Data Management in Early Childhood Care & Education

Pre-Pilot Study in Education Sector
October -September 2020

Report Brief

Acknowledgements

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1. Introduction

This report brief is based on a pre-pilot study conducted in the Mahe-based schools, which were chosen for the case studies after the situation analysis was conducted in the last quarter of 2019. This was to gain a deeper understanding of how schools went about data collection, processing, and reporting. The data management project in IECD draws its inspiration from the recommendation from High-Level ECCE Policy Committee to improve data management issues in ECCE in Seychelles and the first sector to implement the project, coordinated by IECD and the Ministry of Health in 2016. For that study a set of nine WHO referenced indicators were used for the health sector with technical support from World Bank Group and financial assistance from the Government of Japan – Trust Fund. This brief is based on the project replication in the Ministry of Education and Human Resource Development, which commenced in 2019. It is to be noted that this pre-pilot features in the National Action Plans for ECCE 2015 to 2020.

It is to be noted also that the project in education is driven by firm legal requirements, which stipulate that a person or institution may furnish the IECD with the necessary information in a prompt manner in order to carry out its functions (IECD ACT 2014: Part VII – Section 27 (1) & (2)). In addition, the EDUCATION (AMENDMENT) ACT, 2017: (Act 28 of 2017) stipulates:

> ***Part (4) – Section: 46 (Student Record & Report)***
> *(1)   Every head-teacher shall establish and maintain a student record for each student enrolled in the school in accordance with the guidelines provided by the Principal Secretary.*
> *(2) Every school shall provide the parents of a student and the student with a periodic report on the student's academic performance and conduct.*
> *(3) The report referred to in subsection (2) shall be in such form and contain such information as the Principal Secretary may determine.*

and in ***Part (5) – Section: 71 to 76 (Rights and Responsibilities of Teachers)***

> *(71) Qualifications of teachers*
> *(72) Rights of teachers*
> *(73) Performance of professional duties*
> *(74) Responsibilities of teachers, lecturers and instructors*
> *(75) Senior management of schools, etc.*
> *(76) Responsibilities of heads of educational institutions.*

The expectation, therefore, is that schools become fully aware of these requirements and their legally binding obligations to provide information to both the IECD and the MEHRD as may be needed. Such obligations also extend to the provision of timely information to pupils and parents about each child's progress and development. The data management project seeks to assist in strengthening the policy environment at ECD level through readily available information, for reporting and decision-making. The project also aims at building capacity of Education professionals on international ECD indicators and information gathering and processing practices

2. Method

As mentioned, the pre-pilot was focused on the five schools that took part in the situation analysis and these were Anse Boileau Primary, Anse Aux Pins Primary, Bel Eau Primary, Beau Vallon Primary, and Takamaka Primary. The sampling of the schools for the initial phase was purposeful as its main goal was to have an initial insight of the process of indicator calculation and interpretation and challenges that might necessitate further adjustments before the main pilot exercise planned for 2021. Both Excel and SPSS software were used to generate frequencies and cross-tabulations for the determination of the nine selected indicators.

a. Coverage

The exercise covered children aged from 3 ½ to 7 years old. This corresponded to the first two years of crèche education and the first two years of primary education, which fall within the purview of IECD. A total of 790 children were expected to be covered of which 751 were valid cases. A summary is presented in Table 1 below.

Table 1: Number and percentage of children by gender, grade level

			Child gender		
			F	M	Total
Grade Level	C1	N	113	122	235
		Percent	48.1	51.9	100.0
	C2	N	97	148	245
		Percent	39.6	60.4	100.0
	P2	N	132	139	271

	Percent		48.7	51.3	100.0
Total	**N**		342	409	751
	Percent		45.5	54.5	100.0

As for teachers, there was a total of 63, of which 21 were in Crèche Year 1, 22 in Crèche Year 2 and 20 in Primary 2. Data for Primary 1 pupils were almost non-available as they did not take part in any national assessments but with hindsight, their other details should have been included for other indicators.

3. Indicators

For this pre-pilot exercise, a subset of nine indicators was selected. This selection was again purposeful as the participating schools had data readily available. Besides, the selected indicators were used in a training session for the school management personnel as part of the sensitization process. The indicators and method of calculation are presented below. To note, these are organized under three main themes (1) Participation and Access, (2) Achievement and Attainment, and (3) Staffing.

3.1   Indicator Definitions Calculations

Participation and Access

Indicator 1.7 Gender Parity Index

Definition: Ratio of female to male values of a given indicator.

Calculation Method: Divide the female value of a given indicator by that of the male.

Indicator 1.8 Transition Rate

Definition: The number of pupils (or students) admitted to the first grade of a higher level of education in a given year, expressed as a percentage of the number of pupils (or

students) enrolled in the final grade of the lower level of education in the previous year.

