

Maldives

2016

National Assessment of Learning Outcomes in Dhivehi Language

Grades 4 & 7



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Foreword

by Minister of Education

National Assessment is an integral component of the education system which guarantees the quality of education delivered nationwide. Given that the aim of the present government is to ensure that no child is left behind, with the vision of preparing every child for life and producing successful, productive and responsible citizens, it is imperative that student learning outcomes are assessed regularly. Apart from the provision of information about the quality of education offered in the nation, National Assessment of Learning Outcomes (NALO) paves the way to enhance the essential changes to be brought in order to enable a better future for the Maldivian students.



This is a 5 year project (2014-2018) funded by the World Bank in which the subjects English Language, Mathematics and Dhivehi Language for grades 4 and 7 students are administered across a representative sample of Maldivian public schools. The skills assessed remain essentially the same from year to year, which permits NALO to illustrate a clear picture of students' academic progress over time. In addition to the administering of the tests in the given subjects, survey questionnaires are given to students and teachers who participate in this assessment. The assessment mainly aims to collect additional information with regard to students' language and numerical skills and to determine the speed at which these skills are being developed. Finally, the result of the test administered would provide valuable insights on the standard at which teachers are able to impart the curriculum to students in Maldivian public schools.

It is vital to note that national assessments would certainly enable the educational stakeholders as well as the general public to develop a national perspective on how well the schools are performing. Furthermore, the outcomes of NALO not only facilitates consistent and well-developed measures for student achievement but also could be useful in informing future policy development, allocation of resources, planning the curriculum as well as the required intervention programs.

I would like to take this opportunity to express my sincere gratitude to the World Bank for funding this project and also the staff of Quality Assurance Department for their effort in maintaining the educational stability and prosperity in the nation.

Dr. Aishath Shiham
Minister of Education

Foreword

by the Minister of State for Education

The National Assessment of Learning Outcomes (NALO) 2016 in Dhivehi has provided the Quality Assurance Department with a better understanding of the impact we are making as a system towards our targeted interventions in improving numeracy and literacy in Grades 4 and 7 of the primary schools in Maldives. It has also provided us with a measured picture of levels of the students' performance in learning outcomes in each school throughout the country.



QAD is committed to continue the NALO with a particular focus on the critical and non-negotiable outputs to improve the quality of school education in Maldives. The key outputs are to ensure high quality of teaching and learning, improved literacy and numeracy, better secondary school examination performance as well as strengthening early childhood development programmes.

The aim is to provide a world-class school education for all students under the No Child Left Behind policy, and personalised teaching and learning are at the heart of making this aim a reality. We all know what a difference it would make to students' learning outcomes when they and their teachers have a good understanding of where students are in their learning, where they need to go next and how best to get there – which is what the national assessment is all about.

Many schools are already seeing the importance of national assessment for maintaining the standards, but I want all schools to make sure that they gain the professional development training and support so that the national assessment can be embedded in all level of schooling. That is why the Government has committed to invest in upgrading all teachers and continue with the professional development programmes for teachers.

I am very pleased to know that the schools are making use of the resources available to them, and I look forward to seeing the results.

Dr Abdulla Nazeer
Minister of State for Education

Executive Summary

The National Assessment of Learning Outcomes (NALO) in Dhivehi Grades 4 and 7 in Maldivian schools were conducted in October 2016. A total of 2628 students from Grade 4, 2417 students from Grade 7, 112 teachers from Grade 4 and 106 teachers from Grade 7 were selected from 112 schools from capital Male' and 20 atolls across the country.

Quantitative methods of structured test papers, based on the learning outcomes covered in Dhivehi Syllabus, were designed along with a questionnaire for both students and teachers in Grades 4 and 7. Test papers focused on determining the students' achievements in learning outcomes. While teachers' questionnaire focused on identifying teachers' demographics and classroom practices that may be related to student learning outcomes, students' questionnaire was to determine the students' demographics and learning habits that may be related to students learning outcomes in Dhivehi language.

Assessment data was manually entered to Microsoft Excel, and SPSS software was used to clean and analyse the data.

The 2016 NALO in Dhivehi focused on determining the cognitive learning outcomes of students in Dhivehi language in Grades 4 and 7, and to find out the factors that are associated with students' achievements in order to focus on the government's prioritised goal of improving the quality of education in Maldives.

The average achievements of Grade 4 students' Dhivehi language in 2016 NALO assessments is 62.2 percent compared to their counterparts in Grade 7 who have achieved only 56.76 percent. This indicates that approximately 37.8 percent of the students in Grade 4 and 43.24 percent of students in Grade 7 failed to achieve the minimum pass percentage of 40 percent. Gender analysis of both Grades 4 and 7 students in Dhivehi language assessments showed a higher proportion of female students achieving the desired outcomes than the male students. A relatively small difference between the outcomes of atoll schools in the country was observed. A multiple regression analysis was conducted on the students' total assessment marks and the responses from the questionnaires, to see if the correlations between them effect students' achievements in Dhivehi language in Grades 4 and 7. While international research on teaching

and learning suggests that students who attend classrooms where teachers are qualified are likely to do well in school (Wright, Horn, & Sanders, 1997), the findings of this study suggested that Grades 4 and 7 students in outer island schools consistently outperformed students in urban areas such as Male' where there tend to be more qualified teachers and better resources. More than one-third of the students who participated in this study take private tuition in Dhivehi language. The findings show that the correlation between taking private tuition and students' achievement is statistically significant. Since there is a positive correlation between the two variables, it indicates that students who take tuition did score high in the assessment. Additionally, having books, computers and internet at home seems to have no significant effect on students' achievement in Dhivehi.

In conclusion, this report provides the education sector with valuable information on the performance of the students at atoll, school, and national level and also useful information on the performance of individual students. In combination this must be used to identify the critical areas of weakness and to subsequently develop relevant interventions for improving teaching and learning in Maldivian schools. Consequently, these results should not be seen in isolation to other systemic improvements in the education sector, and the findings of 2015 NALO in Mathematics and English need to be used to affirm the trends observed in learning outcomes of students in Grades 4 and 7 in Maldivian schools.



Background

The Maldives is an archipelago of 1190 coral island states in the Indian Ocean, with a population of 400,000 spread across the 198 inhabited islands. Thirty seven percent of the population is under 19 years (Census, 2014). A total of 212 schools have been established across the country to provide schooling to over 78,000 students (MoE, 2015).

In 2016, early childhood education was made compulsory and was provided free of charge to all inhabited islands. As a result, the net enrolment of early childhood education has made a remarkable progress from 51.2 percent in 2001 to 99.6 percent in 2016. Maldives has achieved seven years of universal primary education and the lower secondary enrolment level has been maintained close to the universal during the past decade or so. Similarly, higher secondary enrolment has increased substantially in recent years and adult literacy rate in Maldives exceeds 98.4 percent.

Introduction

The 2016 NALO in Dhivehi language in Grades 4 and 7 represent the first opportunity to examine trends in student performance in Dhivehi in Maldivian primary schools since 2008. Although earlier national assessments were involved in administering a test paper for all students in both Grades 4 and 7, in 2016, it was decided to include a questionnaire alongside the test paper for both students and teachers. This is to determine how these variables are related to students' achieving learning outcomes in Dhivehi. The 2016 NALO was given to selected schools within the country.

This report presents the findings and analysis of the 2016 NALO in Dhivehi, carried out by the Quality Assurance Department (QAD) as part of the quality improvement initiatives taken by the Ministry of Education. For this effort, the World Bank sponsored technical assistance to the QAD through task orders under the Enhancing Education Development Project targeted for Maldives to enhance and strengthen the strategic dimensions of education access and quality. This report outlines the government expenditure on education, and the purpose of the 2016 NALO in Dhivehi. The methodology that has been adopted in the administration of these assessments is followed by the presentation of students' performance and their attitudes towards learning Dhivehi language in Grades 4 and 7 in the light of findings. These findings

are presented graphically and in tabular format and cover gender, atoll and national contexts. Finally, the report concludes with several recommendations for policy decisions.

