Maldives

Early Grade
Reading & Mathematics
Assessments

June 2024

Quality Assurance Department

Ministry of Education
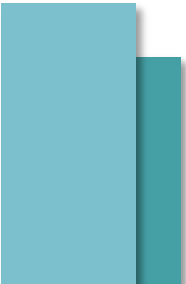
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Maldives

Early Grade Reading (EGRA) and Early Grade Mathematics (EGMA) Assessments

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EXECUTIVE SUMMARY

This report presents findings of the Early Grade Reading Assessment (EGRA) and Early Grade Learning Assessment (EGMA) conducted in 2024. EGRA was administered in two curriculum subjects namely Dhivehi and English and EGMA was administered in Mathematics.

The overall purpose of EGRA and EGMA is to diagnose the level of student competencies with regard to literacy and numeracy. The assessment instruments as well as the marking schemes were developed by QAD in the three subjects Dhivehi, English, and Mathematics. Approximately 5800 2nd graders from 150 schools across the country took part in the assessment. At end of the assessments, marking and data entry were done by schools. Data was analysed by an independent analyst using to IBM SPSS version 25.0 while graphical representation were done using Microsoft Excel.

The results show that, there are significant variations in performance in specific subjects as well as curriculum components within those subjects. Further, these differences vary across atolls. Recommendations are provided based on these findings.

CHAPTER 1

INTRODUCTION AND BACKGORUND

Overview of the report

Literacy and numeracy and two essential skills to be developed at a young age for successful school careers in later years. Basic Literacy is the foundation children need to be successful in all other areas of education. Similarly, Basic mathematical reasoning is key to everyday activities such as shopping and personal finance. This report presents findings of the Early Grade Reading Assessment (EGRA) and Early Grade Learning Assessment (EGMA) conducted in 2024. EGRA was administered in two curriculum subjects namely Dhivehi and English and EGMA was administered in Mathematics. All three assessments were administered to students in grade two.

The purpose of the study

There similar but distinct purposes for EGRA and EGMA.

EGRA is conducted to:

- Generate baseline data on early reading acquisition in particular grades and/or schools.
- Guide the design of instructional programmes by identifying key skills or areas of instruction that need to be improved.
- Serve as a system diagnostic to inform education sector policy.

Likewise, EGMA is conducted to:

- To use as a country-level diagnostic tool to determine how students are performing overall compared to its stated curriculum.
- Guide the design of instructional programmes by identifying key skills or areas of instruction that need to be improved.
- Serve as a system diagnostic to inform education sector policy.

The report is organised into four chapters. After this introductory chapter, the next chapter outlines the methodological aspect of EGRA and EGMA. After that in chapter three and four, the findings of EGRA and EGMA and presented in that order. The final chapter contains conclusions and some recommendations for policy and practice.

CHAPTER 2

METHODOLOGY

Early Grade Reading Assessment (EGRA)
Early Grade Reading Assessment (EGMA)| 2024

Introduction

The overall purpose of the current assessment is to diagnose the level of student competencies with regard to literacy and numeracy. To this end, the assessment is composed of appropriate assessment tools in Dhivehi, English, and Mathematics administered to students in grade 2 across the country. This chapter provides a summary of the instruments, sampling, data collection and administering procedures.

Instrumentation

Assessment instruments were developed by QAD in the three subjects Dhivehi, English, and Mathematics. In Dhivehi and English, the instruments are composed of three broad categories of skills namely comprehension, writing and reading. The writing and reading components have further sub-categories of vocabulary and letter recognition respectively. Table 1 shows the major components of literacy assessments both in Dhivehi and English.

Table 1. Specification of Dhivehi and English Assessments

Test Component		Dhivehi		English	
		Marks	Weightage (%)	Marks	Weightage (%)
Comprehension		14	29.79	13	26.53
Writing	Writing	12	25.53	15	30.61
	Vocabulary	6	12.77	6	12.24
Reading	Letter Recognition	3	6.38	3	6.12
	Reading words and sentences	12	25.53	12	24.49
		47	100.00	49	100.00

Early Grade Reading Assessment (EGRA)
Early Grade Reading Assessment (EGMA)| 2024

Further, the numeracy (Mathematics) assessment is composed of three sets of questions A, B and C. Table 2 shows the topics included in each set of questions and the weightage given to each set with respect to the total marks for the entire assessment.

Table 2. Specification of Mathematics Assessments

Question Set	Topics	Marks	Weightage (%)
A	Basic number concepts and counting	47	31.33
B	Addition, subtraction, comparison in size capacity	56	37.33
C	Measurement, shapes, and patterns	47	31.33
		150	100.00

Sampling

The assessments were be conducted for selected students in grade 2 of 150 government schools. Student selection was be done by QAD and their names were sent to the respective schools before the assessment date. Students were selected based on the student population of the respective grade in the following manner.

- Less than or equal to 50, 90-100 % of students were selected,
- Between 50-100, 50 % of students were selected, and
- Equal to or more than 101, 30 % of students were selected.

Accordingly, the number of students who sat each of the assessments in EGRA and EGMA 2024 are given in Figure 1.

Early Grade Reading Assessment (EGRA)
Early Grade Reading Assessment (EGMA)| 2024
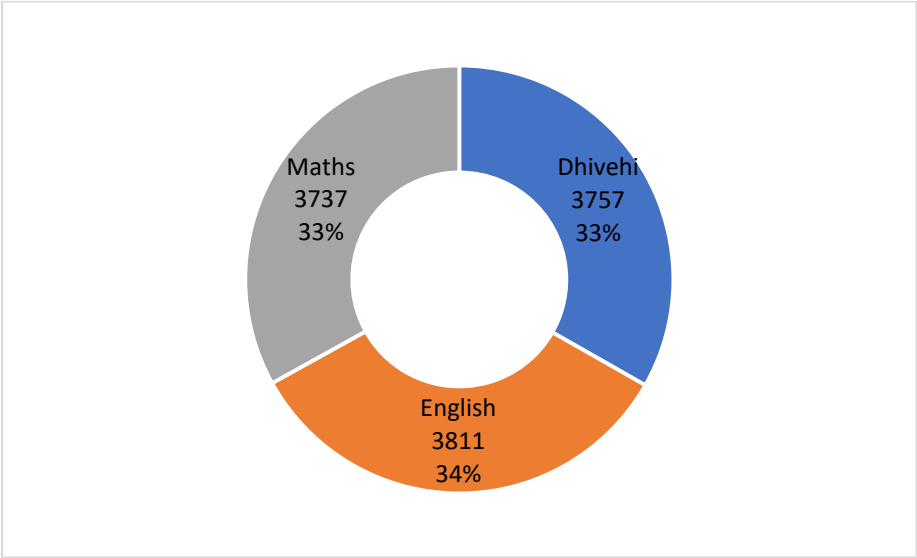
Figure 1. Number of students who sat EGRA and EGMA 2024

