

3.1 Introduction

As was discussed in chapter one, the main aim of this study is to find out whether the trend observed between 2003 and 2007 in the achievement of learning outcomes of students completing grade four in Sri Lanka has been sustained.

In order to achieve this aim, one of the objectives of this study was to assess the achievement level of students in the First language, English language and Mathematics, completing grade 04 (by 2008). This chapter presents the patterns of achievement of the students in the three subjects.

The patterns of achievement will first be presented at All Island level to get an overview of the students' achievement in the three subjects. As discussed in chapter 2, the explicit strata in the 2009 study is the province. The implicit stratum are the medium of instruction and school type. Thus, student achievement will next be presented in relation to province. This would be followed by achievement in relation to medium of instruction, school type, location and gender.

In order to discuss the distribution of achievement, three indicators are used. They are:

- Mean - the arithmetic average of all individual measures
- Standard Error/Standard Deviation
- Skewness

Standard Deviation (SD)

It is a measure of variation (or variability). It helps to find out variation between the scores of a distribution and the mean. In other words, the larger the Standard Deviation greater the differences between the individual scores and the means of the scores.

Standard Error

The standard deviation of the sampling distribution of mean is known as the standard error of the mean. It can be considered as an indicator of the generalizability of the calculated mean to the population.

Skewness

Skewness refers to the lack of symmetry. A normal curve is a perfectly symmetrical curve. A skewed curve can be high on the left or right.

Negative Skewness

The distributions are said to be skewed negatively when there are many individuals in a group with their scores higher than the average score of the group. Such a curve would be high on the right and drops off to the left.

Positive Skewness

The distributions are said to be skewed positively when there are more individuals in a group who score less than the average score for their group and would be high on the left and drops off to the right.

(Holcomb,Z. 1998)

3.2 Patterns of achievement at National Level

National Level student achievement would be first discussed in relation to student performance pertaining to First language.

3.2.1 National level achievement in First language

Since the First language of the two main ethnic groups differ, the achievement in First language would be discussed separately for Sinhala and Tamil languages.

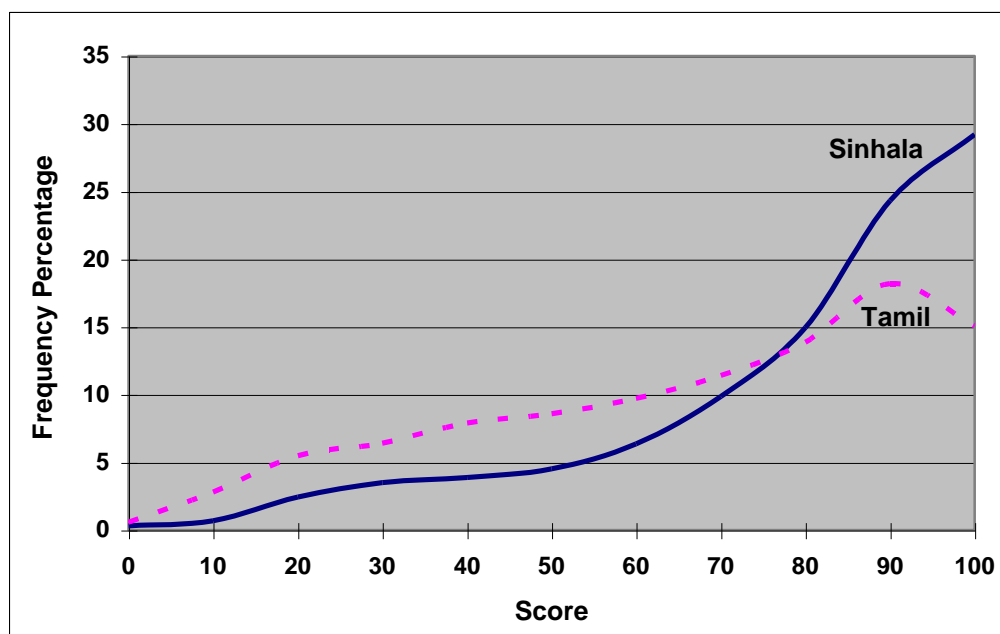


Figure 3.1: All Island achievement in Sinhala and Tamil languages - 2009

The above frequency polygons for the First languages are negatively skewed displaying that majority of the students Island wide have achieved high marks for the First languages.

In contrast to the achievement in Sinhala language, the achievement in Tamil language displays a slightly different pattern.

As Figure 3.1 displays the frequency polygon for the Tamil language is also negatively skewed, but the skewness is greater. Therefore, compared to Sinhala as a First language, the achievement in Tamil as a First language is relatively lower. There appears to be lesser percentage of very high achievers and more low achievers.