Calculation method: Divide the number of new entrants in the first grade of the specified higher cycle or level of education by the number of pupils who were enrolled in the final grade of the preceding cycle or level of education in the previous school year, and multiply by 100.

Achievement and Attainment (Readiness, ALAP, KS 1)

Definition: Percentage distribution of population in year level reaching established national standards in key national assessments with reference to ISCED level 0.

Indicator 2.1 Percentage of Pre-primary Children Having Reached Level of Readiness

Calculation Method: Divide the number of children who have reached a minimum of level 2 on the Readiness assessment divided by the total number of children in the pre-primary age group multiply by 100.

Indicator 2.2 Percentage of Children On Target on ALAP Reading Programme

Calculation Method: Divide the number of children who have reached a minimum of level 2 on the ALAP assessment divided by the total number of children in the crèche- age group multiply by 100.

Indicator 2.3 Percentage of Children on Target on Pre-Numeracy

Calculation Method: Divide the number of children who have reached a minimum of level 2 on the Pre-numeracy assessment divided by the total number of children in the crèche- age group multiply by 100.

Indicator 2.4 Percentage of Pupils Having Reached at Least Level 2 on KS 1 Reading and Numeracy

Calculation method: Divide the number of pupils in year level with respect to the highest level of education attained by the total population of the same age group and multiply by 100.

Staffing

Indicator 4.1 Pupil –Teacher Ratio

Definition: Average number of pupils (students) per teacher at a specific level of education in a given school year.

Calculation method: Divide the total number of pupils enrolled at the specific level of education by the number of teachers teaching pre-dominantly at that level.

Indicator 4.2 Percentage Primary school Teachers who are certificated to teach According to National Standards

Definition: Number of teachers who have received the minimum organized teacher training (pre-service or in-service) required for teaching at the specified level of education in the given country, expressed as a percentage of the total number of teachers at the same level of education.

Indicator 4.3 Percentage Primary school Teachers who are qualified to teach according to National Standards.

Definition: Number of teachers who have the minimum level of qualification required for teaching at the specified level of education in the given country, expressed as a percentage of the total number of teachers at the same level of education.

Calculation Method: Divide the number of teachers of the specified level of education who have received the minimum required teacher qualification by the total number of teachers at the same level of education, and multiply the result by 100.

4. Results

4.1 Access and Participation

Indicator 1.7 Gender Parity

The presentation of results for this pre-pilot exercise starts with gender parity index for each level involved. A summary is presented in Table 2.

Table 2

Grade Level	Gender Parity Index (B:F)
Crèche Y1	1:0.93
Crèche Y2	1:0.66
Primary 2	1:0.95

It can be observed that for this indicator, the parity index showed a balance between the two genders for Crèche year 1 and Primary 2 learners. The figure for Crèche year 2 could be due to missing gender identification in the case of girls.

Indicator 1.8 Transition Rate

For this indicator, it has been possible to calculate the transition rate for children moving from Crèche year 1 to Crèche year 2 for which data are available. There were 245 children in Crèche year 1 in 2019 and 288 in year 2 in 2020. This resulted in a figure of 118 percent. The result was above 100 percent probably due to mobility for this age group.

4.2 Achievement

Table 3

Indicator	N (%)
Indicator 2.1 Percentage of Pre-primary Children Having Reached Level of Readiness	149 (63.4)
Indicator 2.2 Percentage of Children On Target on ALAP Reading Programme	245 (100)
Indicator 2.3 Percentage of Children On Target on Pre-Numeracy	235 (95.9)
Indicator 2.4a Percentage of Pupils Having Reached at Least Level 2 on KS 1 Reading (English)	270 (100)
Indicator 2.4b Percentage of Pupils Having Reached at Least Level 2 on KS 1 Reading (Kreol)	226 (83.7)
Indicator 2.4c Percentage of Pupils Having Reached at Least Level 2 on KS 1 Numeracy	186 (77.8)