Administering the tests

The prepared assessment tools were sent to the schools by QAD. A focal point was appointed from each who will take the lead in conducting the EGMA and EGRA. The focal points were given specific instructions as to how the assessments will be conducted. All aspects of EGRA and EGMA were conducted under the supervision of the focal points.

The tests were administered as part of the lesson in the same manner as other classroom assessments. Each student completed the test by dividing the paper into 3 days or 3 different periods of 35 minutes. However, this was done during the assessment period set by QAD during March 2024.

All assessment components were conducted in the form of worksheets and were administered to students all at the same time. However, the reading component was administered by a teacher on a one-on-one basis.

Data entry, cleaning, and analysis

Once tests were completed, marking was conducted by respective schools referring the marking schemes prepared by QAD. The marks were subsequently entered into the template provided by QAD, were stored as excel files and handed to the analyst via QAD to do the analysis.

Once received, data were cleaned and coded so that the intended analyses could be performed. During data cleaning, student who obtained 0 (zero) for being absent or otherwise were removed. Moreover, incorrect or inappropriate entries were detected which were subsequently deleted or replaced. Additionally, appropriate coding was applied for atolls and schools. In scoring, the raw marks provided were added to calculate the total for test topics/components as shown in Tables 1 and 2. These were then converted in to percentages for ease of interpretation and comparison. Once data cleaning, coding and preparations were done, data were transferred to IBM SPSS version 25.0 which was employed in conducting the analyses as required. Descriptive statistic of frequency, percentage, mean and standard deviation were used while graphical representation of the same were employed where appropriate.

CHAPTER 3

EGRA 2024 FINDINGS

Early Grade Reading Assessment (EGRA)
Early Grade Reading Assessment (EGMA)| 2024

DHIVEHI

Response Distribution

A total of 3757 students across the nation sat the EGRA 2024 Dhivehi assessment. Table 3 shows the atoll-wise distribution of test takers. As seen in the table, schools from all atolls and Male' took part in the assessment. The greatest number of test takers in terms of percentage is from Male' (705, 18.76%) followed by R atoll (367, 9.77%) and SH atoll (320, 8.52%) respectively.

Table 3. Atoll-wise distribution of candidates (EGRA – Dhivehi)

#	Atoll	Number of Students	Percent
1	HA	125	3.33
2	HDH	165	4.39
3	SH	320	8.52
4	N	297	7.91
5	R	367	9.77
6	B	80	2.13
7	LH	80	2.13
8	K	282	7.51
9	AA	157	4.18
10	ADH	199	5.30
11	V	24	0.64
12	M	53	1.41
13	F	116	3.09

14	DH	98	2.61
15	TH	105	2.79
16	L	297	7.91
17	GA	32	0.85
18	GDH	94	2.50
19	GN	26	0.69
20	SN	135	3.59
21	MALE'	705	18.76
Total		3757	100.00

Patterns in student performance

EGRA (Dhivehi) was composed of the following competencies; comprehension, writing, vocabulary, letter recognition, and reading aloud. Figure 2 shows student performance in these components at the national level based on percentage mean scores. According to Figure 2, student performance is lowest in writing (60.37%) and comprehension (64.83%). This indicates that, overall, students' writing and comprehension skills need more attention than the other skills tested in the Dhivehi literacy assessment.
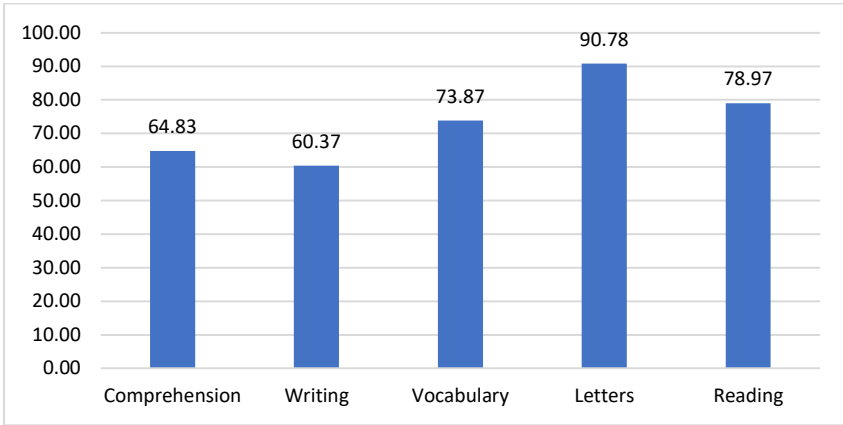
Figure 2. Student performance in EGRA (Dhivehi)

Next, each of tested competencies are compared across all atolls (including Male'). For ease of interpretation, the national average for each competency is shown by the line graph, while performance of atolls/Male' is indicated by bar graphs.

Accordingly, figure 3 shows the performance in comprehension disaggregated by atolls. As depicted in Figure 3, the highest scoring atoll is F atoll (M = 81.71) while the lowest scoring region is Male' (M = 57.76). The other atolls which scored less than the national average are Gdh and M atolls.

