PRESCHOOLS IN KAZAKHSTAN

Bella Baghdasaryan, Ghalia Ghawi and Benjamin Blevins – UNICEF Innocenti – Global Office of Research and Foresight

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# ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ECE</td>
<td>Early Childhood Education</td>
</tr>
<tr>
<td>ECDI</td>
<td>Early Childhood Development Institute</td>
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<tr>
<td>ECEC</td>
<td>Early Childhood Education and Care</td>
</tr>
<tr>
<td>ECERS</td>
<td>Early Childhood Environment Rating Scale</td>
</tr>
<tr>
<td>HPE</td>
<td>Higher Preschool Education</td>
</tr>
<tr>
<td>IAC</td>
<td>Information and Analytical Center</td>
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<tr>
<td>LSA</td>
<td>Learning Support Assistant</td>
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<tr>
<td>MoE</td>
<td>Ministry of Education</td>
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<tr>
<td>NEDB</td>
<td>National Education Database</td>
</tr>
<tr>
<td>NYC</td>
<td>New York City</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>QA</td>
<td>Quality Assurance</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
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UNICEF IN KAZAKHSTAN

UNICEF in Kazakhstan works with the Ministry of Education and other line ministries under the Country Programme for 2021-2025 between the Government of Kazakhstan and UNICEF. One of the main goals of the education programme component is to support the development and review of quality assurance criteria/self-assessment guidelines for public and private preschools, and of early care and intervention services. The programme also supports the development of gender-responsive parenting programmes and advocate for the development of training modules for psychological-medical-pedagogical consultations’ members and pre-schools on the child-centered, human rights-based approach and social model of disability. The strategies for collaboration with the key partners include evidence generation, capacity development, social norms and behavioral change, monitoring and evaluation, innovative solutions. The initial steps in providing UNICEF technical support to improve the planning and monitoring system of quality preschool education were initiated in 2021 with the analysis, development and testing of self-assessment tools and a score card showing the gaps, but also providing the evidence on a new set of indicators that could inform the sector development in the long run and become a part of the Education management information system (EMIS).

UNICEF INNOCENTI – GLOBAL OFFICE OF RESEARCH AND FORESIGHT

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This report was developed by UNICEF Innocenti – Global Office of Research and Foresight and UNICEF Kazakhstan. Ghalia Ghawi led the report writing and coordination of the research team comprising Bella Baghdasaryan, Benjamin Blevins and Sharon Loza. Overall project leadership and framing was provided by Dita Nugroho and Ghalia Ghawi, the manual development and trial of the self-assessment module was conducted by Dita Nugroho, Sharon Loza, Bella Baghdasaryan and Ghalia Ghawi. Data analysis was carried out by Benjamin Blevins, Bella Baghdasaryan and Ghalia Ghawi.

This paper has been greatly enriched by the valuable contributions of several colleagues. The authors wish to express their gratitude to Matt Brossard and Vanika Grover (UNICEF Innocenti – Global Office of Research and Foresight), Tatiana Aderkhina, Zauresh Dikhanbayeva and Violetta Krasnikova (UNICEF Kazakhstan), as well as to Miraim Atanayeva and Dinara Kakisheva (Information Analytical Centre – Kazakhstan), for their input and support. The authors are also grateful for the thoughtful input and detailed feedback from Dr. Filiz Polat (Nazarbayev University), Nicholas Dowdall (the LEGO Foundation) and Vidur Chopra (UNICEF Europe and Central Asia Regional Office) as reviewers.

Correspondence should be addressed to: UNICEF Kazakhstan, Block 1, 10 Beibitshilik Street, Astana Z10K8H4, Republic of Kazakhstan +7 (7172) 32-28-78

Cover photo: @UNICEFKazakhstan/2021/ValeriyKaliev. The children are having a break to warm up during the paper craft class. April 15, 2021, “Romashka” Nursery and Kindergarten, Zelenyi Bor village, Burabay district, Akmola region, Kazakhstan.

Graphic design: TOO "QalauQommunication", Subbotina V.
REPORT SUMMARY

The Ministry of Education (MoE) in Kazakhstan is committed to improving the quality of early childhood education and care services in the country. One of its key priorities is to enhance the ability of preschools to assess their own quality in a standardized manner.

The Kazakhstan MoE Information Analytical Center (IAC), Early Childhood Development Institute (ECDI), UNICEF Kazakhstan and UNICEF Innocenti – Global Office of Research and Foresight have partnered to develop a Preschool Quality Self-Assessment Module (referred to as the “module” for short) to achieve this. The module’s goal was to provide data on key quality assessment, monitoring and planning indicators, which should supplement the ministry’s National Education Database (NEDB) containing administrative information on all preschools in Kazakhstan. As such, the module focused on quality-related indicators, which fell into four categories:

1. Staffing
2. Pedagogy
3. Family engagement
4. Environment

The quality self-assessment module was first validated with a group of 42 experts, whose inputs were used to refine and update it. An online version of the module was then created to pilot the self-assessment process, in addition to the newly developed indicators. A sample of 351 preschools across five of the 17 regions in Kazakhstan was then identified for piloting the tool. The preschool principal or administrator was then required to enter information on the online module. Of the 351 preschools selected for the quantitative pilot, a smaller sample (n=19) was selected to participate in cognitive interviews, to provide their feedback on the module and identify issues with the indicators, the module in general and the data collection process.

Analysis of the cognitive interviews and pilot data revealed a high degree of alignment in responses to many of the indicators, which suggests that participants understood the indicators in the manner that was intended, validating many of them. However, some indicators were not well understood, which was evidenced in erroneous responses in the online module, missing data and errors in responses to some of the cognitive interview questions. To address these issues, the problematic indicators were improved and revised in an updated version of the module, which will be used in the program scale-up. Furthermore, it is important to note that the module did not include exhaustive indicators or items to assess the various quality areas. While this approach was adopted to avoid making the module too long and time-consuming, it may have limited its overall internal consistency. Future iterations of the module may need additional indicators to ensure greater reliability for each set of indicators and the module as a whole. However, this will make the module longer and more difficult for administrators to complete, increasing the risk of respondent fatigue and less accurate data.

The authors made several recommendations to ensure that the module is used effectively and efficiently in pre-primary education planning in Kazakhstan. Firstly, the module needs to be integrated with the NEDB, which would help consolidate data across the module and NEDB and enable quality indicators to be explored against other administrative indicators, as needed. However, before this step is taken, we recommend that the quality indicators updated following this pilot study are tested with a small group of participants to ensure clarity and comprehension.

Another key recommendation is for the MoE to set benchmarks and standards around the proposed...
manual indicators. Any such benchmarks could be based on standards or practices from the particular region, such as setting specific time requirements for free play based on child age or specifying the maximum child to educator ratios per child age group. This would enable schools to identify areas in which they are meeting expected quality standards and which areas they may be underperforming in, thus allowing for the required planning, budgeting, and solution implementation for higher quality services.

Finally, while the module provides valuable data on key quality indicators, it should be viewed as an indicative measure of quality, rather than an absolute one. To gain a more nuanced view of the quality of preschool settings, we recommend that the module data be supplemented with additional data collected through observations or discussions with preschool administrators. By following these recommendations, the MoE can improve the quality of early childhood education and care services effectively in the country.
A strong case exists for developing and strengthening early childhood education and care (ECEC) systems worldwide. Quality ECEC equips children with the cognitive and socioemotional skills needed to excel in life (Cunha & Heckman, 2007). Investing in ECEC has been shown to bring a substantial return on investment, both for individuals and society as a whole. Studies have indicated that every dollar invested in pre-primary education can generate up to nine dollars in benefits for society (Muroga et al., 2020). Sustainable Development Goals also stipulated the need to provide all children with access to high quality ECEC; “By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education” (UN, 2015).

The Kazakhstan Government has made significant strides in recent years in expanding ECEC access through public-private partnerships and increased public ECEC spending. The 1999 Education Law recognizes ECEC as the first education system level in Kazakhstan. The Government Resolution “On Issues of Children’s Compulsory Pre-primary Preparation” from November 1999 provides children aged 5-6 with the right to compulsory and free ECEC. The MoE also launched compulsory education standards in 2018 outlining expected ECEC outcomes. As of September 2022, Kazakhstan had 10,857 preschool organizations providing early childhood education and care to more than 900,000 children (Figure 1), most of which were public (52%). However, there has been a sharp increase in the number of private preschool organizations over the last decade (NEDB, 2021-2022).

The MoE is currently implementing a number of reforms in multiple areas to secure ECEC quality, such as state attestation and certification processes; preschool licensing, which is essential given that for many years, preschools in Kazakhstan were not required to license their operation; reviewing indicators such as preschool educator-to-child ratios; qualification requirements for educators; waiting list systems1, which were finetuned to better tailor service delivery to family needs.

Figure 1: ECEC in Kazakhstan

1 The current preschool education system in Kazakhstan requires all children to be registered in waiting lists by region, city or town, after which they will receive a referral to a preschool that has space available
2 Pedagogical staff includes directors and deputy directors, educators and other pedagogical staff, such as teaching assistants.
A government resolution in March 2021 called for the prioritization of developing ECEC through improvements to quality indicators, which the MoE aims to do by strengthening preschool capacity to measure the quality of their setting and assess their engagement with parents and the community. These reform efforts are important as quality assurance frameworks and systems are essential for overseeing high-quality public and private ECEC programs. Quality assurance is defined as the process of monitoring preschool settings to assess and ensure the quality of children’s experiences (UNICEF, 2019, p.6). Government-established quality standards can be instrumental in monitoring quality improvements for programs. In addition to establishing quality standards, effective monitoring systems are critical to ensuring preschool programs meet quality benchmarks (UNICEF, 2019; Burchinal, 2018).

As such, the MoE Information Analytical Center (IAC), Early Childhood Development Institute (ECDI), UNICEF Innocenti – Global Office of Research and Foresight and UNICEF Kazakhstan partnered to develop a Preschool Self-Assessment Module for pre-primary programs, to support preschools in their continuous quality improvement efforts and to support the MoE in better understanding and monitoring preschool quality on a national level.

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The Early Childhood Development Institute (ECDI) launched a three-year program to develop a quality assurance framework for early childhood education based on international quality assurance research.
Preschool quality and existing indicators

The quality of early learning environments has a strong influence on children's development (Fernald et al., 2017; Engle et al., 2011; Yoshikawa et al., 2013). Early learning experiences in preschool have a direct impact on children's development, growth, and learning. At the same time, high-quality early childhood programs have demonstrated stronger positive effects on child outcomes, while low-quality programs have none to deleterious effects on children (OECD 2018). Attending high-quality ECEC programs has been shown to improve short- and long-term outcomes related to children's school performance, attendance, health, well-being, and prosperity (Berlinski, Galiani & Gertler 2009; Nores & Barnett, 2010; Shonkoff & Phillips, 2000; Yoshikawa & Kabay, 2015). Evaluating preschool program quality helps ensure that young children receive the high-quality early learning experiences necessary to support optimal development and learning during early childhood. In addition, preschool education quality assessments can support the government in its planning and provide it with information on the aspects of preschool education that need the most investment.

Preschool quality factors are commonly categorized as either structure or process related (Figure 2). Structural quality includes the location of preschool organizations (i.e., urban vs. rural), organization type (i.e., public vs. private), child-staff ratios, classroom/group size, staff training and education, the availability of materials, and educator salaries. Process quality refers to the experiential factors children experience at their preschool, such as staff-child and peer-to-peer interaction; teaching and communication styles; flexibility and responsiveness to child and classroom needs that occur during daily classroom activities and the type and content of instruction offered (OECD 2018, Fernald et al., 2017). Evaluating both structural and process quality when exploring the quality of ECEC settings is essential. As such, process and structural quality indicators were used in the Preschool Quality Self-Assessment Module developed for this project.

Figure 2: Indicators and relationships between ECEC structural quality, process quality and child development/learning

The details of several structural quality indicators are available in the National Education Database (NEDB), which is managed by the MoE IAC. All preschools, public and private, must submit specific indicator details to the NEDB online. According to the Minister of Education Normative Act #459, preschool administrators should update the system within three days of any changes to data.
The NEDB currently captures the following preschool data:

1. Registration information: basic registration number and operational model information, and preschool organization contact details
2. Educational process: instruction language, the number of groups, attendance, and the number of extracurricular clubs
3. Additional information: financing
4. Personnel details: each employee’s position, status, qualification, years of experience and contact details
5. Material and technical details: information on building area and facilities
6. Basic education center information: provision of services through the e-gov portal, speech center and counseling center for parents
7. Person responsible for certification: name, position and contact details of the person entering the data
8. Student profiles: background, languages spoken, and the additional needs of each child enrolled.

NEDB data is predominantly generated from responses to closed-ended questions, resulting in categorical variables, or from questions with set possible responses. They require minimal to no subjectivity, in that they request objective or factual information (such as the number of staff, children and resources), as opposed to asking for respondents’ perception or judgment. For example, data is collected on the number of classrooms in the preschool, but not if that classroom is in good condition or well-equipped.