Education Expenditure

As required by the constitution, school education in Maldives is free, and textbooks, stationeries and other learning materials are provided by the government. School end examination fees for both General Certificate of Education (GCE) Ordinary Level (O'level) and GCE Advanced Level (A'level) students in the country are also paid for by the Government.

There seems to be no single formula available in allocating the budget for schools. However, variables such as the remoteness of the school, distance from Male' and the size of the student population are considered when allocating the budget for schools.

In the past decade, education has accounted for 12.3 to 19.4 percent of public expenditure, or approximately 5 to 6 percent of Maldives gross domestic product (GDP). As Table 1 (page 11) shows the sector has seen steady growth from 5.6 percent of the GDP in 2003 to 6.3 percent in 2011, which is above the average for all countries in South Asia.

Given the significant increase in the provision of resources to education, one would question whether the government spending increases have led to improved student performance. Researchers find it difficult to make a general conclusion due to lack of consistent evidence on whether education expenditures are related to academic achievement. Hanushek (1994) has studied the effect of per-student expenditures on academic outcomes, found either no relationship or a relationship that is either weak or inconsistent. Similarly, Cuesta, Glewwe and Krause (2015) found that the evidence is weak to conclude that increase in educational expenditure will have a positive impact on student achievement. However, researchers Hedges and Greenwald (1996) analysed the same data used by Hanushek and concluded that increasing per-student expenditures has a significant positive impact on student achievement.

Total government expenditure on education from 2001-2015

Year	Gov. Total Spending (in billion MVR)	Gov. Total Spending on Education (in billion MVR)	Gov. Spending on Education (%)	Nominal GDP (in billion MVR)	Nominal GDP
2001	3,066	516	16.8	10,824	4.8
2002	3,320	637	19.2	11,659	5.5
2003	3,727	724	19.4	13,356	5.4
2004	4,015	755	18.8	15,389	4.9
2005	6,025	850	14.1	14,334	5.9
2006	7,346	1,052	14.3	18,876	5.6
2007	8,725	1,314	15.1	22,349	5.9
2008	10,350	1,631	15.2	27,108	6.0
2009	11,129	1,935	16.6	27,729	7.0
2010	10,996	1,643	13.8	29,740	5.5
2011	12,664	1,797	13.2	35,768	5.0
2012	13,200	2,203	14.6	38,693	5.7
2013	13,666	2,002	13.1	42,952	4.7
2014	16,539	2,212	12.3	47,122	4.6
2015	21,441	2,981	13.9	52,787	5.6
2016	22,457	2,933	13.1	58,066	5.1

Table 1: Total government expenditure on education from 2001-2015

Despite the lack of consistent findings, leading researchers in the area acknowledge that any effect of per-student expenditures on academic outcomes depends on how the money is spent, not on how much money is spent.

According to Hanushek:

Few people...would recommend just dumping extra resources into existing schools. America has...followed that program for several decades, with no sign that student performance has improved.

The issue is getting productive uses from current and added spending. The existing evidence simply indicates that the typical school system today does not use resources well (at least if promoting student achievement is their purpose).

Comparable studies of this nature have not yet been done in the Maldivian setting to identify how the allocated budgets for schools are spent but the available information suggests that over 60 percent of the allocated budget is spent on teachers' and other staff salary.

Purpose

The main objectives of a national assessment in education are to determine how well the students are learning in schools and whether there is evidence of particular strengths and weaknesses in students' learning outcomes among the subgroups in the population, and which factors are associated with students' achievement in general. To understand whether government standards are being met in the provision of resources as well as the achievements of students changes over time (Greaney and Kellaghan 2008), is another reason to conduct a national assessment.

Hence, the purpose of this study in particular is to determine the cognitive learning outcomes of Dhivehi language among the students in Grades 4 and 7, and to find out the factors that are associated with their achievements.

Methodology

Quantitative methods of structured test papers, based on the learning outcomes covered in the Dhivehi Syllabus, were designed along with a questionnaire for both students and teachers in Grades 4 and 7 in 2015. Test papers were focused on determining the students' achievements in learning outcomes. While the teachers' questionnaires focused on identifying teachers' demographics and classroom practices that may be related to student learning outcomes in Dhivehi, the students' questionnaire was formulated to determine the students' demographics and learning habits that may be related to student learning outcomes in Dhivehi.

To ensure the best international practices are followed in its design and implementation, an international consultant was hired to develop the assessment framework and test items. After the test items were versioned they were moderated. Moderators discussed the changes as a standardisation measure and to make sure that there was no compromise of the test framework. The tests for Grades 4 and 7 were piloted in 2015 as part of the testing protocol to ensure the validity and fairness of the test items. The piloting involved administering of the test items on

a sample of schools and learners. The scoring and statistical analysis of these items provided data on the suitability for its inclusion in the final test.

This assessment was conducted on a representative sample basis, rather than a census basis and the student learning outcomes were limited to those related to Dhivehi.

The printed assessment papers were packed by the QAD staff according to grade and subject per school. As a security measure the assessment papers were first put into sealed envelopes before being packed into a labelled box for each school. The packing process was closely monitored by the head of the National Assessment Section of QAD to ensure the accuracy of packing. The packed assessment papers were then delivered to the Department of Public Examinations (DPE) where DPE officials verified the assessment materials per school. This was done a week before the test administration process.

A total of 112 schools (Appendix A) in 20 atolls were selected for this assessment. A random sample of 2628 students (1336 female, 1292 male) from Grade 4, 2417 students (1124 female, 1293 male) from Grade 7, 112 teachers from Grade 4 and 106 teachers from Grade 7 were selected for the assessment. Teachers were trained on how the invigilation process was to be carried out. The guidelines were emailed and teachers were given further clarification if they had any queries.

The assessment was conducted on 13th July 2016. This time was decided to minimize the administration costs with the help of the DPE who had delivered the national assessment test papers and questionnaires during the trips that they made to schools to deliver the papers for A'Level examinations.

Assessment data was entered to Microsoft Excel, and SPSS software was used to clean and analyse the data.

Key Findings

In this section, overall performance of students learning outcomes among the various sub-populations in Dhivehi language in Grades 4 and 7 are presented, before discussing the factors associated with the students' achievements.

The following subsections present results for these student groupings and provide comparisons between atolls on learning outcomes.

Performance According to Learning Outcomes in Grades 4 and 7

The old Maldivian primary school Dhivehi syllabus focuses predominantly on narrative text and occasionally on descriptive; other types of texts, such as informative and persuasive, are not featured extensively in the curriculum. However, the new school curriculum which commenced implementation in 2015 is a more comprehensive and learning outcome based one.

The 2016 NALO in Dhivehi was conducted based on the old syllabus with Dhivehi items featuring passages similar to what would be seen in children's textbooks. Moreover, reading items in the test are presented as if they were texts in a reading book or textbook. The instruments do not test the capacity to retrieve information from non-literal texts such as forms or tables contents. The performance of students' achievements as a percentage in Dhivehi Grades 4 and 7 are presented here separately. The defined cut-point for a minimum achievement in the curriculum for Dhivehi language for Grades 4 and 7 is 40 percent. These minimum pass percentages are used to determine the percentage of students who achieved the learning outcomes in Dhivehi for both grades along with the percentage of students who failed to achieve the minimum learning outcomes.

Grade 4 Dhivehi Language

As mentioned earlier, a total of 2,628 students from Grade 4 nationwide sat for the 2016 NALO Dhivehi paper. A sum of 27 multiple choice questions were given in the paper with a score of one point per question.

Table 2 shows the internal consistency of the 27 questions in the assessment paper. A high alpha value of 0.804 indicates that all the items are associated to the construct, signifying that the test tool is highly reliable.