	Ha	Hdh	Sh	N	R	B	Lh	K	Aa	Adh	V	M	F	Dh	Th	L	Ga	Gdh	Gn	S	Mle
atoll	74.5	66	65.8	69.6	66.6	76.5	68	72.6	71.4	67.3	66.4	64.8	81.7	68.1	69.5	65.3	73.7	60.3	73.1	65.5	57.8
national	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8
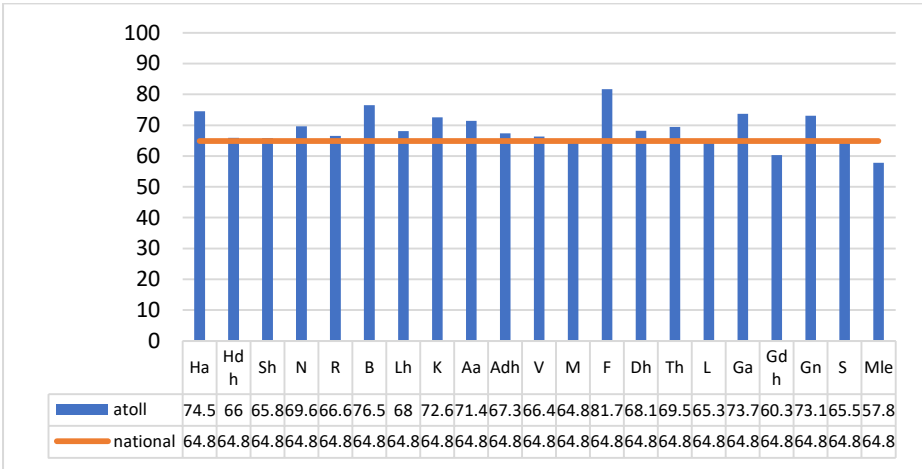
Figure 3. Atoll-wise performance in comprehension, Dhivehi

Figure 4 shows the performance in writing disaggregated by atolls. As depicted in Figure 4, the highest scoring atoll is F atoll (M = 76.08) while the lowest scoring atoll is Gdh (M = 53.10). The other atolls which scored less than the national average R, Lh, Adh, Th, L, Gn, S, and Male'.

	Ha	Hdh	Sh	N	R	B	Lh	K	Aa	Adh	V	M	F	Dh	Th	L	Ga	Gdh	Gn	S	Mle
atoll	71.7	62.0	64.4	72.4	51.8	69.7	51.0	60.0	61.1	58.9	70.4	73.1	76.0	63.6	53.1	59.0	63.8	48.1	52.2	59.1	55.1
national	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3

Figure 4. Atoll-wise performance in writing, Dhivehi

Early Grade Reading Assessment (EGRA)
Early Grade Reading Assessment (EGMA)| 2024

Figure 5 shows the performance in vocabulary disaggregated by atolls. As depicted in Figure 5, the highest scoring atoll is F atoll (M = 88.94) while the lowest scoring atoll is Lh (M = 62.08). The other atolls which scored less than the national average R, K, Adh, V, Th, and Male'.

	Ha	Hdh	Sh	N	R	B	Lh	K	Aa	Adh	V	M	F	Dh	Th	L	Ga	Gdh	Gn	S	Mle
atoll	82.6	77.6	73.7	75.4	71.6	81.4	62.0	71.1	77.7	68.9	72.2	75.7	88.9	83.1	69.2	74.1	87.5	74.4	85.2	78.3	68.8
national	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8	73.8
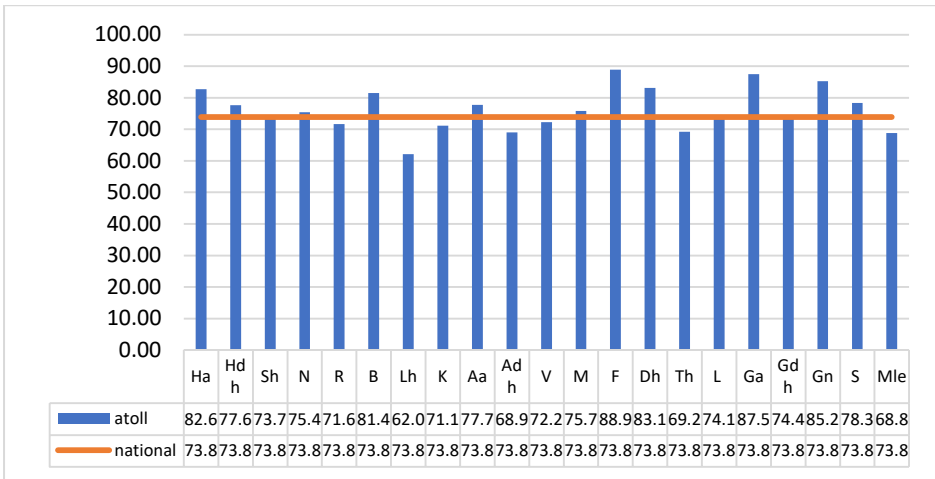
Figure 5. Atoll-wise performance in vocabulary, Dhivehi

Figure 6 shows the performance in identification of letters disaggregated by atolls. As depicted in Figure 6, the highest scoring atoll is B atoll (M = 98.33) while the lowest scoring atoll is Gn (M = 83.33) The other atolls which scored less than the national average Sh, R, Lh, Adh, V, Gdh, S, and Male'.

Early Grade Reading Assessment (EGRA)
Early Grade Reading Assessment (EGMA)| 2024
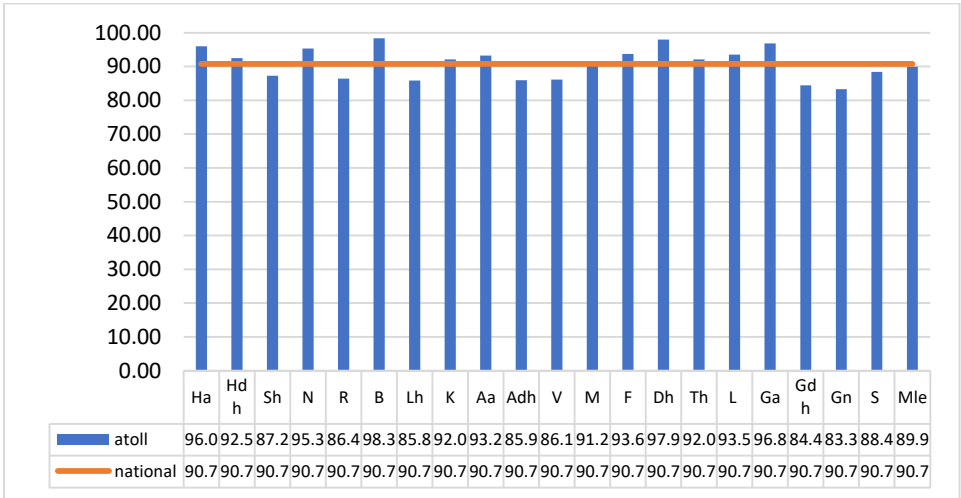
Figure 6. Atoll-wise performance in identification of letters, Dhivehi