The current project aims to improve existing NEDB data by introducing a mandatory quality self-assessment module, specifically to address the gap in process quality indicators. The report consists of three main sections, with the first outlining the project methodology followed, including the process for developing the manual and module, as well as sample sizes for pilot and research methods. The second section summarizes the analysis of pilot data, both from cognitive interviews and quantitative data from the self-assessment module. The last section provides recommendations for scaling up and improving the module.
1 METHODOLOGY

The goal of the research was to pilot a set of self-assessment quality indicators to identify whether they are valid and reliable for use in Kazakhstan preschools. One of the priorities for the UNICEF Country Program 2021-2025 in Kazakhstan, which has developed a joint workplan with the IAC, is preschool quality assurance. To implement the 2021-2022 workplan, partners evaluated and selected a set of indicators to measure the quality of public and private preschool institutions, while a team of national experts from Kazakhstan and researchers from UNICEF Innocenti developed tools and methodology; automated the module; held training for preschools on how to complete the module; conducted field tests; collected data; and developed recommendations for improving the module and general process. All of these steps are outlined in detail below.

1.1 Module and manual development

A desk review and consultation meetings with IAC national education stakeholders and government stakeholders in February 2022 led to the development of a set of self-assessment indicators (Table 1), which formed the newly developed “Kazakhstan Preschool Program Quality Self-Assessment Module” and included quality indicators that evidence suggests have a positive impact on child development and learning.

The indicators fall into four categories:

1. Staffing  
2. Pedagogy  
3. Family Engagement  
4. Environment

The IAC digitalized the self-assessment module, creating an online version similar to the NEDB.

The project also involved creating a comprehensive methodological manual to support preschools in completing the quality self-assessment module. The manual, which was provided in both Kazakh and Russian for ease of understanding, includes clear definitions of all indicators, step-by-step instructions on how to complete the indicators, and information on how to collect data for the indicators. Throughout this report, the manual will be referred to as the “Preschool Quality Self-Assessment manual”, or manual for short.

UNICEF Innocenti conducted two training sessions for seven IAC staff members on how to apply the self-assessment module using the manual. IAC then held four training sessions with representatives from the selected pilot preschools. Each preschool then received personal login details and the Preschool Program Quality Self-Assessment manual to complete the online self-assessment module, which was completed online by the person responsible for completing the NEDB, typically each preschool's methodologist.

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4 Headmasters, methodologists and pedagogues from private and public preschools across Kazakhstan, the IAC, MoE, Center of Pedagogical Excellence, the Kozybayev North-Kazakhstan State University Natural Science and Humanities Teaching Method Department, Pavlodar Pedagogical University and S Ulakhanov Kokshetau State University

5 The methodologist is a specialist responsible for curriculum quality and student educational track development. They help teachers make their courses understandable and structured. (MoE, 2009)
### Table 1: Summary of preschool quality self-assessment indicators

<table>
<thead>
<tr>
<th>Areas and indicators</th>
<th>1. STAFFING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.i. Staffing ratio</td>
<td>• Ratio of children to educators</td>
</tr>
<tr>
<td></td>
<td>• Learning support assistants to support children with special needs</td>
</tr>
<tr>
<td>1.ii. Staff qualifications</td>
<td>• Director holds a university pre-service qualification and has experience in preschool education (yes/no)</td>
</tr>
<tr>
<td></td>
<td>• Educators hold university pre-service qualifications in preschool education (%)</td>
</tr>
<tr>
<td></td>
<td>• Educators are trained in special or inclusive education (%)</td>
</tr>
<tr>
<td></td>
<td>• Educators are up to date with their professional development</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. PEDAGOGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.i. Structure of learning activities</td>
</tr>
<tr>
<td>• Amount of time children have for free play (for 2 years and younger) (minutes/day)</td>
</tr>
<tr>
<td>• Amount of time children have for free play (minutes/day) (for 2–3-year-olds)</td>
</tr>
<tr>
<td>• Amount of time children have for free play (minutes/day) (for 3–4-year-olds)</td>
</tr>
<tr>
<td>• Amount of time children have for free play (minutes/day) (for 4–5-year-olds)</td>
</tr>
<tr>
<td>• Amount of time children have for free play (minutes/day) (for 5–6-year-olds)</td>
</tr>
<tr>
<td>• Amount of time educators spend reading to children (minutes/day)</td>
</tr>
</tbody>
</table>

| 2.ii. Support for effective pedagogy and planning |
| • Frequency of classroom teaching observation and feedback (times/year) |
| • Tool used to guide observation (if previous indicator is >0) (free text) |
| • Time available to educators for planning (hours/week) |
| • Availability of pedagogues trained to work as coaches/trainers (yes/no) |
| • Availability of a curriculum/program for each individual child with special educational needs (yes/no) |
| • Monitoring and tracking of each child’s developmental strengths and weaknesses (yes/no) |

| 2.iii. Educator-child interaction |
| • Educators provide warm and responsive contact with children (all children) (yes/no) |
| • Educators model language usage by describing actions and events (children 0–2 years old) (yes/no) |
| • Educators are aware and responsive to children’s emotions and needs (children 0–2 years old) (yes/no) |
| • Educators provide face-to-face instruction at the child’s level (children aged 3–5 years old) (yes/no) |
| • Educators acknowledge children for their accomplishments and efforts (children 3–5 years old) (yes/no) |

---

This list of indicators was used in module piloting. A version of the manual revised after a pilot data analysis can be found in Appendix 2.
## 2.iv. Transition support (only for children transitioning classrooms)
- The preschool organization arranges for children to attend the next group level or first school grade (yes/no)
- Educators interact with primary school educators on child transition to primary school (yes/no)
- Families receive information on and are involved in transition discussions (yes/no)

## 3. FAMILY ENGAGEMENT

### 3.i. Communication with families
- Frequency of written child development reports provided to families (# reports/year)
- Frequency of one-to-one educator meetings with parents on child progress (meetings/year)
- All parents are asked about their concerns and priorities for their child (yes/no)
- Parents are consulted/involved in developing individual education plans (yes/no)

### 3.ii. Parent involvement in program planning
- Parent representative involvement in preschool planning processes (yes/no)

## 4. ENVIRONMENT

### 4.i. Physical space for children
- The preschool organization has completed and passed all attestation processes (yes/no)
- The area of indoor space accessible to children (m²)
- Outdoor area available to children (m²)
- Children with special needs spend all their time in the same room/space as children with no special needs (yes/no)

### 4.ii. Availability of developmentally appropriate play and reading materials
- Toys/play materials for children aged < 1 (#)
- Toys/play materials for children aged 1-3 (#)
- Toys/play materials for children aged 3-5 (#)
- Reading/picture/story books for children aged < 1 (#)
- Reading/picture/story books for children aged 1-3 (#)
- Reading/picture/story books for children aged 3-5 (#)
- Learning materials for children of different abilities (yes/no)
1.2 Research methods

Once the manual and Preschool Quality Self-Assessment Module had been completed, the module was piloted in 351 preschools to assess its validity and appropriateness. This process had multiple stages, ranging from validation workshops with national experts, to field testing. The stages are outlined in Figure 3 below.

**Figure 3: Pilot stages for the Preschool Quality Self-Assessment Module in Kazakhstan’s preschools**

- A validation workshop in February-March 2022 was used as the medium for soliciting expert feedback, written submissions and consultation. The exercise incorporated experts from the government, universities and preschools, and also explored the instrument’s face validity. Experts were asked whether the proposed indicators capture the elements of preschool quality in the context of Kazakhstan.

- Module reliability and validity was tested in May-June 2022 by piloting it in a sample of preschools (n=351). The pilot assessed how well the individual items interacted with each other and the data observed corresponded to the proposed structure; and also checked the correlation between self-assessment data and externally-observed data on preschool quality.

- Cognitive interviews were conducted in June 2022 with a sub-sample of preschools (n=19) to check and improve how indicators were interpreted. The focus of the interviews was to ensure that the structure, terminology and accompanying resources were clear and easy to understand.

1.3 Sample

UNICEF Kazakhstan, IAC and ECDI representatives pre-selected Turkistan, East Kazakhstan, Karagandy, Atyrau and North-Kazakhstan regions from the 17 regions and cities of Kazakhstan to pilot the Preschool Quality Self-Assessment Module. The ideal sample size was identified based on the number of items to be tested in the new module, so as to achieve a minimum item-to-subject ratio of one to five (Gorsuch, 1983; Hatcher, 1994). As such, a proportional sample of 351 preschool organizations was taken from the preschool population listed in the NEDB from these five regions, with implicit stratification by region, location (urban/rural), ownership (state/private) and instruction language (Kazakh/Russian/Kazakh and Russian/Other). While this approach meant the sample was broadly representative of the characteristics of preschools in these regions, the focus of sampling was to test the module on a sufficient number of preschools.

The online module was completed by 351 preschools across five regions of Kazakhstan. Most of the participating preschools were state owned, while most privately owned institutions were nurseries (Table 2). The sampled preschools served children from age one to seven with an average age of three years and a half. Kazakh was the most common language of instruction at 65 percent of the sample, followed by preschools instructing in both Kazakh and Russian (17 percent) (Table 3). It was essential to ensure a good coverage of preschools with a mixture of instruction languages to identify if the translated versions of the manual and module were understood and clear in Kazakh and Russian.

---

7. The expert consultation process and results are discussed in detail in Section 2.2.

8. At the time of sampling, Kazakhstan had 17 regions and cities. Three new regions were created by presidential decree as of June 2022 - Abai, Ulytau and Zhetisu Regions (Akhmetkali, 2022). Data analysis in this paper was conducted before that change.
Table 2 Number of pilot preschools, by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Number</th>
<th>Percent</th>
</tr>
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<tbody>
<tr>
<td>Atyrau</td>
<td>36</td>
<td>10</td>
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<tr>
<td>East Kazakhstan</td>
<td>82</td>
<td>23</td>
</tr>
<tr>
<td>Karagandy</td>
<td>49</td>
<td>14</td>
</tr>
<tr>
<td>North-Kazakhstan</td>
<td>46</td>
<td>13</td>
</tr>
<tr>
<td>Turkistan</td>
<td>138</td>
<td>39</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100</td>
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Table 3 Pilot preschool type of ownership

<table>
<thead>
<tr>
<th>Preschool type</th>
<th>Type of ownership</th>
<th>Total</th>
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<tbody>
<tr>
<td></td>
<td>State</td>
<td>Private</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>Nursery</td>
<td>56</td>
<td>87</td>
</tr>
<tr>
<td>Preschool mini-center</td>
<td>147</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>223</td>
<td>127</td>
</tr>
</tbody>
</table>

Table 4 Number and percentage of pilot preschool organizations by instruction language

<table>
<thead>
<tr>
<th>Language</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kazakh</td>
<td>230</td>
<td>65</td>
</tr>
<tr>
<td>Kazakh and Russian</td>
<td>61</td>
<td>17</td>
</tr>
<tr>
<td>Kazakh and Uzbek</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Russian</td>
<td>58</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td>100</td>
</tr>
</tbody>
</table>

1.4 Pilot

The research team used the UNICEF Ethical Review Checklist to measure research topic and methodology sensitivity, and then sent preschools an invitation to participate in the project.

The IAC made the Preschool Quality Self-Assessment Module available online, allowing the integration of automated logic checks, improving data quality and making it easier for preschools to complete. In addition, module indicators available in existing NEDB data, such as the number of children enrolled or preschool educators, were pre-filled.

Pilot preschools were asked to complete the module within a 6-week period between May-June 2022. To help them enter data and answer any questions they may have, the preschools were given a copy of the manual as well as the contact details of regional statistics departments.

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1 Figures were rounded to the nearest decimal point
2 Cater for children aged three up to seven years (MoE, 2021)
3 Cater for toddlers and preschool children, children aged one up to seven years (MoE, 2021)
4 Cater for toddlers and preschool aged children, including ages one up to seven years, and operate on a flexible schedule from two to seven times a week (MoE, 2021)
5 Figures were rounded to the nearest decimal point
1.5 Cognitive interviews

Cognitive interviews are recommended for developing data collection instruments (American Educational Research Association, American Psychological Association, and National Council of Educational Measurement [AERA], 1999), as they examine whether questions capture the intended meaning and identify any difficulties that respondents may face in providing a response.

Verbal probing was used to ask about respondent’s thinking, particularly targeting the cognitive processes involved in answering the questions. Cognitive processes include (Ryan et al., 2012):

- Comprehension, which involves paying attention to instructions and questions, making sense of them, determining what is being asked, and making connections between key terms and relevant concepts. For the purposes of the pilot, this meant exploring whether the module indicators were understood and interpreted in the way they were intended.

- Retrieval, which involves retrieving information to answer questions. For the purposes of the pilot, this meant exploring how preschool administrators collected the information needed to respond to the module, including through written materials and discussions among staff.