Cronbach's Alpha	N of Items
0.804	27

Table 2: Reliability Statistics Grade 4

An analysis of the 27 questions was done to evaluate the number of students who answered the questions correctly or incorrectly. It is evident from the individual item analysis over 70 percent of the students answered the knowledge-based test questions 2, 3, 7, 10, 17, 18, 20, 21, 24, 26 and 27 correctly. 89.09 percent of the students answered the question number 21 correctly as depicted in Figure 1. This particular question seems to be the easiest for students to answer, which was displayed straight forwardly in the brief comprehension passage.

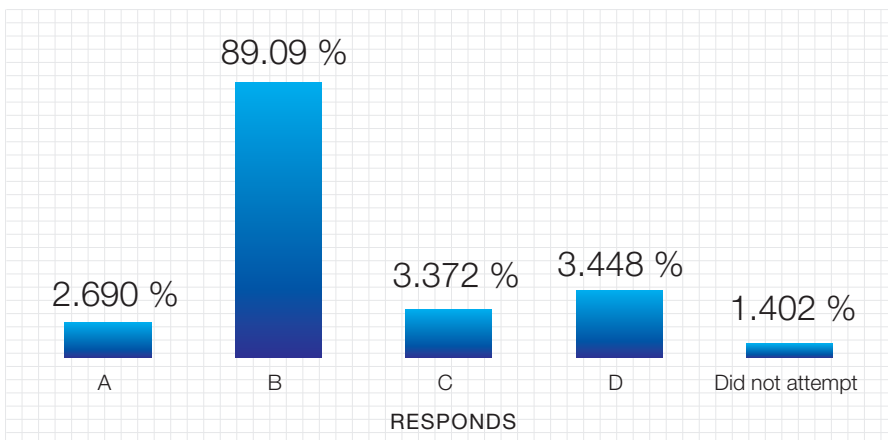


Figure 1: Students responses to question number 21

In contrast, students' performance was low on questions 1, 4, and 5, which involved the understanding of cognitive abilities and critical thinking. It should also be noted that a significant number of students did not attempt these questions.

The 2016 NALO in Dhivehi analysis shows that the mean performance of students learning outcomes in Grade 4 Dhivehi is 16.79 out of 27 questions and the standard deviation is 5.212 (Figure 2). It shows a negatively skewed histogram, which indicates most of the students are above the mean score of 16.79. Furthermore, it is evident that the scores of most of the students are clustered around the mean, indicating that the standard deviation (5.212) or scores deviating from the mean is a small percentage. Therefore, it can be said that most students who sat for this assessment scored higher than the national average of 62.2 percent. However, approximately 37.8 percent of the students failed to achieve the minimum pass percentage of 40 percent in Grade 4 Dhivehi language.

National Performance - Grade 4 Dhivehi Language

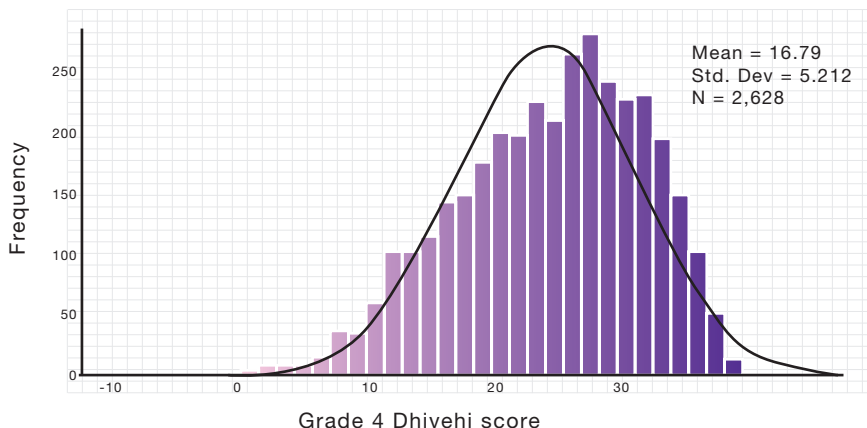


Figure 2: National performance of Grade 4 Dhivehi

The 2016 NALO Dhivehi language analysis shows that only 3.5 percent of students of Grade 4 achieved above 80 percent in the learning outcomes of Dhivehi. While 38 percent of students got 60 percent, the majority of the students got higher than 50 percent in the learning outcomes of Dhivehi.

As mentioned before, on average, students in Grade 4 Dhivehi obtained more than 62.2

percent of the learning outcomes tested in 2016 NALO assessments. To understand the range of student performance, it is helpful to look at the distribution of atoll students' achievements at national level as depicted in Figure 3. It shows that the performance at atoll level is above the mean score in most of the atolls. Meemu Atoll has the highest score of 68.8 percent, followed by Haa Dhaalu Atoll (66.4 per cent) and Vaavu Atoll (65.7 per cent). Raa Atoll has the lowest score of 57.8 percent, preceded by Laamu Atoll (58.4 percent).

National Assessment: Dhivehi Language Atolls Performance Grade Four

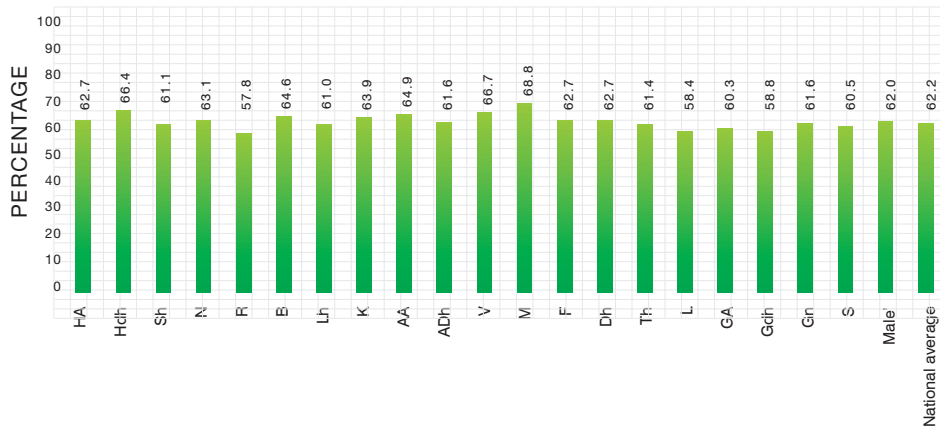


Figure 3: National Assessment: Dhivehi Language Atolls Performance Grade Four

Gender analysis of Grade 4 students in Dhivehi language learning outcomes both at national and atoll levels is shown in Figure 4. Small differences were observed on learning outcomes between atolls. However, a higher proportion of female students achieved the learning outcomes compared to male students in Dhivehi. As shown in Figure 4, at the national level, female students outperformed with an average score of 67 percent when compared to a score of 58 percent achieved by male students.