Figure 7 shows the performance in reading disaggregated by atolls. As depicted in Figure 7, the highest scoring atoll is B atoll (M = 92.29) while the lowest scoring atoll is Gdh (M = 64.63) The other atolls which scored less than the national average R, Lh, Adh, L, Gn, S, and Male'.
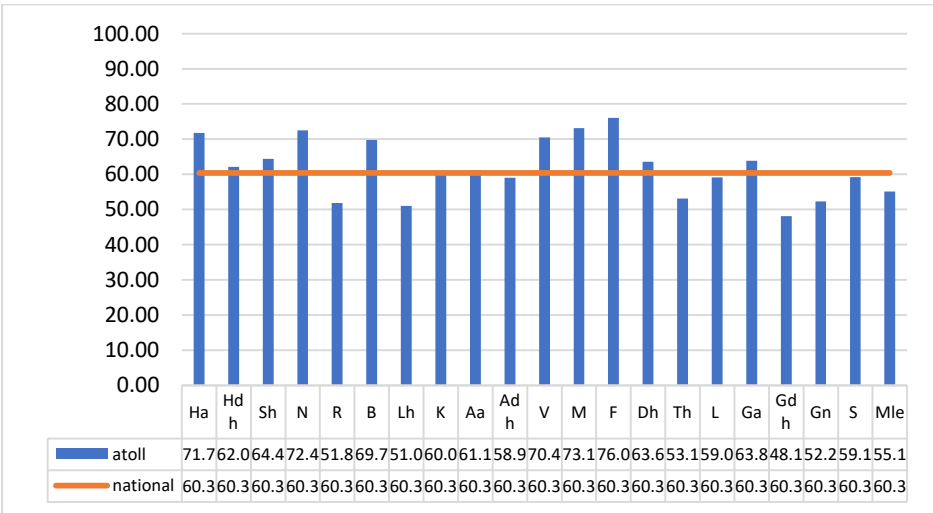
	Ha	Hdh	Sh	N	R	B	Lh	K	Aa	Adh	V	M	F	Dh	Th	L	Ga	Gdh	Gn	S	Mle
atoll	85.2	82.4	79.5	81.4	71.4	92.2	78.2	80.2	84.5	74.9	80.9	83.4	87.7	87.5	81.1	78.2	88.8	64.6	73.4	70.5	77.8
national	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9
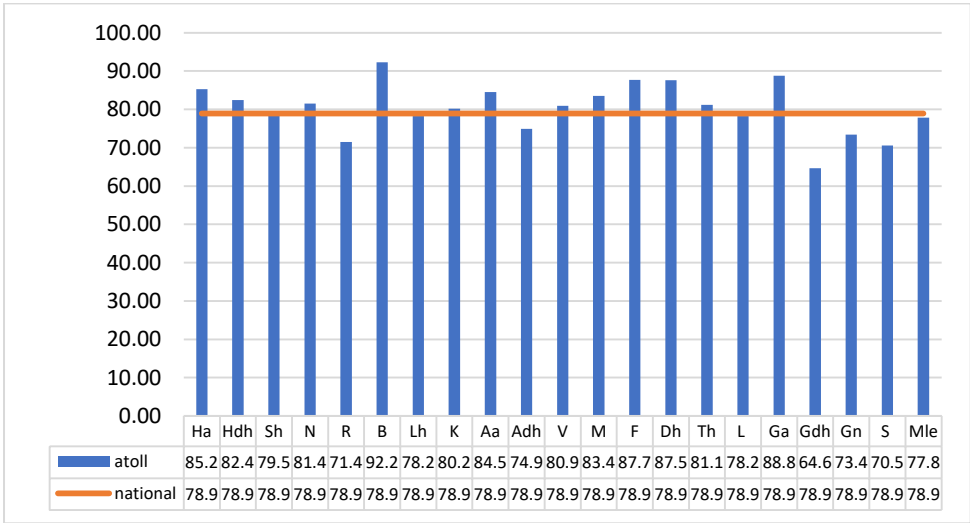
Figure 7. Atoll-wise performance in reading, Dhivehi

Early Grade Reading Assessment (EGRA)
Early Grade Reading Assessment (EGMA)| 2024

ENGLISH

Response Distribution

A total of 3811 students across the nation sat the EGRA 2024 English assessment. Table 4 shows the atoll-wise distribution of test takers. As seen in the table, schools from all atolls and Male' took part in the assessment. The greatest number of test takers in terms of percentage is from Male' (713, 18.71%) followed by R atoll (368, 9.66%) and SH atoll (322, 8.45%) respectively.