The results for these indicators are further disaggregated by gender in Figure 1 below. This is to show that disaggregation is possible for most, if not all, the indicators identified for early childhood.
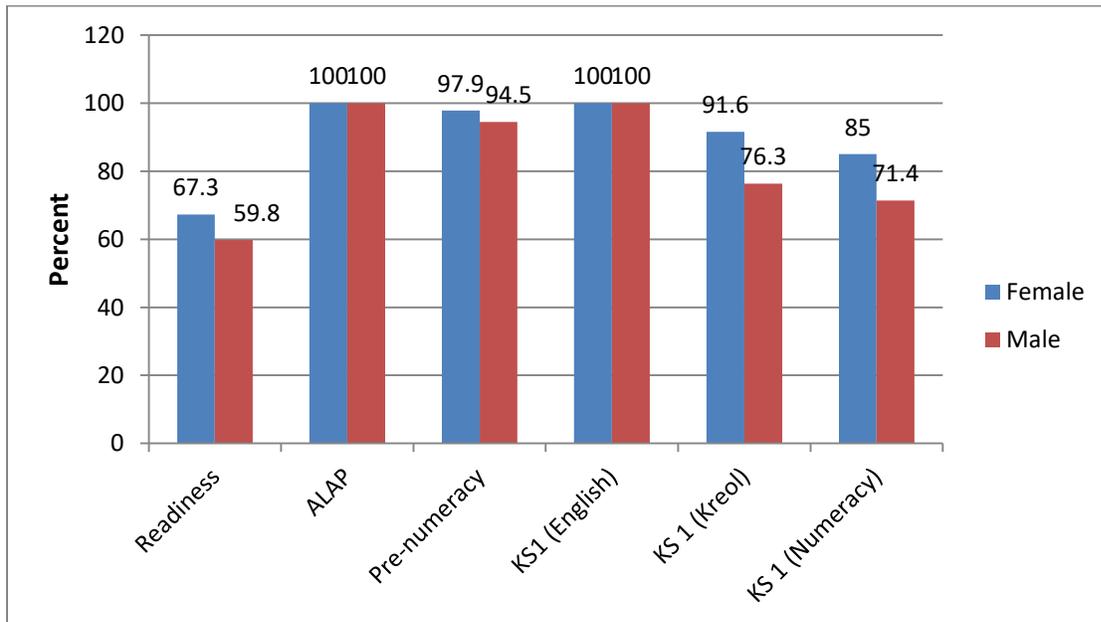

.   **Figure 1: Achievement results by gender**

4.3 Staffing

Three indicators under this theme were considered. The first was the pupil to teacher ratio, the second was about teacher certification and the third about teacher highest educational qualification. However, it is to be noted that at the time of writing the brief, two schools had not provided information for these three indicators. For the purpose of reporting, it would be appropriate to consider the minimum acceptable standard to teach at the early childhood level is certificate and for the highest education qualification, the minimum is the completion of secondary education. The results are presented in Table 4a, 4b and 4c, respectively**.**

Table 4a: Indicator 4.1Pupil –Teacher Ratio

Grade	Pupil: Teacher	Actual Ratio
Crèche Year 1	245:14	17.5:1
Crèche Year 2	254:16	15.9:1
Primary 2	280: 14	20:1

Table 4b: Indicator 4.2 Percentage Primary school Teachers who are certificated to teach according to National Standards

Grade	N (%)
Crèche Year 1	23.8
Crèche Year 2	36.4
Primary 1	25.0
Primary 2	25.0

Table 4c: Indicator 4.3 Percentage Primary school Teachers who are qualified to teach according to National Standards

Grade	(%)
Creche Year 1	92.9
Creche Year 2	81.3
Primary 1	100
Primary 2	100

5. Remarks

This exercise is the first conducted by IECD in education and, as such, it has paved the way for implementing an effective data management strategy based on recognized indicators for early childhood education. It has been possible to cover nine indicators in this pre-pilot conducted in five schools. Leaders from the five schools participated in a training session conducted in late 2020 and they were issued a template for data entry and were exposed to some additional skills in using the Excel spreadsheet, which was well received and appreciated. A number of issues are worthy of mention.

- Schools need to adhere to the same given format for date as this can affect the calculation of indicators that use date or age-specific values.
- Missing values should be avoided as far as possible and where these can be readily obtained for examples, children's gender, teacher qualification and certification levels, and the grade taught, necessary actions need to be taken.
- Data from EMIS were easily obtained and this working relationship should be encouraged and maintained. This could also go further whereby the indicators calculated could be cross-validated for accuracy. In other words, EMIS personnel could cast a critical eye to ensure the integrity of the calculations.
- The participating schools were very receptive when visited by the IECD team to check on progress and provide additional support. This support model should be sustained for the main pilot and beyond.
- It has been demonstrated that disaggregation of data was possible and should be done for indicators where this is recommended.
- For the purpose of this exercise, the minimum national standard for teachers to teach at early childhood was the teacher certificate and for education qualification this was completion of secondary level. As such, these were arbitrary and at some point, these need to be clearly set by the competent authority especially for the main pilot exercise and before project rollout.

6. Conclusion

Since the forum in 2020, it appears that schools and the Ministry's management were receptive to the project. The initial results clearly showed that challenges do persist and training in using the necessary tools needs to be given priority. The short training given to the management staff of the participating schools generated a high level of interest and eagerness. The results showed that gender parity remains a favourable indicator for the country. The assessment results also showed that children met achievement targets at this early stage, generally. The pupil-teacher ratio was also commendable for the grade levels covered. Based on the standards used, children were taught by teachers with a reasonable academic background but with regards to the percentage of teachers who were suitably certified this was relatively low.