National Assessment: Dhivehi Language Atolls Performance Grade Four- by Gender

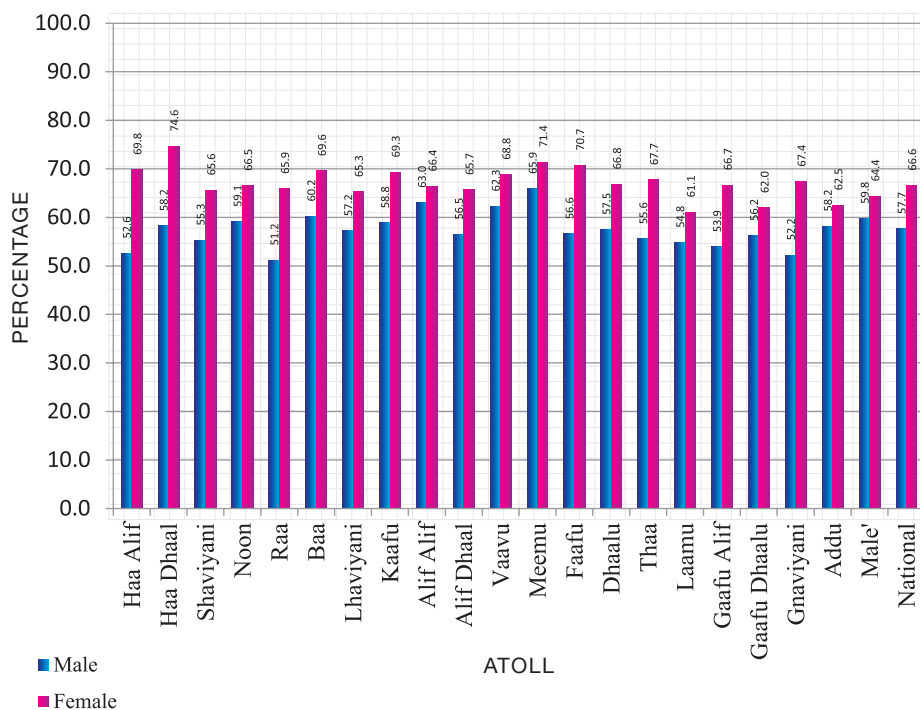


Figure 4: National Assessment: Dhivehi Language Atolls Performance Grade Four- by Gender

Grade 7 Dhivehi Language

As mentioned earlier, there were 40 questions or items in Grade 7 Dhivehi language assessment paper. In order to understand the reliability of the individual questions, an analysis of internal consistency of all 40 items were carried out as shown in Table 3. A high alpha value of 0.776 indicates that all the items are associated to the construct, signifying that the test tool is highly reliable.

Cronbach's Alpha	N of Items
0.776	40

Table 3: Reliability Statistics Grade 7

The analysis of the individual questions was done to evaluate the number of students who answered the questions correctly or incorrectly. It is evident from the individual item analysis that students answered most of the knowledge-based test questions correctly rather than the questions focused on understanding of the concepts. For instance, the six questions that over 75 percent of the students answered correctly were questions 3, 20, 22, 27, 39 and 40. Also, over 90 percent of the students answered the knowledge-based question number 20 correctly which required them to fill a blank in a sentence used in everyday life as shown in Figure 5.

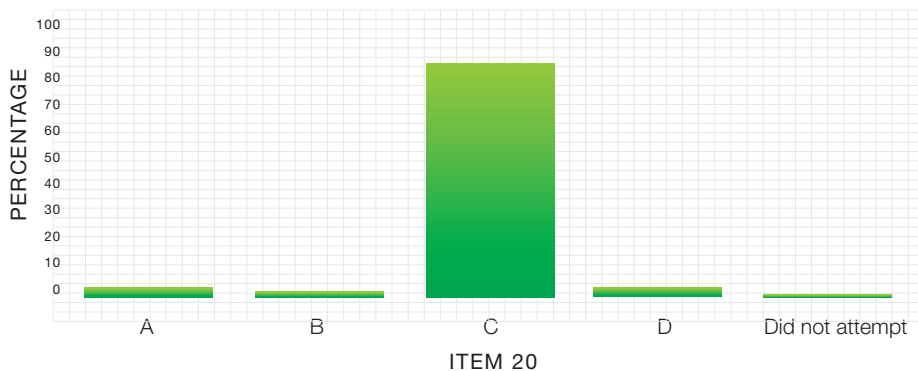


Figure 5: Students responses to question number 20

In contrast, students' achievement was low on questions 15, 18, 24, 30 and 32, which involved the understanding of cognitive abilities and critical thinking. It should also be noted that a significant number of students in Grade 7 did not attempt these questions as in Grade 4. As indicated earlier, a total of 2,417 students from Grade 7 nationwide sat for the 2016 NALO in Dhivehi which consisted of 40 multiple choice questions with a score of one point per question. The analysis shows that the mean performance of students is 22.71 out of 40 questions and the standard deviation is 6.22 as illustrated in Figure 6.

National Performance - Grade Seven Dhivehi Language

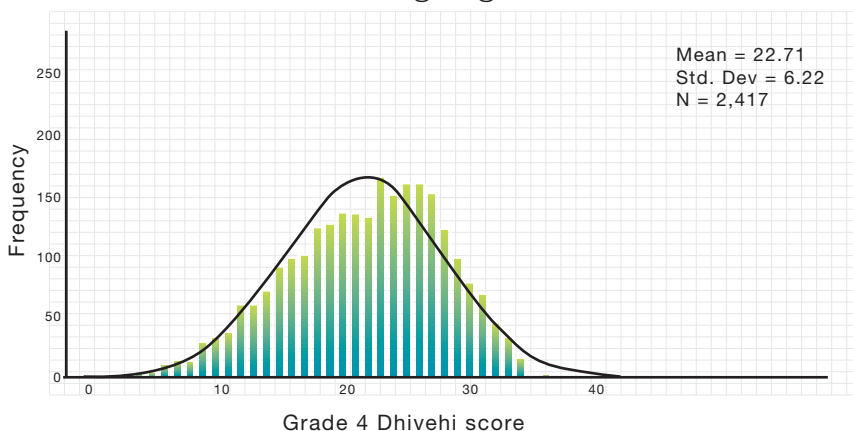


Figure 6: Students performance of Grade 7 Dhivehi at the national level

From Figure 6 it is evident that the histogram is tilting towards the right or it is negatively skewed indicating that most students scored higher than the mean score of 22.71. Furthermore, it is evident that the scores of most of the students are clustered around the mean indicating that the standard deviation (6.22) or scores deviating from the mean is a small percentage. Therefore, it can be said that most students who sat for this assessment scored higher than the national average.

The 2016 NALO Dhivehi language analysis shows that only 4 percent of students of Grade 7 achieved above 80 percent in the learning outcomes of Dhivehi. While 28 percent of students got 60 percent, the majority of the students got higher than 50 percent in the learning outcomes of Dhivehi.

The average achievement of Grade 7 students in Dhivehi language learning outcomes tested in 2016 NALO assessments was 56.76 percent compared to the Grade 4 students who have obtained more than 62.2 percent in the National assessment. To understand the range of student performance, it is helpful to look at the distribution of atoll students' achievements at national level as depicted in Figure 7. It shows that the performance at atoll level is above the mean score in most of the atolls. Baa Atoll has the highest score of 60.78 percent, followed by Haa Dhaal Atoll (59.61%) and Vaavu Atoll and Seenu Atoll (59.57%). Laamu Atoll has the lowest score of 49.92 percent.

National Assessment: Dhivehi Language Atolls Performance Grade Seven

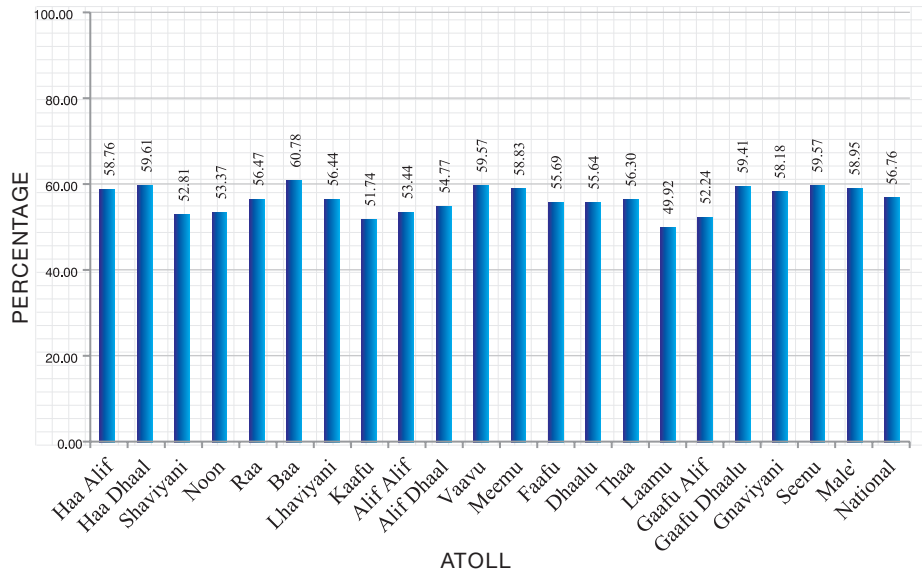


Figure 7: National Assessment: Dhivehi Language Atolls Performance Grade Seven

Gender analysis of both Grades 4 and 7 students in Dhivehi language learning outcomes at national and atoll levels show that there was a higher proportion of female students who achieved the learning outcomes when compared to male students. Similar to the Grade 4 gender comparisons shown in Figure 4 earlier, Grade 7 female students outperformed, at national level, with an average score of 60.89 percent when compared to a score of 53.19 percent for male students as shown in Figure 8. This indicates that there is a highly significant correlation between Dhivehi Language performance and female students.