- Judgment, which involves a variety of tasks to extend and integrate any information retrieved. For the purposes of the pilot, this meant exploring whether preschool administrators were able to assess any relevant information appropriately, including facts, behaviors and attitudes.

- Response, which involves choosing and communicating a response. For the purposes of the pilot, this meant exploring whether preschool administrators were able to fit their answer to the response options provided accurately.

The interview guide therefore included questions on participants’ overall experiences with completing the Preschool Quality Self-Assessment Module, as well as their experiences with the new indicators. A rotating interview module was used due to the number of new indicators being tested, and to manage participants’ time. Questions on specific indicators were split into A and B modules, with an exception being made for indicators on educator-child interaction, which all participants were asked about, as they required more judgment than other indicators.

Nineteen preschools were taken from the pilot sample to create a sub-sample and invited to participate in follow-up cognitive interviews. As with the pilot sample, selection criteria tried to achieve a representation of respondents by region, location (urban/rural), ownership (public/private) and instruction language (Kazakh/Russian/Kazakh and Russian/other). If the preschool refused or was unable to respond, a replacement was found among preschools that fell into the same categories.

IAC specialists conducted cognitive interviews with selected preschools. The interview respondent was usually the person who completed the online self-assessment module, typically a methodologist. Verbal consent was obtained prior to the start of the interview. Verbatim transcripts were created from recorded interviews and machine translated into English. Cases where translations were unclear were clarified with local data collectors. Line-by-line coding was then performed using a mix of deductive and inductive codes for analysis. The codes were organized into three themes as they emerged during the interviews: general, construct dimensions (specific areas or subscales), and individual items; as well as cognitive processing areas: comprehension, retrieval, judgment and response.

1.6 Study limitations

The study was limited by potential bias resulting from preschool administrators, who have the most information about their settings, not being totally honest in cases where aspects of process or structural quality are less than favorable. To alleviate any concerns prior to project initiation, all preschools were informed that the pilot data was not going to be used to grade their preschool or

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14 The codebook can be found in Appendix 2
assess its individual status, and that they would not be subject to any negative consequences based on their responses.

The study was also limited in relation to training conducted before the pilot, which was conducted online and less than two hours long. Participants had the opportunity to ask questions both verbally and through the video-calling software chat function. However, given the modality and duration of the training, we cannot rule out that some participant questions remained unanswered. Online _____ were created for the participating preschools to help them clarify issues while completing the module. However, we cannot rule out cases where participants did not fully understand the manual or did not contact UNICEF or the IAC for clarification.

In addition, the module was only piloted in five of the 17 regions and cities of Kazakhstan15. Nuances may exist in the preschools across the different regions that were not captured in the pilot, which may therefore not be reflected in the module and manual to be implemented nationally. However, the validation meetings and consultations involved stakeholders from all over Kazakhstan to provide their feedback, which helped ensure that the manual would be valid across the different regions. Finally, the cognitive interview sample was taken from the pilot sample without ensuring sufficient coverage of preschools serving children with special needs. As such, it was difficult to validate certain quantitative pilot findings regarding LSAs or support to children with special needs.

15 At the time of sampling, Kazakhstan had 17 regions and cities. Three new regions were created by presidential decree as of June 2022 - Abai, Ulytau and Zhetisu Regions (Akhmetkali, 2022). Data analysis in this paper was conducted before that change.
2 ANALYSIS OF PILOT DATA

The analysis of the cognitive interview and pilot data focused on assessing module validity and reliability, and ultimately updating the self-assessment module and accompanying manual based on findings.

2.1 Cognitive interview findings

Cognitive interview findings were primarily used to notify of module and associated manual revisions, the data collection process, and to validate responses to the online module (explored further in section 2.2).

Most respondents reported needing 40-60 minutes to complete the module. Four preschools mentioned that it took them around 20 minutes to complete it, and three preschools reported spending more than a day on the process\(^{16}\). The times reported may not be entirely reflective of the actual time respondents spent completing the module, given that it requires classroom observations and collecting information from different sources. The discrepancy could be explained by certain preschools understanding the question on time spent completing the module as the time they needed to answer module questions, rather than also the time spent collecting the required data. It is essential that the module is scaled up to ensure that preschools have sufficient time to complete it, so that they are also able to conduct any necessary classroom observations and collect data that is not readily available.

Respondents mentioned the challenges they faced in completing the module, despite the training. However, the manual and discussions with peers resolved many of the issues. The majority of challenges came from unfamiliar terminology, such as “time for free play”, “language modeling” or “physically interacting at the child’s level”. Although preschool administrators were advised to read the manual prior to completing the module, as it included terminology definitions, module and manual training can be restructured to increase understanding of unfamiliar terms or specific indicators. Training needs to be more interactive to give participants the opportunity to ask questions, incorporating group activities or quizzes. Any such changes will however increase training duration, potentially limiting preschool administrators’ ability to attend.

Most respondents mentioned they completed the module in consultation with colleagues, most commonly other educators, their supervisor or school psychologist. This was particularly the case when they faced challenging or difficult questions.

“I consulted with the psychologist who works with me in the kindergarten to complete the module. We discussed some questions together; ones I did not know the answer to.”

Participant from a kindergarten in Karagandy

Only two participants from the cognitive interview sample said they completed the module without consulting colleagues, noting that they skimmed through the manual, then filled in the module based on their understanding, experience and information they had available. Some preschool administrators said they did not have written reports for many of the indicators. However, they reported being motivated to create the reports/documentation according to the module. Other preschool administrators reported they had to do calculations for some indicators, such as the number of toys or books, while other information was already available in written documents. Only two respondents

\(^{16}\) The periods reported include 27 hours; four days and eight days
reported conducting classroom observations to complete the required indicators, while the majority reported completing it based on their existing knowledge, experience and documents available. Many respondents reported feeling certain about their answers, and that they would complete the module the way if they had to again. Four respondents mentioned that their answers would change their responses if they had to complete the module again, as some indicators had become clearer during the cognitive interview process and after re-reading the manual after completing the module.

2.2 Assessing module reliability and validity

2.2.1 Definitions and types of reliability and validity

Instrument reliability is used to determine whether the instrument can be interpreted in the same way in different situations. There are several ways to assess reliability, some of which include test-retest reliability, which is testing the same group of participants at two different points in time to observe if their responses remain consistent (Field, 2013), or using Chronbach's alpha, a statistical measure that assesses an instrument's internal consistency and identifies to what extent multiple indicators are indeed measuring the same construct (Cronbach, 1951).

Meanwhile, instrument validity refers to whether it measures what it has set out to measure (Field, 2013). There are several forms of validity, some of which include content validity, meaning whether indicators represent the construct being measured or cover the full range of the construct (Field, 2013); face validity, which is whether the instrument measures what it is supposed to measure based on subjective judgment (); criterion validity, which is when data collected through the instrument is validated through comparisons to objective data (Field, 2013).

2.2.2 Reliability and validity analysis

Multiple means were used to assess module validity and reliability, with module face validity initially assessed through an expert validation workshop. First of all, the proposed draft module and indicators were presented at a validation workshop, with 42 attendees from government, universities, international organizations, local associations, and preschools. In-depth discussion and additional written feedback shared with the team were used to update the draft module and prepare a final version for piloting. In addition, feedback from the preschool administrator training stage was used to hone the module and manual further for piloting, in doing so, strengthening the face validity of the module.

The pilot data was then subjected to a quantitative analysis to assess the module's internal consistency as a measure of reliability by producing Cronbach's alpha coefficients. To do so, continuous data was recoded as binary using cutoffs the authors identified from existing benchmarks and standards. For instance, a ratio of children to educators of 14:1 or lower was recoded as one, while a ratio over 14:1 was recoded as zero based on an average OECD country ratio of 14:1 (OECD, 2020). For indicators without a widely accepted reference point, the cutoff was set at 60%. This was applied to the number of age-appropriate toys and books in preschools (for a complete list of the cutoff points, see Appendix 3). Additionally, indicators with a high proportion of missing responses were removed from the Cronbach's alpha measurement17.

Cronbach alpha coefficients indicated a low degree of internal consistency of 0.39 for the overall module (Table 4), which is below the typical Cronbach alpha benchmark of between 0.70 and 0.75 (Christmann & Aelst, 2006). Staffing indicators registered the lowest internal consistency, with a Cronbach alpha of 0.19, followed by the pedagogy-based indicators (0.34). The indicators examining

17 Other transformations were made for indicators with a large proportion of missing values. This is outlined in Appendix 3.
pre-school environment and family engagement registered the highest alpha coefficient (0.36), but were still below the acceptable benchmark level. Cronbach alpha coefficients are, in part, dependent on the number of items being measured (Christmann & Aelst, 2006); and as such, a higher number of items within a set will more likely yield a higher alpha coefficient. The module did not include an exhaustive number of indicators or items to assess different quality areas. While this approach was adopted to avoid making the module too long and time-consuming to complete, it may have limited internal consistency. In addition, multiple concepts were explored within each set of indicators to cover a broad range of quality aspects. For example, the staffing set includes staff headcount indicators (two), in addition to staff qualifications (four). Future iterations of the module may need additional indicators to ensure greater reliability for each set and the module as a whole. However, this will make the module longer and more difficult for administrators to complete, increasing the risk of respondent fatigue and less accurate data. As such, the authors recommend policymakers use module data as indicative of the quality of settings, rather than regarding it as an absolute measure. A recommendation was also made to supplement module data with additional data or observations to explore specific quality areas in more depth when necessary or needed.

Table 5 Cronbach alpha coefficients for each set of module indicators

<table>
<thead>
<tr>
<th>Indicator sets</th>
<th>Number of indicators used in the calculation</th>
<th>Cronbach alpha coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staffing</td>
<td>5</td>
<td>0.19</td>
</tr>
<tr>
<td>Pedagogy</td>
<td>11</td>
<td>0.34</td>
</tr>
<tr>
<td>Family engagement</td>
<td>5</td>
<td>0.36</td>
</tr>
<tr>
<td>Environment</td>
<td>5</td>
<td>0.36</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>0.39</td>
</tr>
</tbody>
</table>

Third, a descriptive analysis was run on all indicators, using outliers and skewed responses to identify potential module improvements. The descriptive analysis covered the total sample and was disaggregated by region to explore whether the module captured variation across the sampled regions. Pilot data was also compared against cognitive interview data to explore whether responses remained consistent across the two data collection time points.

The descriptive analysis of and comparison against cognitive data revealed that most indicators were understood in the way they were intended due to good alignment between pilot and interview data. For example, quantitative pilot and cognitive interview data were aligned in relation to whether preschools monitor and track children’s developmental strengths and weaknesses, with interviews revealing that this is common practice in typical preschool activities. However, the cognitive interviews revealed that not all indicators were understood in the way they were intended. For example, respondents widely misunderstood the indicator outlining the availability of pedagogues trained to work as a coach/trainer, understanding the term “coach/trainer” to mean sport’s coach, rather than mentor. Suggestions for rewording the Kazakh and Russian translations have been made to improve accuracy.

The analysis also revealed skewed positive responses, outliers or missing data in some indicators. For example, those exploring educator-child interaction were highly positively skewed, with approximately 9 in every 10 respondents reporting that educators engage in positive interaction across multiple indicators. While this may indeed suggest high quality interaction between the child and educator, results may be reflecting an overly positive assessment of educator-child interaction due to the way the indicator was constructed. Respondents were only required to respond “yes” or “no” if educators partake in positive interaction, which may not provide a nuanced overview on how widespread interaction is. The module

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18 Not all indicators were used in the alpha coefficient calculation due to frequent missing values, which would have affected the number of observations recorded in the Cronbach alpha calculation. The full list of indicators included is shown in Appendix 4.
19 Data from the “tools used to guide observation” indicator was qualitative in nature and therefore not included in the Chronbach alpha calculation.
was updated following the analysis and is discussed further in the sub-sections below. Outliers were also observed for some indicators that required continuous data. For example, some preschools reported having 1,000 or 2,000 developmentally appropriate toys, which may suggest they misunderstood the question and counted individual items such as individual building block set pieces, rather than complete building block sets. Alternatively, this may be due to data entry errors. With that in mind, restrictions, including drop-down menus with number ranges for numerical online module values, have been suggested to help avoid any such errors in the future.

The sections below highlights key descriptive analysis examples presented for each set of module indicators. The remaining descriptive analysis is available in Appendix 4.

2.2.2.1 Staffing indicators

Staffing indicators covered the number of qualified staff and educators available to support child learning and development, as well as child-to-educator ratios, and were mostly based on existing NEDB data. Suggestions for their improvement have implications for the NEDB and quality assessment module.

Staffing ratios

The average educator-to-child ratio was 15 children to one educator, with variation across the sampled regions (Figure 4). However, the NEDB does not further disaggregate the data by educator shifts or subjects being taught. For example, it does not highlight art or music educators who do not spend a full day with the children in the classroom. Given many educators work in shifts in Kazakhstan and teach different subjects, the estimates are likely underestimated. Additional NEDB indicators will be needed to capture these nuances and generate more accurate data on preschool educator-to-child ratios.