Table 4. Atoll-wise distribution of candidates (EGRA – English)

#	Atoll	Frequency	Percent
1	HA	132	3.46
2	HDH	176	4.62
3	SH	322	8.45
4	N	297	7.79
5	R	368	9.66
6	B	84	2.20
7	LH	80	2.10
8	K	285	7.48
9	AA	155	4.07
10	ADH	206	5.41
11	V	23	0.60
12	M	48	1.26
13	F	115	3.02

Early Grade Reading Assessment (EGRA)
Early Grade Reading Assessment (EGMA)| 2024

14	DH	98	2.57
15	TH	107	2.81
16	L	306	8.03
17	GA	33	0.87
18	GDH	98	2.57
19	GN	25	0.66
20	SN	140	3.67
21	MALE'	713	18.71
	Total	3811	100.0

Patterns in student performance

EGRA (English) was composed of the following competencies; comprehension, writing, vocabulary, letter recognition, and reading aloud. Figure 8 shows student performance in these components at the national level based on percentage mean scores. According to Figure 8, student performance is lowest in writing (56.30%) and comprehension (64.53%). This indicates that, overall, students' writing and comprehension skills need more attention than the other skills tested in the English literacy assessment.
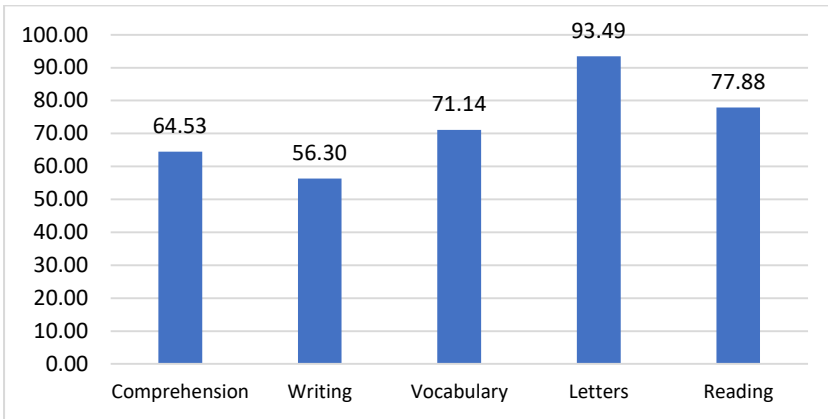
Figure 8. Student performance in EGRA (English)

Next, each of tested competencies are compared across all atolls (including Male'). For ease of interpretation, the national average for each competency is shown by the line graph, while performance of atolls/Male' is indicated by bar graphs.

Accordingly, figure 9 shows the performance in comprehension disaggregated by atolls. As depicted in Figure 9, the highest scoring atoll is V atoll (M = 76.25) while the lowest scoring atoll is Gdh atoll (M = 53.22). The other atolls which scored less than the national average are Hdh, Sh, R, Lh, K, Aa, Adh, M and Gn atolls.

Figure 9. Atoll-wise performance in comprehension, English

Figure 10 shows the performance in writing disaggregated by atolls. As depicted in Figure 10, the highest scoring atoll is Gdh atoll (M = 67.07) while the lowest scoring atoll is Gdh (M = 41.33). The other atolls which scored less than the national average Sh, R, Lh, K, Aa, Adh, V, L, Ga, and Gn atoll.
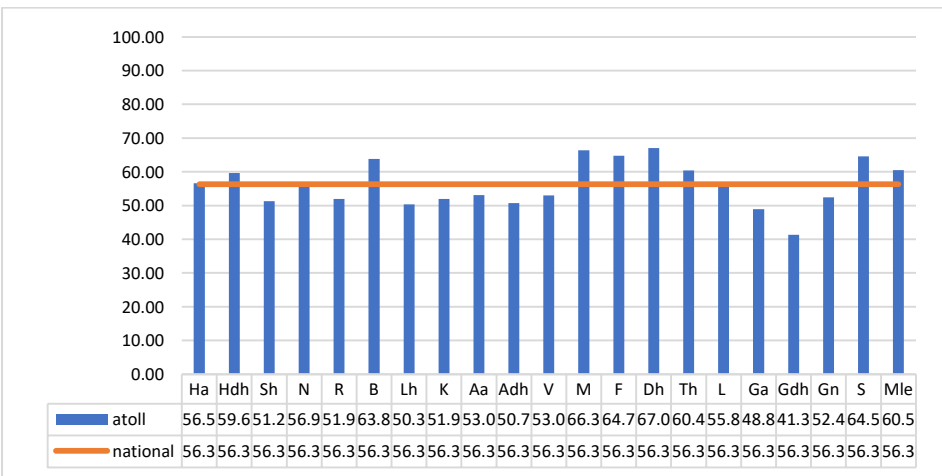
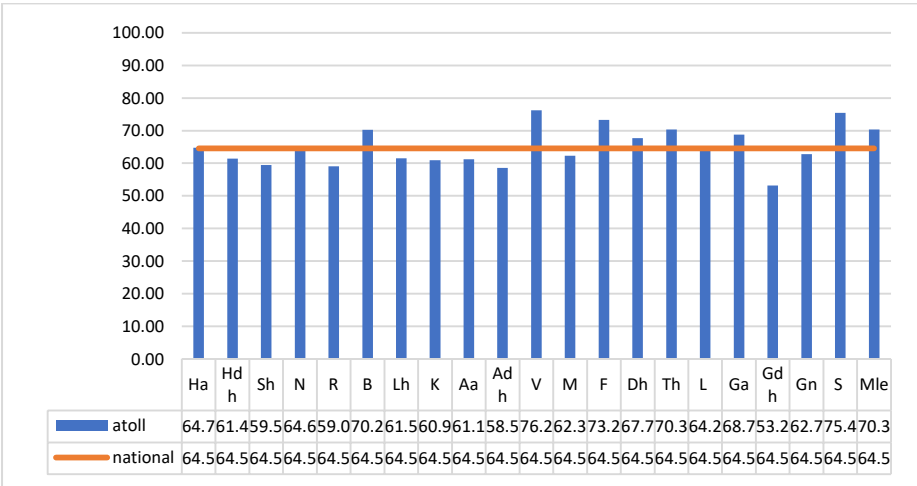

Figure 10. Atoll-wise performance in writing, English

Figure 11 shows the performance in vocabulary disaggregated by atolls. As depicted in Figure 11, the highest scoring atoll is Dh atoll (M = 85.71) while the lowest scoring atoll is Lh (M = 57.29). The other atolls which scored less than the national average Hdh, Sh, N, R, K, Adh, V, Th, L, Ga, Gdh, and Gn atoll.