National Assessment: Dhivehi Language Atolls Performance Grade Seven- By Gender

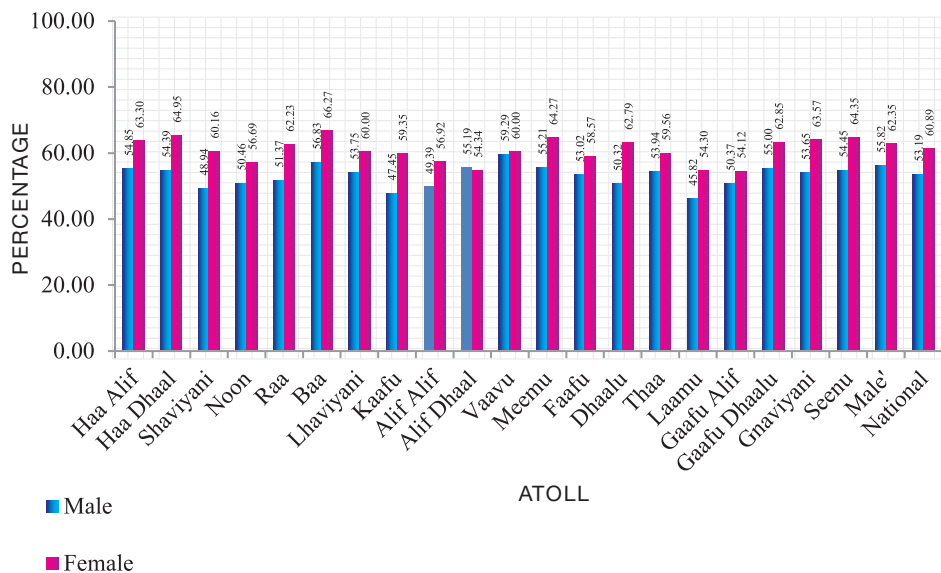


Figure 8: National Assessment: Dhivehi Language Atolls Performance Grade Seven- By Gender

Factors associated with students achievements

A multiple regression analysis was conducted on the students' total assessment marks and the responses from the questionnaires to see if the correlations between them affect students' achievements in Dhivehi language learning outcomes in Grades 4 and 7.

International research on teaching and learning (Wright, Horn, & Sanders, 1997) suggests that students who attend classrooms where teachers are qualified, engaged with their students, and well supervised are more likely to do well in school. In small island nations like Maldives, schools in remote islands tend to have fewer qualified teachers than in urban areas. From the data, it was difficult to make a comparison between qualified and experienced teachers who were working in remote islands and in urban areas. As seen in Figure 9, almost all teacher's that work fulltime in Grades 4 and 7 hold diploma and above qualifications.

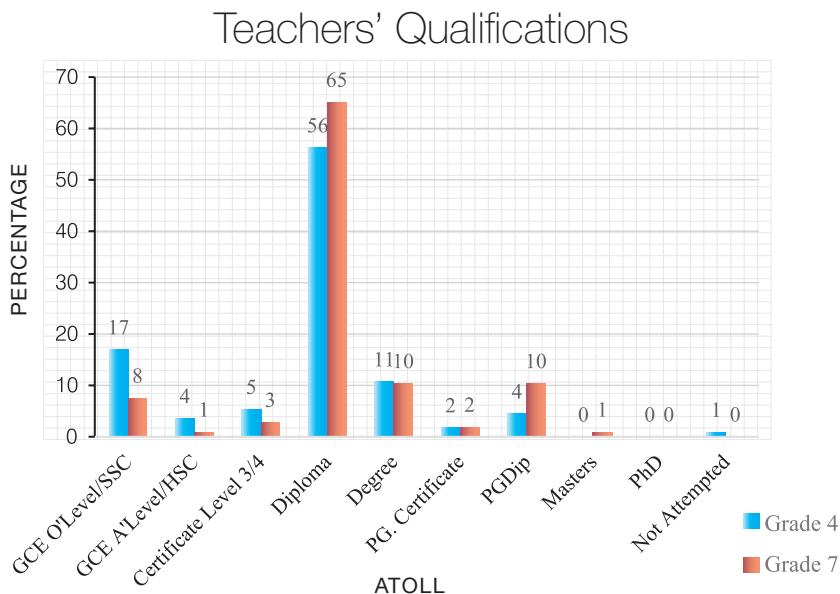


Figure 9: Teachers' Qualifications

However, the 2016 NALO Dhivehi language findings demonstrated that Grades 4 and 7 students in outer island atolls consistently performed better than students in urban areas like Male' as shown in Figures 5 and 7.

Students' interest and motivation to learn is an important factor in determining their learning outcomes (Rehman, & Haider, 2013). Over 60 percent of students in both grades strongly agreed on the importance of learning Dhivehi language and as seen in Figure 10, 58.8 percent of Grade 4 and 47.5 percent of Grade 7 students showed their interest in learning the language.

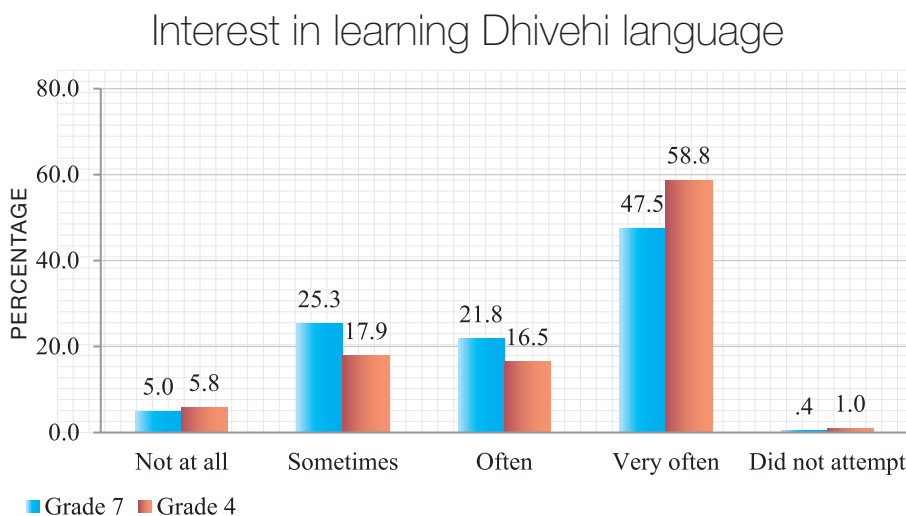


Figure 10: Interest in learning Dhivehi language

However, while Grade 4 students' perception did not match with the achievements of their learning outcomes, Grade 7 students' perception correlated well with their performance in the Dhivehi assessment. The difference in this finding between the two grades can be explicated by their agreement (Among Grade 4 students 25.2 percent agreed and 65.2 percent strongly agreed; Among Grade 7 students 42.9 percent agreed and 50 percent strongly agreed) that they would attempt to learn all the concepts to the best of their ability regardless of their interest in the subject. These findings indicate that students who are interested in learning the language do not necessarily score high grades.