"Learning support assistants for children with special needs" is missing from the NEDB as a staffing indicator. Only 14 percent of the sample reported having at least one LSA to support children with special needs. This was confirmed in the cognitive interviews, with most respondents reporting they had no need for LSA due to a lack of children with special educational needs in their preschool. Pilot data also showed that the average number of LSAs in preschools teaching children with special learning needs was also low, at roughly three per school, with some regional variation (Figure 5). The

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20 For example, the child-to-educator ratio indicator, which is a variable in the NEDB, was calculated based on the number of children and educators working at the specific preschool

21 Includes only educators, and not total staff, and as such excludes directors and heads
number of LSAs was highest in Turkistan region, which may be due primarily to the existence of a large preschool in the region with over 10 LSAs. Cognitive interview data suggests similar trends, as one preschool mentioned having a group for children with special educational needs that had one trained educator assigned to it.

**Figure 5: Average number of LSAs in preschools that have children with special needs, by region**

<table>
<thead>
<tr>
<th>Region</th>
<th>Average LSAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkistan region</td>
<td>5</td>
</tr>
<tr>
<td>North-Kazakhstan region</td>
<td>0.4</td>
</tr>
<tr>
<td>Karagandy region</td>
<td>3</td>
</tr>
<tr>
<td>East-Kazakhstan region</td>
<td>2</td>
</tr>
<tr>
<td>Atyrau region</td>
<td>3</td>
</tr>
</tbody>
</table>

2.2.2.2 Pedagogy indicators

Pedagogy indicators included learning activity structure, support for effective pedagogy and planning, educator-child interaction, and support for transitioning to primary school. Regarding the structure of learning activities, preschools were specifically asked about the amount of time different age groups typically have for free play and reading, which was defined in the manual as self-directed play and learning opportunities and activities.

**Structure of learning activities**

The average reported amount of time children had for free-play was 48-minutes for all children, regardless of their age group. Children aged 5-6 had the highest average time for free play (59 minutes), while children under 2 had the least average time (32 minutes). The difference in the time allocated for free play, depending on age, was also highlighted during cognitive interviews. Specifically, respondents reported that older groups had more time for free play:

> “3-4 year-olds have an hour [of] mostly play outside. Older groups (5-6 and 6) have 45 minutes for free play”.

*Preschool representative from a Kindergarten in the Atyrau region*

Similar trends were observed for the indicator on time spent reading to children, with older children receiving more reading time than younger children. This was also corroborated in the cognitive interviews. Alignment between the findings from the pilot and cognitive interviews shows that the participating preschools understood the two indicators correctly.

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22 The analysis used a sub-sample of the pilot preschools that reported having children with special needs (n=66). This includes 9 preschools in Atyrau region, 17 in East-Kazakhstan region, 13 in Karagandy region, 12 in North-Kazakhstan region and 15 in Turkistan region.
Support for effective pedagogy and planning

Data on the frequency with which preschool directors, methodological or pedagogical leaders conduct standard observations and provide feedback to educators was also explored. The preschools were allowed to use standard observation tools such as ECERS or tools they developed themselves. School directors or heads averaged 35 classroom observations per year, with wide variation across regions (Figure 7). However, cognitive interviews suggest that the figures exaggerate the true number of observations, as many preschool administrators misunderstood the question to mean any kind of observation conducted. For example, the number of “open classes” where the methodologist observes the teaching process, even if no feedback was provided to the educator afterwards, was considered an observation. According to the definition of observation in the manual, these types of observation would not count, suggesting the indicator was not understood in the way it was intended, potentially due to the indicator itself not being clear or preschool administrators not referring to definitions in the manual.

Also, data collected on the “tool used to guide observation” indicator was not considered reliable. Many respondents in the pilot project gave one-word answers, such as monitoring or surveillance cameras, instead of listing standardized observation tools, with only a few preschools providing actual examples of tools, such as the ECERS or observation maps. Issues with comprehending the indicator were widespread, as evidenced by the numerous preschools that attempted to bypass the question by entering numerical values. The manual and online module have been revised to provide clearer guidance and better understanding of the question, addressing common issues that arose during the data collection process.
Educator-Child Interaction

Daily educator and child interaction was also explored, with cognitive interviews demonstrating that these particular indicators were widely misunderstood. They should have been completed based on observations and consultations with educators, however participants responded based on existing standards, resulting in positively skewed responses in the pilot results. For example, nearly 100 percent of preschools reported that “educators provide warm, responsive contact with children.” This was also the case for the indicator around “acknowledging children for their effort,” with 99 percent of preschools reporting that educators do so, with nearly no variation across the regions. Even though respondents mentioned in cognitive interviews that praising children for their achievements was common in their particular preschool, because it helps motivate children, the results are most likely inaccurate. The lack of variation and highly-skewed positive responses may indicate bias or lack of consistency in the way data was collected. Respondents were required to answer either “yes” or “no” to the indicators, which may suggest that they would have answered “yes” even if only a few teachers practice positive interaction with children. As such, the authors have updated the scale responses for these indicators to capture more detail, offering options such as 1) all educators do, 2) some educators do or 3) few educators/none do. The manual and module have also been updated to include the suggestion that interaction indicators should be based on actual observations, rather than existing standards.

2.2.2.3 Family engagement indicators

Family engagement indicators covered preschool communication with families either as written reports or one-to-one meetings between educators and parents, communication on parent priorities and concerns for their child, and involving parents in the development of individual educational plans for their child.

Family communication

Educators and parents managed on average 13 one-to-one meetings per year. The figure varied greatly by region, with the average number at 8 in Atyrau region and 23 per year in Karagandy region (Figure 8). Cognitive interviews showed that preschools often counted drop-off and pick-up meetings with parents towards this figure, even though the focus was on meetings to discuss child performance and development. The manual clarifies the details of the indicator, adding that, “daily drop-offs and pick-ups can be considered only if parents and educators discuss a child’s development and feedback is provided”.

Figure 7: Average number of classroom observations per year, for the 2021-2022 school year, by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Observations per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>20</td>
</tr>
<tr>
<td>East-Kazakhstan</td>
<td>28</td>
</tr>
<tr>
<td>Karagandy region</td>
<td>21</td>
</tr>
<tr>
<td>North-Kazakhstan</td>
<td>39</td>
</tr>
<tr>
<td>Turkistan region</td>
<td>40</td>
</tr>
<tr>
<td>Atyrau region</td>
<td>35</td>
</tr>
</tbody>
</table>
Parent involvement in program planning

On average, most preschools reported that parent representatives are involved in the school planning process 63 percent of the time. That figure varies between 55 percent in East Kazakhstan region and 76 percent in North-Kazakhstan region (Figure 9). All preschools interviewed mentioned that parents are entitled to participate in the planning of educational activities, with one preschool highlighting that they organize an annual meeting with parents where the latter can raise their concerns and provide recommendations and suggestions for program planning.

Availability of developmentally appropriate play and reading materials

The average number of toys and books available varied by age and region (Table 6). Generally, fewer books and toys were available for children under one or between one and three years, when compared to children aged three to five. When comparing this figure to the average number of children in these
age groups by region, preschools are seen to have fewer children aged under one year compared to
children aged one to three or three to five (Figure 1), which may explain the variation in the number of toys
and books. The cognitive interviews revealed that respondents used specific documents to decide what
constituted age-appropriate toys to calculate the number of play materials. However, consideration of the
data revealed outliers, with respondents mentioning having 1,000 to 2,000 toys and books per preschool.
A clarification was added to the module to ensure that toy sets are counted rather than individual items
within those sets. Online module data validation can also help rule out any data entry errors.

Table 6: Average number of toys and books per age group and region

<table>
<thead>
<tr>
<th>Region</th>
<th>Average number of toys/play materials</th>
<th>Average number of reading/picture/story books</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Children aged &lt; 1</td>
<td>Children aged 1-3</td>
</tr>
<tr>
<td>Atyrau region</td>
<td>11</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5</td>
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<td></td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>North-Kazakhstan region</td>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>74</td>
<td>74</td>
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<td>19</td>
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<td></td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>East-Kazakhstan region</td>
<td>11</td>
<td>23</td>
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<td></td>
<td>31</td>
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<td>27</td>
<td></td>
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<tr>
<td>Karagandy region</td>
<td>38</td>
<td>59</td>
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<td>47</td>
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<td></td>
<td>53</td>
<td></td>
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<tr>
<td>Turkistan region</td>
<td>20</td>
<td>50</td>
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<tr>
<td></td>
<td>69</td>
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<td>50</td>
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<tr>
<td>Total average</td>
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<tr>
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<td>21</td>
<td>21</td>
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<td></td>
<td>41</td>
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</tbody>
</table>

Classroom time for children with special needs

Preschools were also asked whether children with special needs spend all their time in the same
room as children without special needs, with 89 preschools responding. However, of those
responses, 15 were invalidated due to them taking the form of numerical data, potentially indicating
a misunderstanding of the indicator. Of the remaining 74 valid responses, 78 percent reported that
children with special needs spend all their time in the same classroom as children without special
needs. Cognitive interviews corroborated these findings. Four preschool organizations who had
children with disabilities reported that children spend all their time in the same rooms as children
without special needs.

2.2.2.5 Descriptive analysis summary

Overall, descriptive analysis results highlight instances where the indicator wording, module
explanations or answer options can be improved. For that reason, the quality-assurance module
and manual have been updated to ensure indicators are understood in the way they are intended,
and also limit biased and/or skewed responses. The online module also needs to be updated to
incorporate more restrictions and logic checks to limit data entry errors. These recommendations
are highlighted in Section 3 below, while the updated module and manual are available in Appendix 1.

2.3 Quality-assurance module use in ECEC planning

Once the updated module and manual are implemented in Kazakhstan they will be key in the decision-
making process to improve general preschool quality. The MoE will use it to identify which preschools
are low quality by comparing them against a set of benchmarks or standards. This section outlines
examples of current overseas standards and benchmarks for quality-assurance module indicators,
which the MoE can use as a guide. Having said that, the authors recommend it still develop and
implement national standards and benchmarks for the new indicators.23

23 Most indicator benchmarks were provided in this section. However, additional benchmarks such as educator and director qualifications, in addition to training in inclusive education are discussed in more detail in a separate,
2.3.1 Educator-to-child ratios

The recommended educator-to-child ratios differ depending on the children’s age group, and are lower the younger the children. Table 7 presents an example from Australia, highlighting that for children aged under 24 months, there should be four children to one educator. Meanwhile, for three years and above, the standard is 11 children to one educator. Standards differ from country to country. For example, in the UK, for children under 24 months, the suggested ratio is one educator to three children; for children aged two, it is one educator to four children, and for children over three years, it is one educator to 13 children (UK Department of Education, 2021).

Table 7: National educator-to-child ratios in Australia

<table>
<thead>
<tr>
<th>Age of children</th>
<th>Educator to child ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth to 24 months</td>
<td>1:4</td>
</tr>
<tr>
<td>Over 24 months and less than 36 months</td>
<td>1:5</td>
</tr>
<tr>
<td>36 months up to and including preschool age</td>
<td>1:11</td>
</tr>
</tbody>
</table>

Source: Australian Children’s Education and Care Quality Authority, 2020 p. 429

Current government standards in Kazakhstan stipulate a maximum number of children aged three, four, and five per preschool educator of 25. For children aged one, the standard is one educator to 10 children, and for those aged two, it is one educator to 20 children (Ministry of Education Order, 2022). The NEDB does not further disaggregate the data by the age groups taught, so it is difficult to ascertain to what extent these standards are met. Furthermore, given that the data is not disaggregated by the educators’ shifts or the subjects they teach, real educator-to-child ratios may be higher.

2.3.2 Playtime

The amount of time children should have for free play differs, even though the opportunity to engage in unstructured and self-led play is essential for their development. Research indicates that even 15 minutes of free play per day significantly improves children’s self-regulation capacities (Colliver et al, 2022). The recommended time given to free play is contingent upon program length (or the number of hours children spend at preschool per day). The NYC Early Childhood Education Division defines suggested indoor and outdoor free play times using the third version of the ECERS (NYC Department of Education, 2021). Table 8 summarizes recommended indoor and outdoor free play times based on program length.

Table 8: Recommended indoor and outdoor free play times

<table>
<thead>
<tr>
<th>Program length</th>
<th>6-hour 20 min days</th>
<th>8-hour days</th>
<th>10-hour days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor play</td>
<td>2 hours 7 mins</td>
<td>2 hours 40 mins</td>
<td>3 hours 20 mins</td>
</tr>
<tr>
<td>Outdoor play</td>
<td>1-hour (weather permitting)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: NYC Department of Education, 2021

Pilot findings showed that children had an average of 48 minutes for free play per day, regardless of their age group, and that older groups had more time for free play. To better align it with international standards, the module divided free play into indoor and outdoor free-play time. In addition, the recommendation was made to add a “program duration per preschool” indicator to the NEDB to help identify whether the recommended duration for play sessions are met.