	Ha	Hdh	Sh	N	R	B	Lh	K	Aa	Adh	V	M	F	Dh	Th	L	Ga	Gdh	Gn	S	Mle
atoll	71.9	71.1	69.0	70.8	67.3	75.4	57.2	67.5	72.0	59.3	65.9	71.8	85.6	85.7	67.1	67.1	68.1	60.0	68.6	82.8	77.3
national	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1	71.1

Figure 11. Atoll-wise performance in vocabulary, English

Figure 12 shows the performance in identification of letters disaggregated by atolls. As depicted in Figure 12, the highest scoring atolls are Ga and Gn atolls (M = 100.00) while the lowest scoring atoll is V atoll (M = 34.78) The other atolls which scored less than the national average Sh, N, R, B, Lh, Adh, L and Gdh atoll.
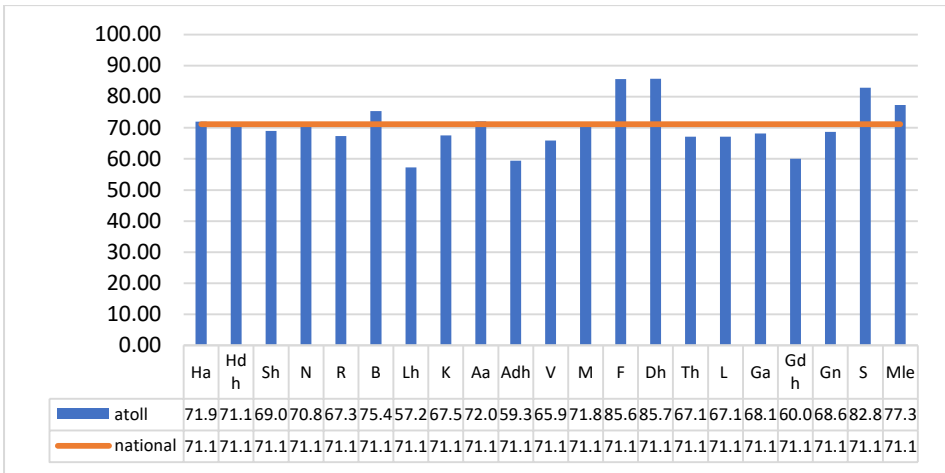
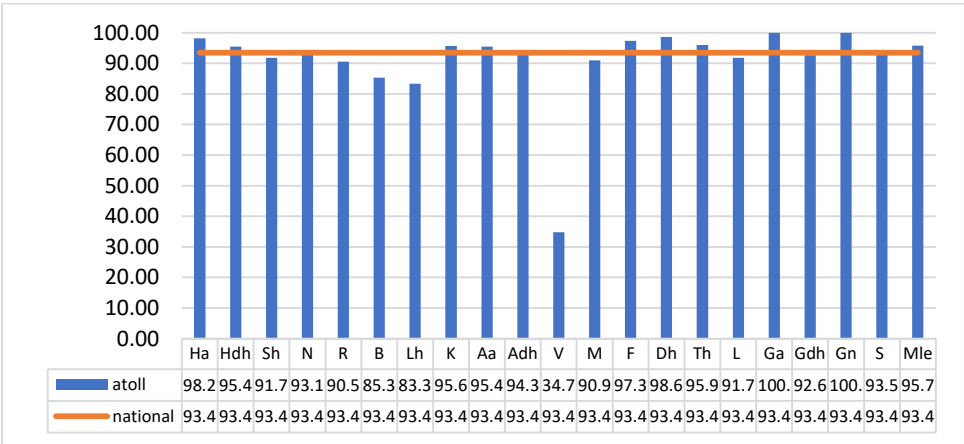|	Ha	Hdh	Sh	N	R	B	Lh	K	Aa	Adh	V	M	F	Dh	Th	L	Ga	Gdh	Gn	S	Mle
atoll	98.2	95.4	91.7	93.1	90.5	85.3	83.3	95.6	95.4	94.3	34.7	90.9	97.3	98.6	95.9	91.7	100.	92.6	100.	93.5	95.7
national	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4	93.4

Figure 12. Atoll-wise performance in identification of letters, English

Figure 13 shows the performance in reading disaggregated by atolls. As depicted in Figure 13, the highest scoring region is Male' (M = 86.19) while the lowest scoring atoll is Lh (M = 68.75) The other atolls which scored less than the national average Hdh, Sh, N, R, K, Aa, M, L and Gdh.

	Ha	Hdh	Sh	N	R	B	Lh	K	Aa	Adh	V	M	F	Dh	Th	L	Ga	Gdh	Gn	S	Mle
atoll	81.3	76.6	73.0	73.6	74.1	78.9	68.7	76.7	75.8	78.0	83.7	74.4	81.8	78.9	79.3	72.6	84.6	71.3	85.3	80.8	86.1
national	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8
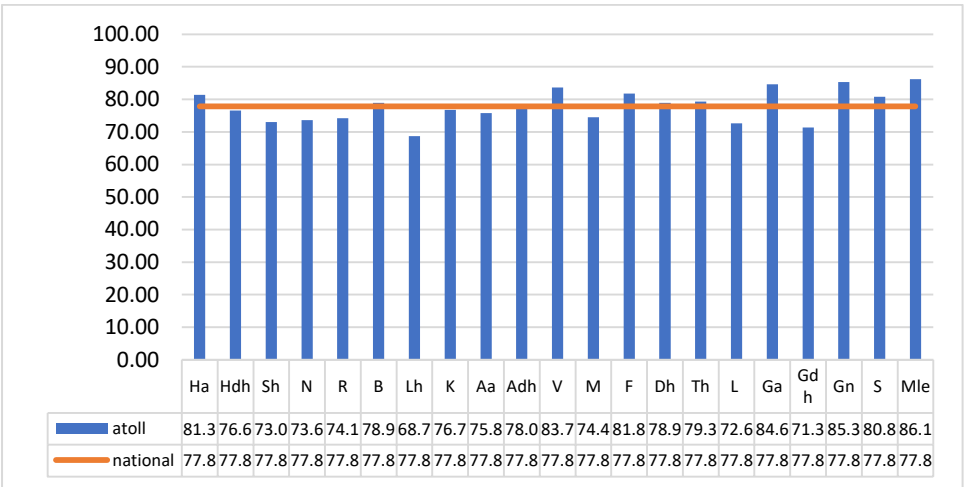
Figure 13. Atoll-wise performance in reading, Dhivehi

CHAPTER **4**

EGMA 2024 FINDINGS

Early Grade Reading Assessment (EGRA)
Early Grade Reading Assessment (EGMA)| 2024

MATHEMATICS

Response Distribution

A total of 3737 students across the nation sat the EGMA 2024 Mathematics assessment. Table 5 shows the atoll-wise distribution of test takers. As seen in the table, schools from all atolls and Male' took part in the assessment. The greatest number of test takers in terms of percentage is from Male' (667, 17.85%) followed by R atoll (363, 9.71%) and SH atoll (321, 8.59%) respectively.