The findings showed 39.9 percent of Grade 4 and 37.2 percent of Grade 7 students take private tuition in Dhivehi language as presented in Figure 11. They believe that this would help them to

enhance their learning of the language and get opportunities to clarify doubts which were not available in their school classrooms.

The analysis shows that the correlation between taking private tuition and students' achievement is statistically significant, and a positive relationship between the two variables indicates that students who take tuition scored higher grades in the Dhivehi assessment.

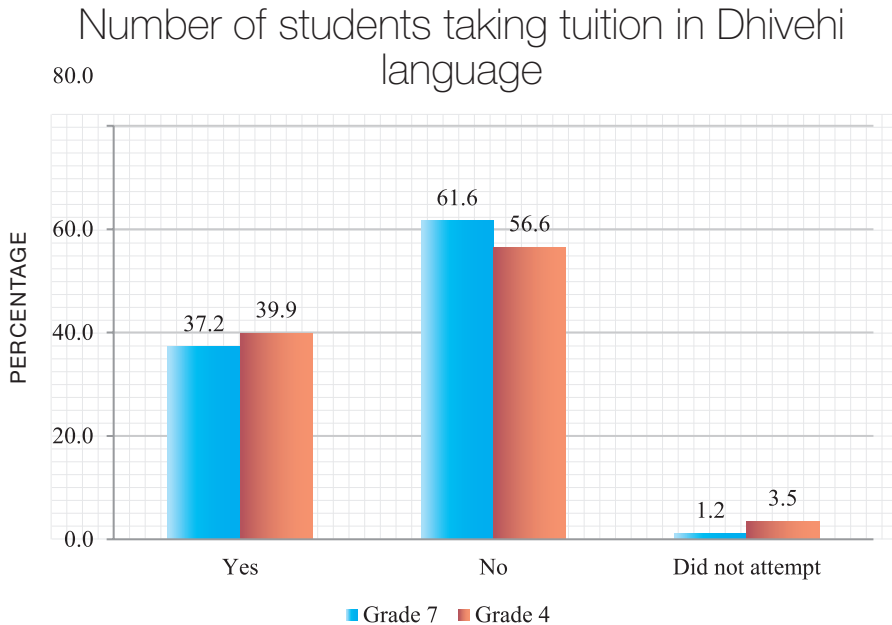


Figure 11: Number of students taking tuition in Dhivehi language

A large number of students believed (17.4 percent of Grade 4 and 34.3 percent of Grade 7) or strongly believed (74 percent of Grade 4 and 58.1 percent of Grade 7) that it is important for them to get the highest grade in the class. As indicated in Figure 12, the students agreed (23 per cent of Grade 4 and 39.5 per cent of Grade 7) or strongly agreed (60.4 per cent of Grade 4 and 46.3 per cent of Grade 7) that tuition helps them to excel in studies, as they strive to achieve higher grades in the examination.

Tuition helps to excel in studies

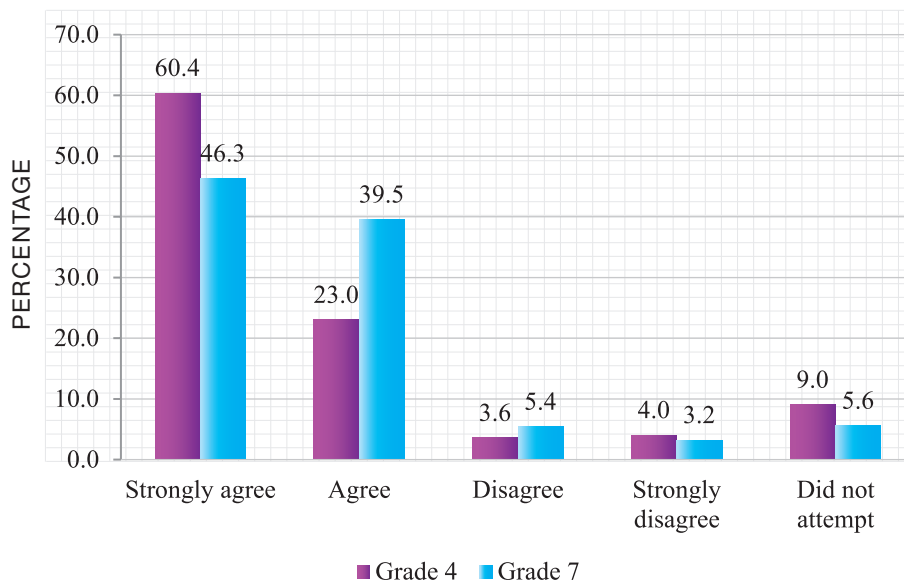


Figure 12: Tuition helps to excel in studies

However, this perception held by students is not validated by the analysis of the data of both grades. In fact, there is a negative relationship between students' perception of the importance of taking tuition to excel in studies and their achievement. In contrast, a study done in Turkey to see if private tutoring really increases the students' academic performance in schools suggests that private tutoring does have a positive impact on academic performance in mathematics and Turkish language (Berberoğlu & Tansel, 2014).

The findings on Grades 4 and 7 students' learning habits suggest that a large proportion of students' rote learn and memorise the content as much as possible when studying for the examination, as indicated in Figures 13.

Rote Learning and Memorisation

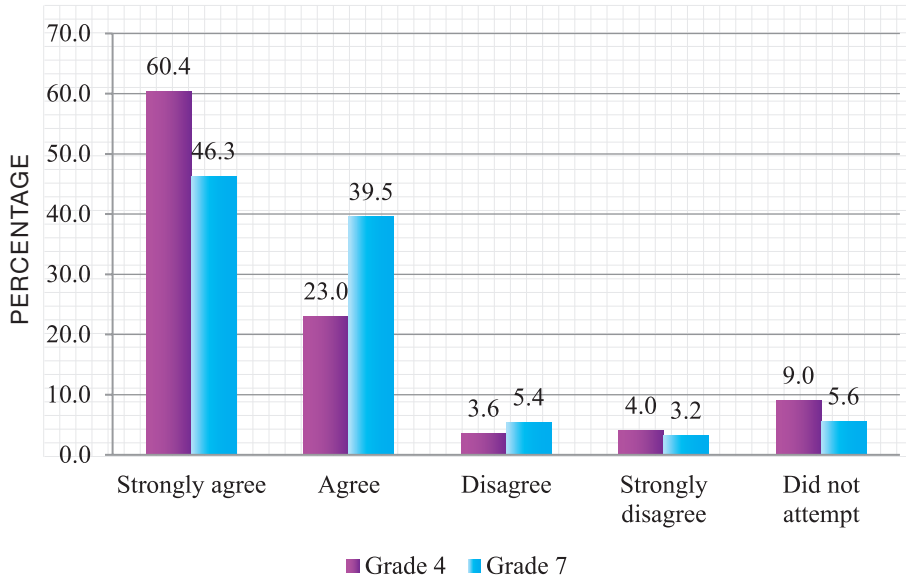


Figure 13: Rote Learning and Memorisation

Even though a substantial number of students memorized for examination, the students' score in Grade 4 Dhivehi did not reflect in their learning outcome as opposed to Grade 7 students who achieved higher grades in the assessment. It may be because rote memorization tend to expose students to knowledge as it did not seem to lead them to have an understanding of the concepts themselves.

The 2016 NALO Dhivehi findings showed that an overwhelming majority of students in Grades 4 and 7 had Dhivehi books at home for reading and language practice as depicted in Figure 14.