2.3.3 Classroom observations

The English National Educational Union recommends that there should be no more than three classroom teaching observations per year, and that these observations should not exceed three hours per year.
per classroom (National Educational Union, 2020). Classroom observation frequency and duration can also depend on the tool being used. For instance, the Classroom Assessment Scoring System™ (CLASS™) involves conducting four rounds of 15-minute observations over a full day of instruction (University of Virginia, 2022).

2.3.4 Classroom activity planning
The time required for planning varies according to the ECEC setting, the children's age and curriculum. In Finland, to meet increased demands, preschool educator paid planning, assessment and development time has been increased from 8% to 13% of their working week (Heikka et al., 2021). While research on the time given to standard planning in high quality settings is limited, findings show that ECEC teachers tend not to have enough time allocated for planning. For example, 30% of ECEC teachers in the US responded in a survey that they were not paid for planning time (King et al, 2016). With this in mind, implementing standards and benchmarks for teachers to ensure a portion of their working time is allocated to planning is key. In the pilot, preschool organizations reported that educators are given 11 hours per week to prepare for lessons, with little variation across the regions (9 to 12 hours). However, interviews suggest there may be some confusion, as some preschools were not sure if the indicator referred to daily or longer-term planning, i.e., monthly, or annual planning.

2.3.5 Interaction with parents
The Australian Capital Territory (ACT) Government suggests written reports be provided to child caregivers twice a year (ACT, 2016). Meanwhile, the OECD Teaching and Learning International Survey (TALIS) reports that the majority of surveyed countries set up specific events for families and parents to visit ECEC centers (OECD, 2019).

2.3.6 Indoor activity areas
Sufficient space for each child in the classroom and at their preschool in general is essential for their development. The recommendations for indoor space vary by country, but the OECD average is “2.9m² per child for kindergarten/preschool organizations, and 3.6m² for childcare centers” (OECD, 2012, p. 1). The outdoor space requirement for kindergartens is 7m² per child and 8.9m² for childcare centers (OECD, 2012).

2.3.7 Use of toys and books
Different approaches exist with respect to the number of preschool books and toys available to children. For example, the Montessori Method suggests rotating play materials and games in the classroom on a weekly or bi-weekly basis, with no more than 8-10 activities available at the same time (Montessori Method, 2019). At the same time, the ECERS-3 tool suggests at least 15 books should be accessible for 20 children, and that 35 books for 20 children in the classroom is already considered as “many” books. Pilot findings showed that, on average, 21 books were available in the classroom for children aged 1 to 3 years, and 41 books for children aged 3 to 5 years.

Standards may differ depending on the category of play materials. For example, the specifications for materials used in fine motor skill development require at least 10 resources for (1) building materials; (2) art materials; (3) manipulatives and (4) puzzles (NYC, 2019). A study by Dauch et al. (2017) showed that the number of toys is not always a clear predictor of quality or child outcomes, and fewer toys can actually support children's cognitive development better, allowing for longer play with the same toys, improving their focus, and promoting more creative play (Dauch et al, 2017).
3. SCALE-UP RECOMMENDATIONS

This section highlights the main general and specific recommendations to further improve and revise the Preschool Program Quality Self-Assessment Module and accompanying manual.

3.1 General recommendations

- Include a self-assessment module in the NEDB data collection cycle to reduce the burden on preschools and create a centralized database for all indicators.
- The module can be improved by adding periodic classroom observations by external evaluators or MoE supervisors. This will validate self-assessment data and provide multiple triangulation data sources.
- Set national standards/benchmarks for the indicators suggested in the self-assessment module, such as educator-to-child ratios for each age group, a number of annual meetings with parents, or time allocated for reading and outdoor play.
- Analyze quality assurance data against set standards twice a year to inform the pre-primary education sector plans and budgeting.
- Review module indicators every two to five years to explore their continued relevance and applicability in the context of Kazakhstan.
- Change manual training modality to in-person or blended training to ensure it is more interactive and engaging. There may also be a need to increase training duration to provide more opportunities for participants to ask questions and participate in activities such as group discussions or polls to assess understanding.
- Create a short explanatory video on the module and manual to be watched by respondents prior to completing the module. The video can also explain the rationale of the additional indicators and provide tips on how to complete the module, stressing the importance of making use of the manual in cases of confusion.
- Consider adding additional new indicators to some of the indicator categories (specifically, staffing, environment and family engagement) to improve module reliability and validity.
- Ensure preschools have sufficient time to fill in the NEDB over the course of a few days/weeks to ensure all necessary data is collected appropriately.

3.2 Online module recommendations

- Add additional online platform hints for most indicators to remind respondents of the kind of information to be recorded and what should be included in calculations. Suggestions for the hints were added to the revised version of the manual (Appendix 1).
- Add additional logic chains and restrictions to the online module to collect more reliable data. This is essential due to the number of cases of missing responses for certain questions, in addition to cases of inaccurate data entries (for example, some preschools entered numerical values as opposed to text for the “tools used for observations” indicator).

3.3 Module recommendations

- Several revisions and amendments have been recommended for newly suggested indicators as follows:
• Amount of time children have for free play: Literature and standards from other countries have been used to split the time children have for free play into “amount of time children have for free indoor play (minutes/day)” and “amount of time children have for free outdoor play (minutes/day).” An indicator on program length has also been added, as the amount of time for free play is contingent upon program length.

• Frequency of classroom teaching observations and feedback. Some respondents incorrectly understood this indicator to mean feedback given to children. The authors added additional explanations that it actually covers feedback provided to educators. An additional recommendation was made to update the indicator so it explicitly mentions, “frequency of classroom teaching observation and feedback to educators”

• Availability of pedagogues trained to work as coaches/trainers for other pedagogues: the indicator was incorrectly understood to mean “physical education educators” for children. For this reason, the Russian and Kazakh translations will have to be amended.

• Educator-child interaction: The response options for all indicators in this pedagogy sub-group have been changed from “yes” or “no” to educator-child interaction indicators in the pilot to “all educators do”, “some educators do” or “few educators/none do.” The new response options will allow preschools to provide more detailed answers and may reduce the bias in self-reporting.

• Conduct a small survey or cognitive interviews on the updated module and manual before scaling up the module nationally. If time and budgetary restrictions exist, questions may be targeted to problematic indicators instead of the full module. This is important given that the module and manual have been updated a number of times.
4. CONCLUSIONS

The pilot was launched to test a newly developed national quality self-assessment module for use in Kazakhstan's preschools, and which provides a comprehensive overview of preschool process quality in Kazakhstan. The module was tested in 351 preschools through a survey, as well as cognitive interviews with 19 preschools to assess comprehension of the module. A group of 42 experts provided face validity for the module. However, given that the module explored multiple quality measures, covering multiple domains with few indicators per domain, it overall internal consistency was low. Data analysis revealed alignment in participants’ responses to the survey and cognitive interviews, which confirmed that the module indicators were understood in the way they were designed. Some indicators were not well understood, as was revealed through cognitive interviews or due to large volumes of missing or erroneous data. The module and indicators were amended and updated once the issues in question had been analyzed.

Recommendations based on the findings include scaling up the module to all preschools following a rapid assessment of updated indicators to ensure they are understood correctly; setting context-specific standards and benchmarks to indicate which quality areas may need further investment and support; treating module data as indicative of the quality of ECEC settings, rather than an absolute measure and complementing module data with observations or additional qualitative data where possible. Adding a self-assessment module to the NEDB will further improve the existing system by providing information and data on both preschool processes and structural quality.
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APPENDIX 1:
PRESCHOOL QUALITY SELF-ASSESSMENT MANUAL PROGRAM

The Kazakhstan Preschool Quality Self-Assessment Module program incorporates evidence-based quality indicators that have a positive impact on children's development and learning. The module includes a set of indicators to assess program quality at the time the self-assessment is conducted, and which fall into four areas: (1) Staffing, (2) Pedagogy, (3) Family Engagement, and (4) Environment. They are summarized in Table A1 below.

Table A1: Summary of preschool quality self-assessment indicators

<table>
<thead>
<tr>
<th>Areas and indicators</th>
<th>1. STAFFING</th>
</tr>
</thead>
</table>
| **1.i. Staffing ratios** | • Ratio of children to educators  
| | • Learning support assistants to support children with special needs (#) |
| **1.ii. Staff qualifications** | • Director holds a university pre-service qualification and has experience in preschool education (yes/no) 
| | • Educators hold university pre-service qualifications in preschool education (%) 
| | • Educators are trained in special or inclusive education (%) 
| | • Educators are up to date with their professional development (%) |
| **2. PEDAGOGY** | • Program duration (hours/day) 
| | • Amount of time children have for indoor free play (for 2 years and younger) (minutes/day) 
| | • Amount of time children have for indoor free play (minutes/day) (for 2-3 year olds) 
| | • Amount of time children have for indoor free play (minutes/day) (for 3-4 year olds) 
| | • Amount of time children have for indoor free play (minutes/day) (for 4-5 year olds) 
| | • Amount of time children have for indoor free play (minutes/day) (for 5-6 year olds) 
| | • Amount of time children have for outdoor free play (for 2 years and younger) (minutes/day) 
| | • Amount of time children have for outdoor free play (minutes/day) (for 2–3-year-olds) 
| | • Amount of time children have for outdoor free play (minutes/day) (for 3–4-year-olds) 
| | • Amount of time children have for outdoor free play (minutes/day) (for 4–5-year-olds) 
| | • Amount of time children have for outdoor free play (minutes/day) (for 5–6-year-olds) 
| | • Amount of time educators spend reading to children (minutes/day) |
| **2.ii. Support for effective pedagogy and planning** | • Frequency of classroom teaching observation and feedback to educators (times/year) 
| | • Tool used to guide observation (if previous indicator is >0) (free text) 
| | • Time available to educators for planning (hours/week) 
| | • Availability of pedagogues trained to work as coaches/trainers for other pedagogues (yes/no) 
| | • Availability of a curriculum/program for each individual child with special educational needs (yes/no) 
| | • Monitoring and tracking of each child's developmental strengths and weaknesses (yes/no) |
### 2.iii. Educator-child interaction
- Educators provide warm and responsive contact with children (all children) (all educators do, some educators do, few educators/none do)
- Educators model language usage by describing actions and events (children 0-2 years old) (all educators do, some educators do, few educators/none do)
- Educators are aware and responsive to children's emotions and needs (children 0-2 years old) (all educators do, some educators do, few educators/none do)
- Educators provide face-to-face instruction at the child's level (children aged 3-5 years old) (all educators do, some educators do, few educators/none do)
- Educators acknowledge children for their accomplishments and efforts (children 3-5 years old) (all educators do, some educators do, few educators/none do)

### 2.iv. Transition support (only for children transitioning classrooms)
- The preschool organization arranges for children to attend the next group level or first school grade (yes/no)
- Educators interact with primary school educators on child transition to primary school (yes/no)
- Families receive information on and are involved in transition discussions (yes/no)

### 3. FAMILY ENGAGEMENT
#### 3.i. Communication with families
- Frequency of written child development reports provided to families (# reports/year)
- Frequency of one-to-one educator meetings with parents on child progress (meetings/year)
- All parents are asked about their concerns and priorities for their child (yes/no)
- Parents are consulted/involved in developing individual education plans (most of the time, sometimes, rarely/never)

#### 3.ii. Parent involvement in program planning
- Parent representative involvement in preschool planning processes (yes/no)

### 4. ENVIRONMENT
#### 4.i. Physical space for children
- The preschool organization has completed and passed all attestation processes (yes/no)
- Indoor area available to children (m²)
- Outdoor area available to children (m²)
- Children with special needs spend all their time in the same room/space as children with no special needs (yes/no)

#### 4.ii. Availability of developmentally appropriate play and reading materials
- Toys/play materials for children aged < 1 (#)
- Toys/play materials for children aged 1-3 (#)
- Toys/play materials for children aged 3-5 (#)
- Reading/picture/story books for children aged < 1 (#)
- Reading/picture/story books for children aged 1-3 (#)
- Reading/picture/story books for children aged 3-5 (#)
- Learning materials for children of different abilities (yes/no)

The following section provides definitions and additional information from the manual used to ensure data in the NEDB is accurate and explain the rationale behind specific indicators.
1.1. Staffing

The indicators in the self-assessment staffing section cover the number of educators and staff available to support learning and development. Many of these indicators already exist as NEDB indicators, but additional definitions and explanations on how to complete each indicator are provided below:

1.1.i. Staffing ratios

**Ratio of children to educators**

This indicator will be based on existing NEDB indicators such as the number of children enrolled at a specific preschool and the number of educators working at the preschool.

**LSA to support children with special needs (#)**

This new indicator asks about any preschool LSAs or educator/integration aides providing support for children with special needs. They do not have to have formal teaching qualifications and are not included in the formal calculation of staffing ratios in the previous indicator. The indicator does not apply to preschools with no children with special needs.