Table 5. Atoll-wise distribution of candidates (EGMA – Maths)

#	Atoll	Frequency	Percent
1	HA	124	3.32
2	HDH	181	4.84
3	SH	321	8.59
4	N	291	7.79
5	R	363	9.71
6	B	85	2.27
7	LH	78	2.09
8	K	281	7.52
9	AA	151	4.04
10	ADH	202	5.41
11	V	24	0.64
12	M	54	1.45
13	F	115	3.08

14	DH	100	2.68
15	TH	105	2.81
16	L	307	8.22
17	GA	33	0.88
18	GDH	91	2.44
19	GN	26	0.70
20	SN	138	3.69
21	MALE'	667	17.85
	Total	3737	100.00

Patterns in student performance

EGMA (Maths) was composed of three worksheets focused on the following topics; (i) basic number concepts and counting, (ii) addition, subtraction, comparison in size capacity, and (iii) measurement, shapes, and patterns. Figure 14 shows student performance in these components at the national level based on percentage mean scores. According to Figure 14, student performance is lowest in addition, subtraction and comparison of objects in terms of size and capacity (51.02%) while they did the best in basic number concepts and counting (82.36%).
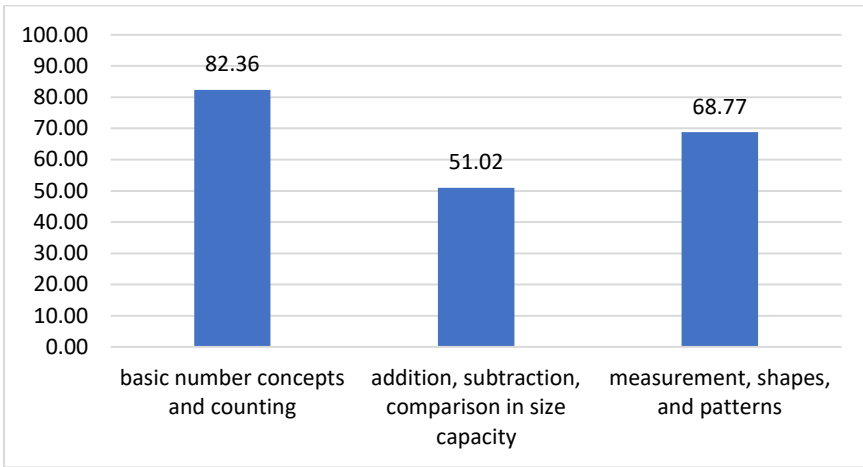
Figure 14. Student performance in EGMA (Maths)

Next, each of three tested topics are compared across all atolls (including Male'). For ease of interpretation, the national average for each topic is shown by the line graph, while performance of atolls/Male' is indicated by bar graphs.

Accordingly, figure 15 shows the performance in comprehension disaggregated by atolls. As depicted in Figure 15, the highest scoring atoll is Batoll (M = 89.56) while the lowest scoring atoll is Lh atoll (M = 77.40). The other atolls which scored less than the national average are Sh, R, K, Adh, M, L, Gdh, and Gn atolls.
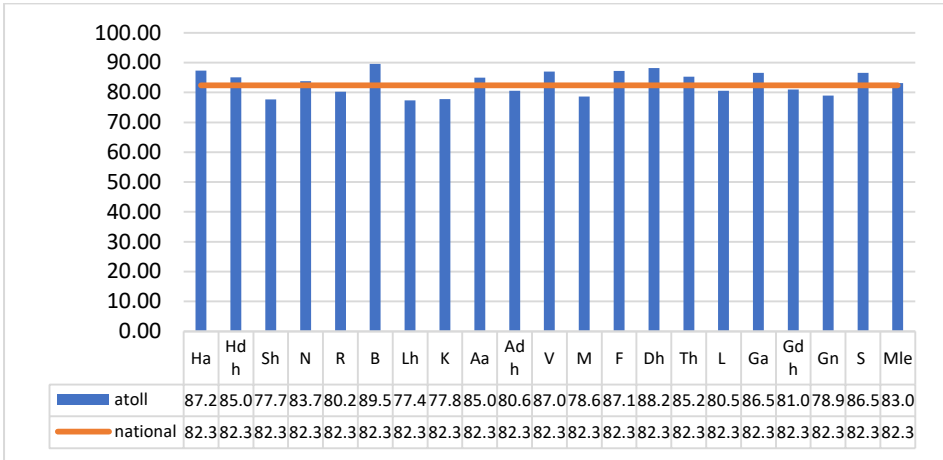
Figure 15. Atoll-wise performance in basic number concepts and counting

Figure 16 shows the performance in addition, subtraction, comparison in size capacity disaggregated by atolls. As depicted in Figure 16, the highest scoring atoll is S atoll (M = 65.49) while the lowest scoring atoll is Gn (M = 42.69). The other atolls which scored less than the national average Hdh, Sh, N, R, Lh, K, Aa, Adh, M, and Th atoll.