Number of Dhivehi books at home

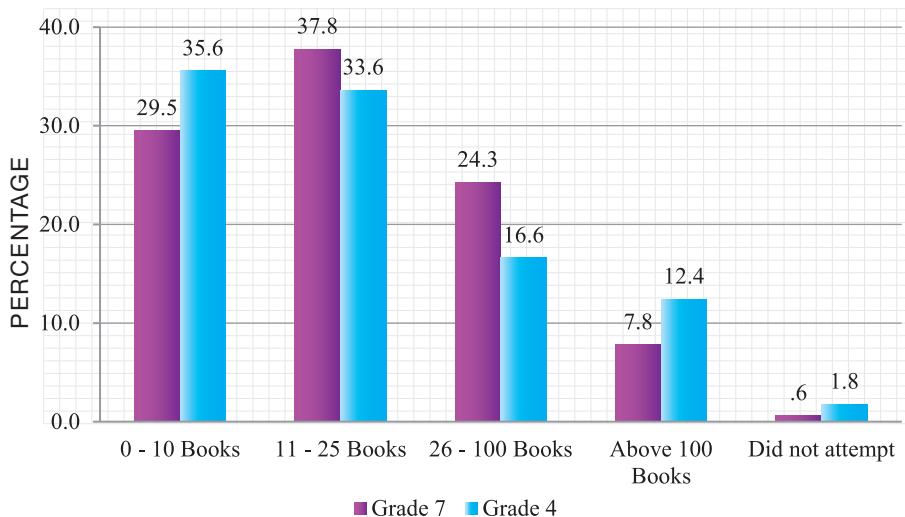


Figure 14: Number of Dhivehi books at home

However, there is no conclusive evidence to suggest that having books and other supplementary materials at home increased students' achievements in Dhivehi learning outcomes in Grades 4 and 7. In contrast, some international research findings showed that students who had higher learning outcomes in national assessments were more likely to use books for practice and homework assignments (Wright, Horn, & Sanders, 1997).

Figure 15 represents the computer availability at home reported by the students in Grades 4 and 7 who participated in this study. The percentage of students who have access to a computer at home (59.4 per cent of Grade 4 and 63.5 per cent of Grade 7) is almost equal to those who have internet connection at home (60.6 per cent of Grade 4 and 59.3 per cent of Grade 7), for both grades.

Availability of computers at home

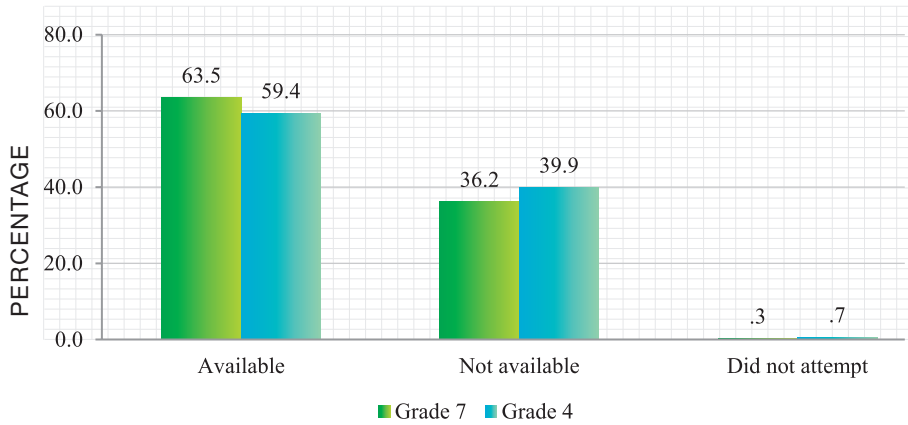


Figure 15: Availability of computers at home

Grades 4 and 7 teachers who participated in this study also acknowledged the availability of computers in schools for both teachers and students to use in teaching and learning as demonstrated in Figure 16.

Computer availability for students and teachers at Schools

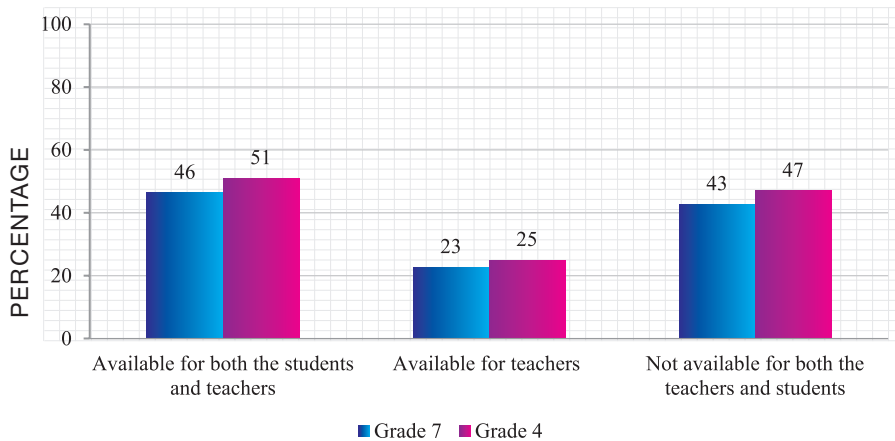


Figure 16: Computer availability for students and teachers at Schools

The analysis, however, did not indicate the purpose for which the computer or the Internet was used by the students. While the association between the availability of computers at home and students' performance is statistically insignificant in the case of Grade 4, it is significant in the case of Grade 7. It is not very clear whether computers helped student's achievement in the assessment.

A World Bank funded two-year study program in Colombian public schools to understand how information and communication technology (ICT) may boost the quality of education showed that the computers did not lead any measurable increase in student test scores. Researchers suggested that this could be a result of teachers and students having mainly used the computers to learn how to use them, instead of using them as a part of the teaching process (World Bank, 2011). The findings do not mean that computers and other ICT cannot raise educational quality and students' performance.

The availability of internet at home linking students' achievement is statistically significant in both Grades 4 and 7. A negative relationship between the two variables indicates that having internet at home does not necessarily effect student achievement in Dhivehi learning outcomes.

Conclusions and Recommendations

The 2016 NALO Dhivehi is a collective commitment of the sector to improve the quality of education as well as student performance. The overall performance in 2016 NALO shows that the majority of students have achieved the minimum learning outcomes assessed in Dhivehi Grades 4 and 7. Although the students' performance in Grade 4 goes up beyond the national target of 60 percent, the Grade 7 students' performance fell below that target.

Gender analysis of both Grades 4 and 7 students in Dhivehi language learning outcomes showed higher proportion of female students achieving the learning outcomes than the male students in the subject. Even though the overall performance of schools at atoll level is above the mean score in most of the atolls, a relatively small difference was observed on learning outcomes between the atoll schools in the country.

Based on the findings presented in the preceding sections in this report, the following recommendations are made:

- Even though most of the atoll schools performed well above the national average, special attention needs to be given to low performing schools in atolls such as Raa, Kaaf and Laamu to assist with students' learning;
- Extra care needs to be given when designing the test items as many of the questions in 2016 NALO in Dhivehi did not focus on the factorial relationships that effect students' achievement;
- The 2016 NALO in Dhivehi was conducted only in selected schools so it is important to have a census assessment across the Maldives in order to avoid bias;
- Maldivian schools in urban areas are relatively well resourced having more qualified teachers than the schools in remote islands. However, the findings showed that many remote schools performed better than schools in urban areas, despite international research suggesting otherwise. Therefore, it is important to check if the teachers are using various strategies to engage and motivate students to learn Dhivehi;
- Learning gap between genders is a worldwide trend, hence effective strategies are required to minimize the gap between boys and girls;
- Carefully designed training is needed for both in-service and pre-service teacher training programmes in order to maximize the teaching and learning in schools; and
- It can be seen that many students in both Grades 4 and 7 find it difficult to answer cognitive questions in the assessment which may suggest that the classroom teaching is focusing on rote memorization rather than teaching for understanding of the concepts.