1.1.ii. Staff qualifications

**Director holds university qualifications and experience in preschool education (yes/no)**

This indicator is based on existing NEDB indicators on whether preschool program directors have 1) at least two years of pedagogical work experience; 2) university (higher, vocational or technical) qualifications in preschool education.

**Educators hold university pre-service qualifications in preschool education (%)**

This indicator is based on existing NEDB indicators on qualifications held by each preschool educator, and is used to calculate the number of educators holding university (higher, vocational or technical) qualifications in preschool education.

**Educators are trained in special or inclusive education (%)**

This indicator is based on existing NEDB indicators such as the number of educators who have completed an inclusive education training program (refresher)/with training in special or inclusive education.

**Educators are up to date with their professional development (%)**

This indicator is based on the current NEDB indicator outlining whether educators are up-to-date with their professional development requirements and used to calculate the number of educators who have completed in-service training requirements.

1.2. Pedagogy

Pedagogical indicators have been shown to affect preschool program quality and influence children's outcomes. A subset of indicators has been identified as key indicators to evaluate preschool program quality. Additional information about the definitions and how to complete each indicator is included below:
1.2.i. Structure of learning activities

Program duration (hours/day)

This new indicator records total daily program length, i.e. the amount of time (in hours) children spend at preschool engaged in activities, either with educators or under their supervision. The indicator is entered as a numerical value referring to the number of hours per day.

Amount of time children have for indoor free play (minutes/day)

This new indicator records the period of time in minutes per day that children engage in indoor free play. Free play is defined as self-directed play, learning opportunities and activities. Free play is considered child-directed play, when the children are allowed to choose activities, materials and companions for themselves. During free play, educators respond to children's needs but do not lead structured lessons. If educators have to explain game rules or choose games for the children to play, this should not be counted toward free play time. The response should capture the average number of minutes allocated to indoor free play, per child, per day, and not include outdoor free play. The indicator can be completed according to available timetables or based on classroom observations, and separately for each age preschool group. The indicator should be entered as a numerical value referring to the number of minutes per day, with '0' meaning all children's activities are structured and directed by educators. 

Online module hint: Time when children play indoors on their own without educator guidance

Amount of time children have for outdoor free play (minutes/day)

This new indicator records the period of time in minutes per day that children engage in outdoor free play. Free play is defined as self-directed play, learning opportunities and activities. Free play is considered child-directed play, when the children are allowed to choose activities, materials and companions for themselves. During free play, educators respond to children's needs but do not lead structured lessons. If educators have to explain game rules or choose games for the children to play, this should not be counted toward free play time. The response should capture the average number of minutes allocated to outdoor free play, per child, per day, and include only the time children play outside. The indicator should only apply to preschools with outdoor space available to children. It can be completed according to available timetables or based on classroom observations, and separately for each preschool age group. The indicator should be entered as a numerical value referring to the number of minutes per day, with '0' meaning all children's activities are structured and directed by educators.

Online module hint: Time when children play outside on their own without educator guidance

Amount of time educators spend reading to children (minutes/day)

The indicator reports the amount of time educators read to children and give them the opportunity to experience seeing words and looking at pictures in a book or relating to a text. It does not include cases when educators narrate a story to children without using a book or discussion time after reading. The figure provided should capture the average number of minutes educators spend reading to children, per day, with '0' indicating that educators do not read to children.

Online module hint: The indicator does not include when educators narrate stories to children without using a book

1.2.ii. Support for effective pedagogy and planning

Frequency of classroom teaching observation and feedback to educators (times/year)

This new indicator reports the frequency that preschool directors, methodological and pedagogical leaders 1) conduct standardized classroom teaching observations using a consistent tool and 2)
provide observation feedback to educators. The term “standardized” means conducting observations using a valid and reliable tool consistently/without variation. It may be an existing and tested tool such as the ECERS or one developed by the preschool. The figure generated should capture the number of times observations are conducted and feedback provided per calendar year. Observations that do not lead to feedback to educators do not count towards the indicator, which is recorded as a numerical value.

**Tool used to guide observation (free text)**

If a response to the previous indicator is > 0, the indicator then asks for the name of the tool (for example, ECERS) or a description of the tool the preschool used to conduct the classroom teaching observation.

*Online module hint: if your preschool uses its own tool, please provide a brief overview of it*

**Time available to educators for planning (hours/week)**

This indicator asks evaluators to report the number of hours per week educators have available to plan classroom lessons and instructions. The hours in question are defined as paid time or educator working hours allocated for lesson planning and setting up classroom environments to facilitate learning. The relevant data can be gathered from existing contracts between educators and preschools showing how many hours per week educators should spend on planning, or how much time they have available outside of their face-to-face teaching responsibilities and other specific duties. If the information is not available in educator contracts, it can be gathered through consultation with service directors and educators.

*Online module hint: This is defined as paid time or educator working hours allocated for lesson planning and setting up classroom environments to facilitate learning.*

**Availability of pedagogues trained to work as coaches/trainers for other pedagogues (yes/no)**

The indicator asks evaluators to report whether their particular preschool employs a pedagogue trained as a coach or trainer for other educators. It reports whether program staff exist that can coach educators teaching children in the program. The set responses for the indicator are either ‘Yes’ or ‘No’.

**Availability of a curriculum/program for each individual child with special educational needs (yes/no)**

The indicator asks evaluators to report whether all children with special needs have individual education plans outlining learning supports and goals to support their unique needs and learning trajectory. Children with special needs are defined as those with special needs or disabilities, requiring speech therapy or who have been referred for medical checks. The indicator does not apply to preschools without children with special educational needs. The set responses for the indicator are either ‘Yes’ or ‘No’.

**Monitoring and tracking of each child’s developmental strengths and weaknesses (yes/no)**

The indicator asks educators to report whether a process or system are in place to follow up on the assessment of a child’s individual development (according to methodological recommendations for school readiness assessments from the Early Childhood Development Institute) to help identify appropriately whether a referral or diagnosis are needed for children showing signs of needing additional learning support. The set responses for the indicator are either ‘Yes’ or ‘No’.
1.2.iii. Educator-child interaction

These indicators cover either all educators, educators working with children aged 0-2 years or educators working with children aged 3-5 years.

**Educators provide warm and responsive contact with children (all educators) (all educators do, some educators do, few educators/none do)**

The indicator asks whether educators consistently use appropriate, warm, and responsive contact with children. Warm and responsive contact is demonstrated by appropriate physical closeness, shared activities, social conversations and acceptable displays of affection such as smiles, hugs, high fives or other forms of contact that provide comfort and encouragement to children. The indicator should be based on preschool director or methodologist/pedagogical leader observations. The term ‘consistently’ means that the educator shows the relevant traits with all children, all or most of the time (for over 75% of instruction time). The response will be ‘all educators do’ if all educators consistently show the required traits with all children, and ‘some educators do’ if educators show the required traits for less than 75% of instruction time, and “few educators/none do” if educators show the required traits for less than 25% of instruction time or never.

*Online module hint: The indicator should be completed in based on actual observations, rather than existing standards*

**Educators model language usage by describing actions and events (children 0-2 years old) (all educators do, some educators do, few educators/none do)**

The indicator asks programs to report whether educators for children aged 0-2 years consistently model classroom language use. Educators do so by using complete and varied sentences to describe their own actions (for example, “I am picking you up to give you a bottle” to a younger infant), classroom events (for example, “here are your parents, it is time to go home”) and objects that children are playing with (for example, “you are playing with blocks to build a tower”) throughout the day. The indicator should be based on preschool director or methodologist/pedagogical leader observations. The term ‘consistently’ means that the educator shows the relevant traits with all children, all or most of the time (for over 75% of instruction time). The response will be ‘all educators do’ if all educators consistently show the required traits with all children, and ‘some educators do’ if educators show the required traits for less than 75% of instruction time, and “few educators/none do” if educators show the required traits for less than 25% of instruction time or never.

*Online module hint: The indicator should be completed based on actual observations, rather than existing standards. Educators display the required traits by using complete and varied sentences to describe their actions*

**Educators are aware and responsive to children’s emotions and needs (children 0-2 years old) (all educators do, some educators do, few educators/none do)**

The indicator asks programs to report whether educators working with children aged 0-2 years consistently displays awareness of children’s emotions and needs. Educators display awareness by acknowledging verbally or physically children who are upset and responding to their requests for attention, also adjusting their actions based on the individual needs of the children. Children may also seek out an educator to be soothed or calmed by the educator. The indicator should be based on preschool director, methodologist or pedagogical leader observations. The term ‘consistently’ means that the educator shows the relevant traits with all children, all or most of the time (for over 75% of instruction time). The response will be ‘all educators do’ if all educators consistently show the required traits with all children, and ‘some educators do’ if educators show the required traits for less than 75% of instruction time, and “few educators/none do” if educators show the required traits for less than 25% of instruction time or never.

*Online module hint: The indicator should be completed based on actual observations, rather than existing standards*
**Educators provide face-to-face instruction at the child’s level (children 3-5 years old) (all educators do, some educators do, few educators/none do)**

The indicator asks programs to report whether educators working with children aged 3-5 years consistently kneel down or move to be at a child’s eye level when speaking with them. The term ‘consistently’ means that the educator shows the relevant traits with all children, all or most of the time (for over 75% of instruction time). For example, to support a child sitting on the floor and using building blocks, educators should sit on the floor in front of the child and make eye contact to facilitate learning. The indicator should be based on preschool director, methodologist or pedagogical leader observations, with responses being ‘all educators do’ if all educators consistently show the required traits with all children, and ‘some educators do” if educators show the required traits for less than 75% of instruction time, and “few educators/none do” if educators show the required traits for less than 25% of instruction time or never.

*Online module hint: The indicator should be completed based on actual observations, rather than existing standards, and covers the physical action of interacting with children at their level*

**Educators acknowledge children for their accomplishments and efforts (children 3-5 years old) (all educators do, some educators do, few educators/none do)**

The indicator asks programs to report whether educators working with children aged 3-5 years consistently communicate acknowledgement of their children’s accomplishments and efforts as they are learning. Acknowledgements can be verbal, physical, or written communication (such as saying “you did a good job on washing your hands” or using sign language to indicate a positive reinforcement for a child or a sign that shows a smile) to recognize engagement and the mastery of learning/play. The indicator should be based on preschool director, methodologist or pedagogical leader observations. The term ‘consistently’ means that the educator shows the relevant traits with all children, all or most of the time (for over 75% of instruction time). The response will be ‘all educators do’ if all educators consistently show the required traits with all children, and ‘some educators do” if educators show the required traits for less than 75% of instruction time, and “few educators/none do” if educators show the required traits for less than 25% of instruction time or never.

*Online module hint: The indicator should be completed based on actual observations, rather than existing standards*

**1.2.iv. Transition support (only for children transitioning classrooms)**

The preschool organization arranges for children to attend the next group level or school first grade (yes/no)

The indicator explores whether educators adopt a policy of having children visit the school/classroom they will be transitioning to. Activities facilitating transition include taking the child to a new classroom, introducing them to new educators, showing them a new building and/or preparing activities that discuss what to expect in their new classroom. The set responses for the indicator are either ‘Yes’ or ‘No’.

**Educators interact with primary school educators on child transition to primary school (yes/no)**

The indicator reports whether final year preschool group educators interact with local primary school educators to support their children's transition. Formal communication includes preparing written reports or participating in pedagogical councils and other meetings where they can share information on their pupils’ school readiness and discuss ways to make the transition smoother. Meetings should be conducted at least once a year and discuss all children transitioning. The set responses for the indicator are either ‘Yes’ or ‘No’.
Families receive information on and are involved in transition discussions (yes/no)

The indicator records whether preschool program staff/educators offer information to families on their child's transition to a new classroom (e.g., expectations and what emotions/behaviors children may experience) and engage them in plans to support the transition process. Information can be given in writing or verbally. The set responses for the indicator are either ‘Yes’ or ‘No’.

1.3. Family Engagement

Strong relationships between preschool programs and families create a better link between preschool learning and experiences at home. Research has found that strong relationships can support general learning and development. Partnerships with families also give educators better knowledge of the children they work with.

1.3.i. Communication with families

Frequency of written child development reports provided to families (reports/year)

The indicator asks programs for the number of reports families receive on their child’s development and learning over the year. Written reports can be provided in hard copy, sent via mail, mobile or web application. Values for the indicator are numerical and should reflect the number of reports per child per year.

Frequency of one-to-one educator meetings with parents on child progress (meetings/year)

The indicator asks programs to report how often educators hold individual meetings with parents to discuss their child's learning and development throughout the school year. Applicable meetings include routine scheduled meetings with families (and do not include ad hoc meetings or those requested in addition to what is considered the required amount by the program). Meetings can be face-to-face, by telephone or online. Only individual meetings between educators and parents are considered; group meeting do not count. Meetings during drop-off and pick-up hours only count if educators and parents discuss a child's development and feedback is provided during the encounter. Indicator values are numerical and show each educator’s average number of meetings with parents over the year.