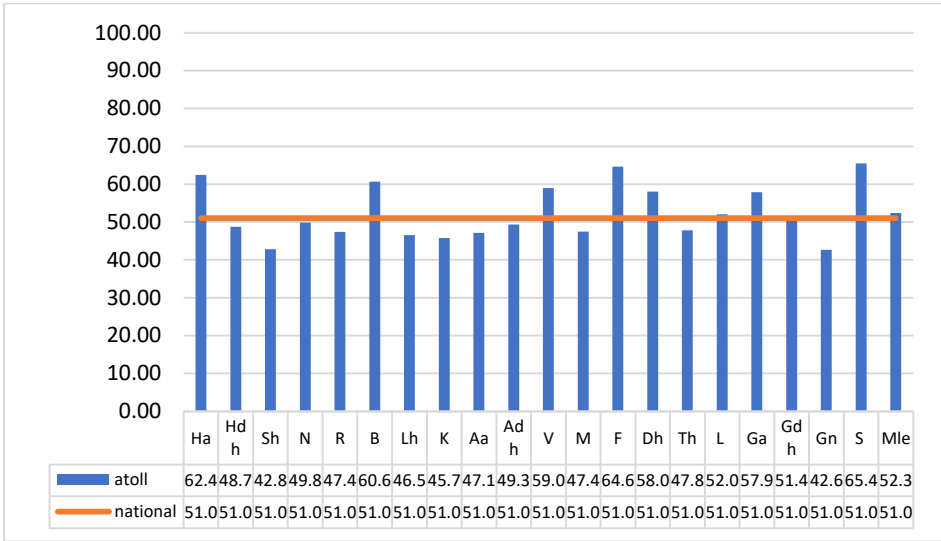|	Ha	Hdh	Sh	N	R	B	Lh	K	Aa	Adh	V	M	F	Dh	Th	L	Ga	Gdh	Gn	S	Mle
atoll	62.4	48.7	42.8	49.8	47.4	60.6	46.5	45.7	47.1	49.3	59.0	47.4	64.6	58.0	47.8	52.0	57.9	51.4	42.6	65.4	52.3
national	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0	51.0

Figure 16. Atoll-wise performance in addition, subtraction, comparison in size capacity

Figure 17 shows the performance in measurement, shapes, and patterns disaggregated by atolls. As depicted in Figure 17, the highest scoring atoll is B atoll (M = 79.79) while the lowest scoring atoll is Gn (M = 51.55). The other atolls which scored less than the national average Hdh, Sh, R, Lh, K, Aa, Adh, M, and Gdh atoll.
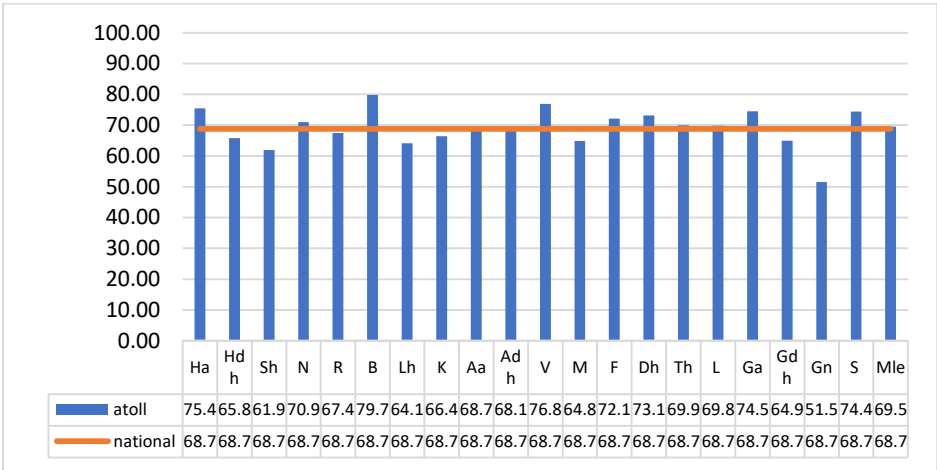
	Ha	Hd h	Sh	N	R	B	Lh	K	Aa	Ad h	V	M	F	Dh	Th	L	Ga	Gd h	Gn	S	Mle
atoll	75.4	65.8	61.9	70.9	67.4	79.7	64.1	66.4	68.7	68.1	76.8	64.8	72.1	73.1	69.9	69.8	74.5	64.9	51.5	74.4	69.5
national	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7

Figure 17. Atoll-wise performance in measurement, shapes, and patterns

CHAPTER 5

CONCLUSIONS AND RECOMENDATIONS

CONCLUSIONS

ENRA and EGMA 2024 consisted of national assessments in Dhivehi, English and Mathematics and was administered to grade 2 students in 150 schools across the country. The results show that, there are significant variations in performance in specific subjects as well as curriculum components within those subjects. Further, these differences vary across atolls. A number of recommendations are made in light of the findings as outlined in the next section.

RECOMMENDATIONS

1. Explore the reasons for urban-rural disparities

It is observed that students in Male' generally perform higher than the national average in English language competencies while they perform lower than the national average in Dhivehi language competencies. Owing to the limitations of the present investigation, it was not possible to analyse possible additional factors which could contribute to this disparity. Hence, further studies are needed to understand this phenomenon, and thus, devise appropriate solutions.

2. Conduct intervention to low performing atolls

The results show that certain atolls are below the national average performance in many competencies/ subjects. Action research incorporating lesson/learning studies in the form of teacher professional learning communities could be used to devise teacher-led contextualised solutions to address low student performance in these regions.

3. Carry out school level analysis

The scope of the current assignment does not require school level analysis. However, the available data can be used to carryout analysis at school level, which can then be used in a more practical sense to conduct interventions within schools.

4. Attention to specific literacy competencies

In both Dhivehi and English language, there is need to develop writing and comprehension skills to the level intended in the national curriculum. Furthermore, it is recommended that a speaking component is incorporated to EGRA. The fact that the reading assessment was conducted on a one-on-one basis shows that schools have logistical arrangements in place. However, it is acknowledged that they would also need technical expertise and arrangements in place in order to conduct speaking test.

5. Use additional data to enable further analysis

It would be more meaningful, especially when designing interventions, to incorporate other factors into analysis. Such factors can include, gender, school size, teachers' experience and qualification. Moreover, in the case of literacy, additional factors such as extent of engagement with Dhivehi/English materials at home could be meaningful. However, if such factors are to be included, it should precede careful planning as to how the data would be collected, stored and prepared for the analysis.

6. Enhance procedures for marking and data administration

A significant number of errors were identified during the stage of data cleaning. It is believed that most of these errors were due to lack of attention in following the marking scheme rather than data entry per say. Hence, there is a need to strengthen the moderation process during marking and data entry.