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Appendix (Sampled Schools)

#	Atoll Code	School Code	Atoll	Island	Name of School
1	01	101	HA	Ha. Thuraakunu	Thuraakunu School
2	01	107	HA	Ha. Vashafaru	Vashafaru School
3	01	108	HA	Ha. Dhidhdhoo	Atoll Education Centre
4	01	110	HA	Ha. Maarandhoo	Maarandhoo School
5	01	114	HA	Ha. Baarah	Baarashu School
6	02	205	HDH	Hdh. Nolvivaramfaru	Nolvivaramfaru School
7	02	209	HDH	Hdh. Kulhudhuffushi	Atoll Education Centre
8	03	303	SH	Sh. Goidhoo	Goidhoo School
9	03	304	SH	Sh. Feydhoo	Feydhoo School
10	03	307	SH	Sh. Foakaidhoo	Foakaidhoo School
11	03	311	SH	Sh. Lhaimagu	Lhaimagu School
12	03	312	SH	Sh. Komandoo	Atoll Education Centre
13	03	313	SH	Sh. Maaun'goodhoo	Maaun'goodhoo School
14	04	402	N	N. Ken'dikulhudhoo	Ken'dikulhudhoo School
15	04	404	N	N. Kudafaree	Kudafaree School
16	04	405	N	N. Landhoo	Landhoo School
17	04	406	N	N. Maafaru	Maafaru School
18	04	407	N	N. Lhohee	Lhohee School
19	04	408	N	N. Miladhoo	Hidhaya School
20	04	410	N	N. Manadhoo	Atoll School
21	04	412	N	N. Fodhdhoo	Fodhdhoo School
22	05	505	R	R. Un'goofaaru	Un'goofaaru School
23	05	506	R	R. Maakurathu	Maakurathu School
24	05	507	R	R. Rasmaadhoo	Rasmaadhoo School
25	05	511	R	R. Fainu	Fainu School
26	05	512	R	R. Meedhoo	Atoll Education Centre
27	05	514	R	R. Hulhudhuffaaru	Hulhudhuffaaru School

28	06	608	B	B. Eydhafushi	Atoll Education Centre
29	06	612	B	B. Goidhoo School	Goidhoo School
30	06	610	B	B. Hithaadhoo	Hithaadhoo School
31	06	603	B	B. Kendhoo	Kendhoo School
32	06	607	B	B. Maalhos	Maalhohu School
33	06	609	B	B. Thulhaadhoo	Thulhaadhoo School
34	07	701	LH	Lh. Hinnavaru	Atoll Education Centre
35	07	702	LH	Lh. Naifaru	Madhrasathul Ifthithaah
36	07	703	LH	Lh. Kurendhoo	Atoll School
37	07	704	LH	Lh. Olhuvelifushi	Olhuvelifushi School
38	08	801	K	K. Kaashidhoo	Atoll School
39	08	803	K	K. Dhiffushi	Dhiffushi School
40	08	804	K	K. Thulusdhoo	Atoll Education Centre
41	08	808	K	K. Maafushi	Maafushi School
42	09	901	AA	Aa. Thoddoo	Thoddoo School
43	09	902	AA	Aa. Rasdhoo	Atoll Education Centre
44	09	903	AA	Aa. Ukulhas	Ukulhahu School
45	09	904	AA	Aa. Mathiveri	Mathiveri School
46	09	905	AA	Aa. Bodufolhudhoo	Bodufolhudhoo School
47	09	906	AA	Aa. Feridhoo	Atoll School
48	10	1001	ADH	Adh. Hangnaameed-hoo	Hangnaameedhoo School
49	10	1002	ADH	Adh. Omadhoo	Omadhoo School
50	10	1003	ADH	Adh. Kun'burudhoo	Kun'burudhoo School
51	10	1004	ADH	Adh. Mahibadhoo	Atoll Education Centre
52	10	1005	ADH	Adh. Mandhoo	Mandhoo School
53	10	1006	ADH	Adh. Dhan'gethi	Dhan'gethee School
54	10	1007	ADH	Adh. Dhigurah	Dhigurashu School
55	10	1008	ADH	Adh. Fenfushee	Fenfushee School
56	10	1010	ADH	Adh. Maamigili	Atoll School

57	11	1101	V	V. Fulidhoo	Atoll School
58	11	1102	V	V. Felidhoo	Atoll Education Centre
59	11	1103	V	V. Keyodhoo	Keyodhoo School
60	12	1201	M	M. Raiymandhoo	Raiymandhoo School
61	12	1202	M	M. Veyvashu School	Veyvashu School
62	12	1203	M	M. Mulah	Mulaku School
63	12	1204	M	M. Muli	Atoll Education Centre
64	12	1205	M	M. Naalaafushi	Naalaafushi School
65	12	1206	M	M. Kolhufushi	Atoll School
66	12	1207	M	M. Dhiggaru	Dhiggaru School
67	12	1208	M	M. Maduvvaree	Maduvvaree School
68	13	1301	F	F. Feeali	Atoll School
69	13	1302	F	F. Bileiydhoo	Bileiydhoo School
70	13	1303	F	F. Magoodhoo	Magoodhoo School
71	13	1304	F	F. Dharan'boodhoo	Dharan'boodhoo School
72	13	1305	F	F. Nilandhoo	Atoll Education Centre
73	14	1401	DH	Dh. Meedhoo	Atoll School (4 n 5)
74	14	1402	DH	Dh. Ban'didhoo	Ban'didhoo School
75	14	1403	DH	Dh. Rin'budhoo	Rin'budhoo School
76	14	1404	DH	Dh. Hulhudheli	Hulhudheli School
77	14	1406	DH	Dh. Kudahuvadhoo	Atoll Education Centre
78	15	1501	TH	Th. Burunee	Burunee School
79	15	1503	TH	Th. Madifushi	Madifushi School
80	15	1504	TH	Th. Dhiyamigili	Dhiyamigili School
81	15	1506	TH	Th. Kan'doodhoo	Kan'doodhoo School
82	15	1507	TH	Th. Vandhoo	Vandhoo School
83	15	1508	TH	Th. Hirilandhoo	Hirilandhoo School
84	15	1509	TH	Th. Gaadhiffushi	Gaadhiffushi School
85	15	1510	TH	Th. Thimarafushi	Atoll Education Centre
86	15	1512	TH	Th. Kin'bidhoo	Kin'bidhoo School

87	15	1513	TH	Th. Omadhoo	Omadhoo School
88	16	1602	L	L. Dhan'bidhoo	Dhan'bidhoo School
89	16	1605	L	L. Isdhoo Kalaidhoo	Isdhoo Kalaidhoo School
90	16	1608	L	L. Gan	Ihadhdhoo School
91	16	1612	L	L. Maamendhoo	Maamendhoo School
92	16	1613	L	L. Hithadhoo	Hithadhoo School
93	17	1702	GA	Ga. Villingili	Atoll Education Centre
94	17	1703	GA	Ga. Maamendhoo	Maamendhoo School
95	17	1704	GA	Ga. Nilandhoo	Nilandhoo School
96	17	1705	GA	Ga. Dhaandhoo	Dhaandhoo School
97	17	1708	GA	Ga. Gemanafushi	Gemanafushi School
98	18	1801	GDH	Gdh. Madaveli	Madaveli School
99	18	1802	GDH	Gdh. Hoadedhoo	Hoadedhoo School
100	18	1803	GDH	Gdh. Nadella	Nadella School
101	18	1805	GDH	Gdh. Rathafandhoo	Rathafandhoo School
102	18	1810	GDH	Gdh. Thinadhoo	Thinadhoo School
103	19	1902	GN	Gn. Fuvahmulah	Fuvahmulaku School
104	19	1904	GN	Gn. Fuvahmulah	Hafiz Ahmed School
105	20	2004	S	S. Hithadhoo	Hithadhoo School
106	20	2007	S	S. Maradhoo	Maradhoo School
107	20	2010	S	S. Maradhoofeydhoo	Maradhoo Feydhoo School
108	21	2104	Male'	Male'	Kalaafaanu School
109	21	2105	Male'	Male'	Imaduddin School
110	21	2108	Male'	Male'	Dharumavantha School
111	21	2110	Male'	Male'	Muhyiddin School
112	21	2111	Male'	Male'	Ghaazee School



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