*Online module hint:* The indicator does not include group information sessions. Meetings during drop-off and pick-up hours will only be counted if educators and parents discuss a child’s development and feedback is provided.

All parents are asked about their concerns and priorities for their child (yes/no)

If the response to the previous indicator is > 0, this indicator will ask whether 1) parents are asked about the concerns and priorities they have for their child in meetings with educators and 2) the information in question recorded or written down. The response value is ‘Yes’ if all educators systematically collect and record information from parents during meetings or ‘No’ if they do not.

Parents are consulted/involved in developing individual education plans (most of the time, sometimes, rarely/never)

If the response to the indicator asking programs to report “whether children with special needs have individual education plans” was ‘Yes’, the indicator asks programs to report whether parents are engaged in developing individual education plans. Consultation is defined as active two-way communication discussion/conversation with parent input, written or verbal contact with parents, and/or reviewing individual education plans. The response set for the indicator is either ‘mostly’, ‘sometimes’ or ‘rarely/never’.
1.3.ii. Parent involvement in program planning

Parent representative involvement in preschool planning processes (yes/no)

The indicator asks programs to report whether parents are engaged in preschool planning and decision making, and identifies whether parent committees are consulted on preschool planning and decision making, or if parent representatives are formally involved in preschool program planning and decision making, for example on preschool management boards. The set responses for the indicator are either 'Yes' or 'No'.

1.4. Environment

1.4.i. Physical space for children

The preschool organization has completed and passed all attestation processes (yes/no)

The indicator is based on existing NEDB indicators on whether a specific preschool has completed attestation, and therefore deemed to comply with state standards, including on health and safety.

Indoor area available to children (m²)

The indicator measures a preschool’s total indoor space available to all children (including children with disabilities) during the teaching and learning period. Measurement should include total classroom area as well as any other facilities to which children have free access, including bathrooms, indoor play and eating areas. Values entered for the indicator are numeric (measured in m²).

Online module hint: Please exclude all areas that children have no access to.

Outdoor area available to children (m²)

The indicator measures the total preschool outdoor area available to all children (including those with disabilities) for learning purposes during the school day. Any outdoor area should be private for preschool use only and include clear boundaries for the children (i.e., fence/wall/demarcation). The indicator excludes public parks or other public spaces adjacent to or outside of the preschool that educators may occasionally take children to. Indicator values are numeric (measured in m²).

Online module hint: Please exclude all areas that children have no access to.

Children with special needs spend all their time in the same room as children with no special needs (yes/no)

The indicator reports whether preschool children with special needs spend their school day in the same room or space as children with no special needs. It asks about inclusive classes and includes children receiving specialized therapy or one-to-one support in the classroom. The indicator response is ‘Yes’ if all children with special needs spend all of their school day in the same rooms as children with no special needs. If children with special needs spend their teaching and learning during any part of the day in a separate room or space (for example “correctional” classes), the indicator response is ‘No’.

Online module hint: If children with special needs spend their teaching and learning during any part of the day in a separate room or space (for example “correctional” classes), the indicator response is ‘No’.

1.4.ii. Availability of developmentally appropriate play and reading materials

Toys/play materials for children aged < 1 (#)

The indicator reports the number of preschool toys/play materials that are developmentally appropriate for children aged less than 1 year. For toys/play materials to be counted, children of the relevant age group must have continuous access to them, which means they must be kept in the same space or area as the children and that children are able and allowed to use them. This does not include items kept in
storage or rooms and spaces that are not accessible to children. Suitable toys/play materials include things they can look at, hold, shake or make noise with, build, drop and play pretend with (for example, rattles, mobiles, soft toys), and should not contain small parts that can be swallowed. Indicator values are numeric and show the number of toys/play materials that are continuously available. Toy sets should be counted rather than individual items to ensure the indicator is completed correctly. For example, a building block set with 100 individual pieces should be recognized as one toy rather than 100.

*Online module hint:* The criteria for the indicator is that toys/play materials should be kept in the same space or area as the children and that the children are able and allowed to use them.

**Toys/play materials for children aged 1-3 (#)**

The indicator reports the number of preschool toys/play materials that are developmentally appropriate for children between 1 and 3 years old. For toys/play materials to be counted, children of the relevant age group must have continuous access to them, which means they must be kept in the same space or area as the children and that children are able and allowed to use them. This does not include items kept in storage or rooms or spaces that are not accessible to the children. Suitable toys/play materials include things they can build, drop or create; pretend, role play and use their large and small muscles with; look at, hold, shake or make noise with (including blocks, crayons, toy phones, puppets, stuffed toys, play vehicles and dress up clothes), and should not contain small parts that can be swallowed. Indicator values are numeric, referring to the number of toys/play materials continuously available to the age group in question. Toy sets should be counted rather than individual items to ensure the indicator is completed correctly. For example, a building block set with 100 individual pieces should be recognized as one toy rather than 100.

*Online module hint:* The criteria for the indicator is that toys/play materials should be kept in the same space or area as the children and that the children are able and allowed to use them.

**Toys/play materials for children aged 3-5 (#)**

The indicator reports the number of preschool toys/play materials that are developmentally appropriate for children between 3 and 5 years old. For toys/play materials to be counted, children of the relevant age group must have continuous access to them, which means they must be kept in the same space or area as the children and that children are able and allowed to use them. This does not include items kept in storage or rooms or spaces that are not accessible to the children. Suitable toys/play materials include things they can build or create; pretend and solve problems with (including blocks, crayons, markers, puzzles and modeling clay). Indicator values are numeric, referring to the number of toys/play materials continuously available to the age group in question. Toy sets should be counted rather than individual items to ensure the indicator is completed correctly. For example, a building block set with 100 individual pieces should be recognized as one toy rather than 100.

*Online module hint:* The criteria for the indicator is that toys/play materials should be kept in the same space or area as the children and that the children are able and allowed to use them.

**Reading/picture/story books for children aged < 1 (#)**

The indicator reports the number of preschool picture/story books considered developmentally appropriate for children under the age of one. For books to be counted, children of the relevant age group must have continuous access to them. This does not include books kept in storage or rooms or spaces that are not accessible to the children. Books suitable for this age group include those with nursery rhymes, poems and simple songs. Indicator values are numeric, referring to the number of books continuously available to the age group in question.

*Online module hint:* The indicator does not include books in storage or kept in rooms/areas that are not accessible to children.
Reading/picture/story books for children aged 1-3 (#)

The indicator reports the number of preschool reading/picture/story books considered developmentally appropriate for children aged 1-3. For books to be counted, children of the relevant age group must have continuous access to them. The indicator does not include books in storage or kept in rooms/areas that are not accessible to children. Books suitable for this age group include card books with simple illustrations or photographs of real objects and some simple words and/or stories. Indicator values are numeric, referring to the number of books continuously available to the age group in question.

*Online module hint: The indicator does not include books in storage or kept in rooms/areas that are not accessible to children.*

Reading/picture/story books for children aged 3-5 (#)

The indicator reports the number of reading/picture/story books in the preschool that are developmentally appropriate for children 3-5 years old. For toys/play materials to be counted, children of the relevant age group must have continuous access to the books. The indicator does not include books in storage or kept in rooms/areas that are not accessible to children. Books suitable for this age group include picture books with more words and more detailed pictures than those for toddlers. Indicator values are numeric, referring to the number of books continuously available to the age group in question.

*Online module hint: The indicator does not include books in storage or kept in rooms/areas that are not accessible to children.*

Learning materials for children of different abilities (yes/no)

The indicator asks programs to report whether they have available learning materials that accommodate the developmental and learning needs of children with different abilities, such as braille books, audio books, soft books, and/or other items that give children with special needs access to learning materials and learning. The set responses for the indicator are either ‘Yes’ or ‘No’.
## APPENDIX 2:
GUIDELINES FOR COGNITIVE INTERVIEWS

<table>
<thead>
<tr>
<th>Code</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Staffing</strong></td>
</tr>
<tr>
<td></td>
<td>Learning support assistants to support children with special needs</td>
</tr>
<tr>
<td>2.</td>
<td><strong>Pedagogy</strong></td>
</tr>
<tr>
<td></td>
<td>Structure of learning activities</td>
</tr>
<tr>
<td></td>
<td>Free play</td>
</tr>
<tr>
<td></td>
<td>Reading time</td>
</tr>
<tr>
<td></td>
<td>Support for effective pedagogy and planning</td>
</tr>
<tr>
<td></td>
<td>Individual learning plans</td>
</tr>
<tr>
<td></td>
<td>Monitoring and tracking each child’s developmental strengths and weaknesses</td>
</tr>
<tr>
<td></td>
<td>Pedagogues trained to work as coaches/trainers</td>
</tr>
<tr>
<td></td>
<td>Planning time</td>
</tr>
<tr>
<td></td>
<td>Teaching observations and feedback</td>
</tr>
<tr>
<td></td>
<td>Transition support</td>
</tr>
<tr>
<td></td>
<td>Attending next level groups</td>
</tr>
<tr>
<td></td>
<td>Interaction with primary school educators</td>
</tr>
<tr>
<td></td>
<td>Transition discussions</td>
</tr>
<tr>
<td></td>
<td>Educator-child interaction</td>
</tr>
<tr>
<td></td>
<td>Acknowledge children for their accomplishments</td>
</tr>
<tr>
<td></td>
<td>Communicating physically at the child’s level</td>
</tr>
<tr>
<td></td>
<td>Model language</td>
</tr>
<tr>
<td></td>
<td>Warm and responsive contact with children</td>
</tr>
<tr>
<td>3.</td>
<td><strong>Family Engagement</strong></td>
</tr>
<tr>
<td></td>
<td>Communication with families</td>
</tr>
<tr>
<td></td>
<td>Child concerns and priorities</td>
</tr>
<tr>
<td></td>
<td>Consulting parents</td>
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<tr>
<td></td>
<td>One-to-one meetings with parents</td>
</tr>
<tr>
<td></td>
<td>Written reports to parents</td>
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<tr>
<td></td>
<td>Parent involvement in program planning</td>
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<tr>
<td></td>
<td>Family involvement</td>
</tr>
<tr>
<td>4.</td>
<td><strong>Environment</strong></td>
</tr>
<tr>
<td></td>
<td>Learning materials for children of different abilities</td>
</tr>
<tr>
<td></td>
<td>Reading, picture and story books for children</td>
</tr>
<tr>
<td></td>
<td>Indoor area available to children</td>
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<tr>
<td></td>
<td>Outdoor area available to children</td>
</tr>
<tr>
<td></td>
<td>Spending time in the same room</td>
</tr>
<tr>
<td></td>
<td>Children with special educational needs</td>
</tr>
<tr>
<td></td>
<td>Toys and play materials for children</td>
</tr>
<tr>
<td></td>
<td>Confidence in answers</td>
</tr>
<tr>
<td></td>
<td>Self-assessment feedback</td>
</tr>
<tr>
<td>Issues with indicators</td>
<td></td>
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<tr>
<td>--------------------------------</td>
<td></td>
</tr>
<tr>
<td>Process descriptions</td>
<td></td>
</tr>
<tr>
<td>Calculation process</td>
<td></td>
</tr>
<tr>
<td>Process challenges faced</td>
<td></td>
</tr>
<tr>
<td>Process stakeholders</td>
<td></td>
</tr>
<tr>
<td>Time spent in completing the module</td>
<td></td>
</tr>
<tr>
<td>Using the manual</td>
<td></td>
</tr>
<tr>
<td>Feedback on the manual</td>
<td></td>
</tr>
<tr>
<td>Reading the manual</td>
<td></td>
</tr>
</tbody>
</table>
Table 3A below summarizes the work done on certain indicators to convert them to binary variables. It also notes which indicators were not used in the analysis due to a large volume of missing data caused by question filters that were programmed into the online module, which was deemed essential as a Cronbach's alpha measurement is dependent on the number of observations made. Reference points for identifying cut-offs were drawn from the benchmarks section of this report (Section 2.3). Unless otherwise stated in Table 3A, the reference point for all other indicators that generated continuous data with limited literature on standards or benchmarks was 80%.

### Table 3A: Overview of data adjustments to variables for the Cronbach's alpha calculation

<table>
<thead>
<tr>
<th>Areas and indicators</th>
<th>Overview of adjustments made in preparation for the Cronbach's alpha calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. STAFFING</strong></td>
<td></td>
</tr>
<tr>
<td>1.i. Staffing ratio</td>
<td></td>
</tr>
<tr>
<td>Ratio of children to educators</td>
<td>Benchmark of 14 to one based on the OECD average. Ratios of 14 to one and below were recoded as 1; ratios of above 14 to one were recoded as 0.</td>
</tr>
<tr>
<td>Learning support assistants to support children with special needs (#)</td>
<td>This indicator was not used in the Cronbach's alpha analysis as it missed a large number of responses due to being filtered exclusively for schools teaching children with special needs</td>
</tr>
<tr>
<td>1.ii. Staff qualifications</td>
<td></td>
</tr>
<tr>
<td>Director holds a university pre-service qualification and has experience in preschool education (yes/no)</td>
<td>No adjustment needed – data is already binary</td>
</tr>
<tr>
<td>Educators hold university pre-service qualifications in preschool education (%)</td>
<td>Values of 60% and above were recoded as 1, and values below 60% were recoded as 0.</td>
</tr>
<tr>
<td>Educators are trained in special or inclusive education (%)</td>
<td>Values of 60% and above were recoded as 1, and values below 60% were recoded as 0</td>
</tr>
<tr>
<td>Educators are up to date with their professional development (%)</td>
<td>Values of 60% and above were recoded as 1, and values below 60% were recoded as 0</td>
</tr>
<tr>
<td><strong>2. PEDAGOGY</strong></td>
<td></td>
</tr>
<tr>
<td>2.i. Structure of learning activities</td>
<td></td>
</tr>
<tr>
<td>Amount of time children have for indoor free play (for 2 years and younger) (minutes/day)</td>
<td>The indicators on the amount of free time children have for indoor free play were averaged across the different age groups to limit the number of missing values in the analysis. The averaged value was then transformed to binary, with values of 15 and above being recoded as 1, and values below 15 being recorded as 0.</td>
</tr>
<tr>
<td>Amount of time children have for indoor free play (minutes/day) (for 5-6 year olds)</td>
<td>Values of 10 minutes or more of reading were recoded as 1. Values below 10 were recoded as 0</td>
</tr>
<tr>
<td>Amount of time educators spend reading to children (minutes/day)</td>
<td></td>
</tr>
</tbody>
</table>

### 2.ii. Support for effective pedagogy and planning

| Frequency of classroom teaching observation and feedback (times/year) | Values of 3 were recoded as 1. Values above or below 3 were recoded as 0. |
| Tool used to guide observation (if previous indicator is >0) (free text) | This indicator was not used in the Cronbach's alpha analysis as it was an open-ended text response |
| Time available to educators for planning (hours/week) | Values of 5 and above were recoded as 0. Values below 5 were recoded as 0. |
| Availability of pedagogue trained to serve as a coach/trainer (yes/no) | No adjustment needed – data is already binary. |
| Availability of a curriculum/program for each individual child with special educational needs (yes/no) | This indicator was not used in the Cronbach's alpha analysis as it missed a large number of responses due to being filtered exclusively for schools teaching children with special needs |
| Monitoring and tracking of each child's developmental strengths and weaknesses (yes/no) | No adjustment needed – data is already binary |

### 2.iii. Educator-child interaction

| Educators provide warm and responsive contact with children (all children) (yes/no) | No adjustment needed – data is already binary |
| Educators model language usage by describing actions and events (children 0-2 years old) (yes/no) |
| Educators are aware and responsive to children's emotions and needs (children 0-2 years old) (yes/no) | The age-specific educator-child interaction indicators were averaged to remove cases where values were missing. “Yes” responses were recoded as 1, and “no” responses were recoded as 0 and then averaged across the indicators with valid responses. The average scores were then turned into binary, with values of 0.5 and above being recoded as 1, and values below 0.5 being recoded as 0 |
| Educators interact physically at the child's level for face-to-face instruction (children aged 3-5 years old) (yes/no) |
| Educators acknowledge children for their accomplishments and efforts (children 3-5 years old) (yes/no) |

### 2.iv. Transition support (only for children transitioning classrooms)

| The preschool organization arranges for children to attend the next group level or first school grade (yes/no) | No adjustment needed – data is already binary |
| Educators interact with primary school educators on children's transition (yes/no) | No adjustment needed – data is already binary |
| Families receive information and are engaged in transition discussion (yes/no) | No adjustment needed – data is already binary |
### 3. FAMILY ENGAGEMENT

#### 3.i. Communication with families

<table>
<thead>
<tr>
<th>Frequency of written child development reports provided to families (# reports/year)</th>
<th>Values of 2 or above were recoded as 1. Values of below 2 were recoded as 0.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of one-to-one educator meetings with parents on child progress (meetings/year)</td>
<td>Values of 2 or above were recoded as 1. Values of below 2 were recoded as 0.</td>
</tr>
<tr>
<td>All parents are asked about their concerns and priorities about their child (yes/no)</td>
<td>No adjustment needed – data is already binary</td>
</tr>
<tr>
<td>Parents are consulted/involved in developing individual education plans (yes/no)</td>
<td>No adjustment needed – data is already binary</td>
</tr>
</tbody>
</table>

#### 3.ii. Parent involvement in program planning

| Parent representative involvement in preschool planning processes (yes/no) | No adjustment needed – data is already binary |

### 4. ENVIRONMENT

#### 4.i. Physical space for children

| Preschool organization has completed and passed all attestation processes (yes/no) | No adjustment needed – data is already binary |
| Indoor area available to children (m²) | The area covered by indoor and outdoor spaces was divided by the total number of children at the specific pre-school. The resulting data was then recoded to binary as follows: indoor area of 3m² and above was recoded as 1, while any values below were recoded as 0. Meanwhile, values of 8m² and above were recoded as 1 for outdoor space, and any values below were recoded as 0. |
| Outdoor area available to children (m²) | |
| Children with special needs spend all their time in the same room/space as children with no special needs (yes/no) | This indicator was not used in the Cronbach's alpha analysis due to a large number of missing responses. |

#### 4.ii. Availability of developmentally appropriate play and reading materials

| Toys/play materials for children aged < 1 (#) | Data from the three toys/play material indicators and three reading/picture/story book indicators were averaged to minimize the number of missing values arising from age-group respondent filtering. The averages of toys and books for all pilot preschools were then recorded. Preschools with toys and books at 60% or higher than the average were recoded as 1. Values below 60% were recoded as 0. |
| Toys/play materials for children aged 1-3 (#) | |
| Toys/play materials for children aged 3-5 (#) | |
| Reading/picture/story books for children aged < 1 (#) | This indicator was not used in the Cronbach's alpha analysis as it missed a large number of responses due to being filtered exclusively for schools teaching children with special needs |
| Reading/picture/story books for children aged 1-3 (#) | |
| Reading/picture/story books for children aged 3-5 (#) | |
| Learning materials for children of different abilities (yes/no) | |
This appendix provides a descriptive analysis of the pilot data indicators that were not highlighted in the body of the report, comparing them against cognitive interview data where possible.

**Staffing indicators**

Staff qualification information was pre-completed using existing NEDB data. Directors were considered qualified if they had at least two years of pedagogical work experience or university (higher, vocational or technical) qualifications in preschool education. Only 11 percent of directors met this qualification. Of the educators in the sample, 16 percent had HPE training, which is considered the pre-service training in Kazakhstan, while 9 percent had training in special or inclusive education. This data was not validated in cognitive interviews, as it had been taken from existing NEDB indicators, the digital version of which was launched in Kazakhstan in 2012.

**Pedagogy indicators**

Preschools were also asked about their availability to produce individual curriculums/programs for children with special educational needs. 70 percent for the total sample reported having resources to produce them, with some variation among the regions (for example, 56 percent of preschools in North-Kazakhstan region reported having the required resources, compared to 83 percent in Turkistan region). Given that almost all preschools responding to this cognitive interview component mentioned not having any children enrolled with special educational needs, the results were not validated through qualitative data.

Another indicator was used to explore how educators monitor and track their children's developmental strengths and weaknesses, with 95% reporting active monitoring. The results were validated in the cognitive interviews, as most preschools reported that monitoring is an essential part of their activities. Most preschools reported conducting monitoring twice a year, once at the start and once at the end of the school year, while three preschools also reported conducting mid-year monitoring.

The module also explored the time educators spend on essential class planning (Heikka et al., 2022). This is important as planning should be paid, but this is not always the case and payment provisions are missing from educator contracts (Britton et al., 2016). The sampled preschools reported that educators have 11 hours per week to prepare for lessons, with little variation across the regions (an average of 9 to 12 hours across the sampled regions). However, interview data suggests some confusion may exist around the indicator as some preschools seemed to be unsure if it referred to daily or longer-term planning, i.e., monthly or annual planning. Meanwhile, one preschool reported that educators spend 25 hours per week on planning, which is actually their total working hours. Three preschools reported that educators plan while children are sleeping, which is roughly equivalent to an hour a day or five hours per week. This is less than the average reported planning time taken from the quantitative pilot, which suggests the indicator may require additional clarification.

The availability of pedagogues trained to serve as coaches/trainers for other pedagogues was also explored. On average, more than one third of the sample (38 percent) reported they had a trained pedagogue available, with high variation across the regions (Figure 4A). Having said that, cognitive interviews showed that this was one of the most misunderstood indicators. For example, three preschool administrators understood the term “coach” to mean a physical education teacher, one understood it to mean a trainer providing support to caregivers, while another preschool assumed the person in question would be working with children with disabilities. A hint was added in the manual and online self-assessment module to reduce any future confusion.
Some indicators were only posed to preschools teaching children aged 0-2, covering language modeling and teachers being aware and responsive to children’s needs. There was a high proportion of missing responses, which may suggest further logic chains need to be integrated into the online module. The percentage of pilot preschools reporting educators using model language for children aged 0-2 was high at 87 percent. However, there was some regional variation, with only 66 percent of preschools in North-Kazakhstan region reporting that educators used model language, compared to 94 percent in East-Kazakhstan\textsuperscript{27}. Findings from cognitive interviews demonstrate that the indicator had been misunderstood. Two respondents reported understanding “model language” as educators not raising their voices when talking to children, while two others reported understanding it as a requirement for educators to speak to children using literary language.

87% of the sample taken reported that “educators interact physically at the child’s level for face-to-face instruction.” Some variation was seen across the regions, with 100 percent of preschools responding positively in North-Kazakhstan region compared to 80 percent in Atyrau and Turkistan regions (Figure 4B). According to cognitive interviews, seven preschool organizations understood the indicator figuratively, as talking to children in a language they can understand, rather than the physical action of getting down to a child’s level. The manual has been revised to add a more detailed explanation of the indicator.

\textsuperscript{27} This question was only posed to preschools teaching children aged 0-2, and those with children aged 0-2. The group sub-sample for the pilot sample was made up of 78 preschools.
Indicators outlining preschool support for children’s transition to primary school were also explored. Preschools commonly provided support to children transitioning to primary schools, with little variation across the regions (90 to 96 percent). ECEC educator interaction with primary educators to support transition was also common across the regions, averaging 88 percent, with some regional variation (Figure 4C). Interviews corroborated these findings, as most respondents highlighted that their preschools maintain strong a relationship with primary schools. Five preschool organizations mentioned organizing school visits for children enrolled in the final preschool year to learn acceptable school behaviors, see the school building and classrooms, and meet their future educator. Respondents also mentioned that even after transition, they usually maintained contact with primary educators. One preschool representative from Turkistan region mentioned that:

“We would often visit schools in the first half of the year to see how the children that had left us were getting on”

Turkistan region kindergarten

Figure 4C: Percentage of pilot preschools reporting that educators interact with primary school educators on children’s transition, by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>88%</td>
</tr>
<tr>
<td>Turkistan region</td>
<td>86%</td>
</tr>
<tr>
<td>North-Kazakhstan region</td>
<td>91%</td>
</tr>
<tr>
<td>Karagandy region</td>
<td>90%</td>
</tr>
<tr>
<td>East-Kazakhstan region</td>
<td>85%</td>
</tr>
<tr>
<td>Atyrau region</td>
<td>97%</td>
</tr>
</tbody>
</table>

95 percent of preschools across all regions reported engaging parents with information and discussions on school transition. There was little variation across the regions (93 - 100 percent), which was confirmed in the cognitive interviews. All preschools interviewed highlighted that communication with families is essential, with some preschools reporting they organized educator-parent conferences, online chats or individual meetings. Irrespective of the method used, all respondents reported they had constant contact with families. One preschool mentioned that their psychologist held discussions with the children and their parents to identify if they were ready to move to the next level of education.

Family engagement indicators

Written reports on child development progress averaged three per year across all sampled regions, with some regional variation. Cognitive interviews also demonstrated that written reports were not common among preschools. Most participants reported having ongoing communication and WhatsApp chats with parents to provide feedback, however only five preschools provided written reports according to the cognitive interviews.

97% of all preschools reported having discussed priorities and concerns with parents, with little regional variation (93 to 99 percent). Cognitive interviews highlighted that maintaining contact with
families was a priority for most preschools, with only two preschools mentioning that discussions were not regular and only happened when there were problems with a particular child’s performance or behavior. In addition, an average of 62 percent of preschools reported consulting parents or involving them in the development of individual education plans, with North-Kazakhstan region reporting the highest parental involvement with over 75 percent, and Atyrau region, the lowest, at 56 percent.

**Environmental indicators**

During the cognitive interviews, respondents reported that the information on physical spaces had been easy to completed as it had been mostly available in written documents.
UNICEF Kazakhstan

Address:
📍 Block 1, 10 Beibitshilik Street, Astana, Z10K8H4, Kazakhstan
📞 +7 (7172) 32-28-78

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