3.2.2 National level achievement in English language

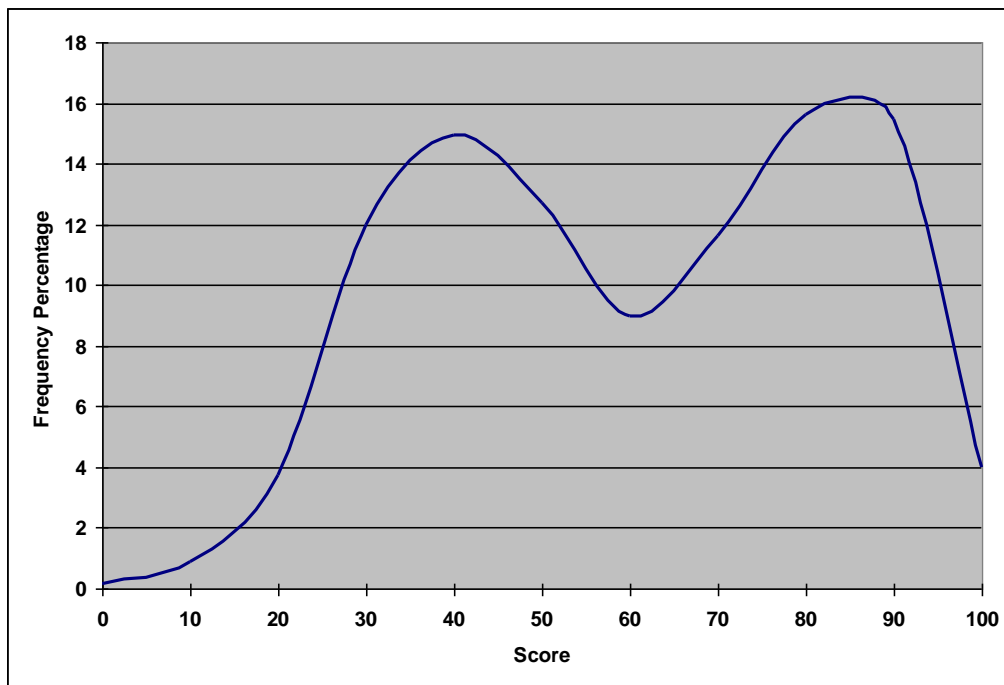


Figure 3.2: All Island achievement in English language 2009

The bi-modal nature of the frequency polygon for the English language (Figure 3.2) is evidence that there are both low achievers and high achievers. There is a large percent of students who fall into the 30-50 marks range. At the same time there are also high achievers who fall into the 70 -100 mark range and this group is larger than the 30 -50 percent group. These two groups display the heterogeneity that exists in the achievement levels in the English language Island wide.

3.2.3 National level achievement in Mathematics

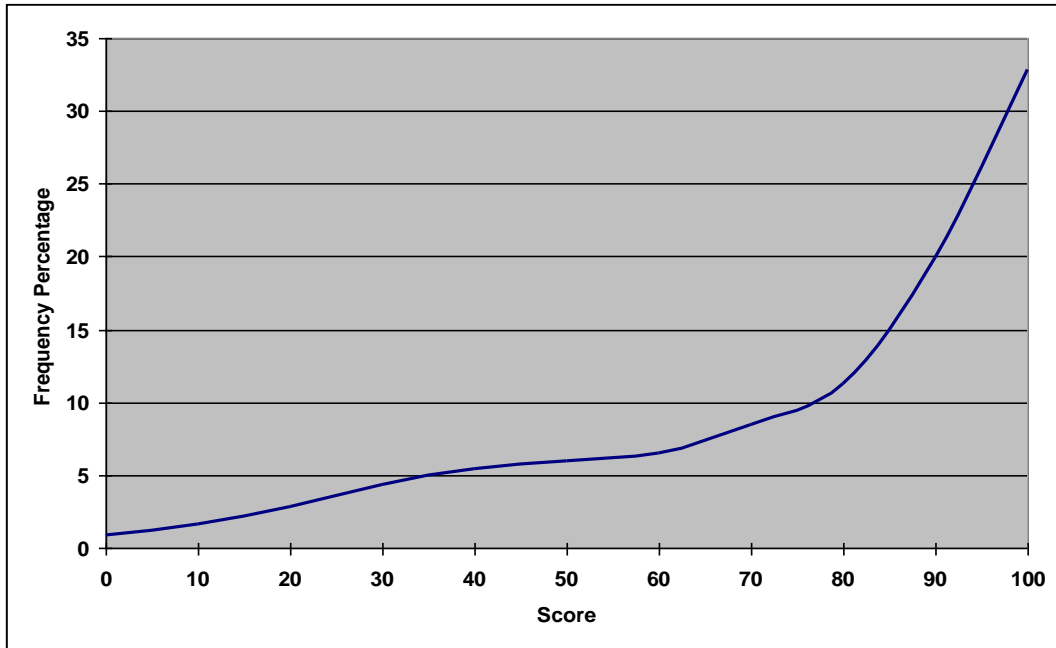


Figure 3.3: All Island achievement in Mathematics 2009

The Island wide achievement in Mathematics as shown in the frequency polygon (Figure 3.3) indicates, that there is a higher percentage of students, falling in to the high achiever group than to the lower achiever group.

3.2.4 Summary of Island wide achievement patterns

The above discussion highlights, that the patterns observed in students' achievement in the year 2009 are that;

- The overall performance in Sinhala, Tamil and Mathematics is satisfactory with a higher percentage of students scoring high marks.
- Performance in Tamil as a First language is relatively low compared to Sinhala as a First language with a lesser percentage of students scoring very high marks.
- Performance in English is satisfactory with more students scoring high marks. However, there is heterogeneity in performance as two distinct groups of high achievers and middle level achievers could be identified.

3.3 Provincial wise student achievement

While the national level achievement gives the overall view of achievement patterns, it is necessary to investigate further, to identify provincial level disparities and similarities in learning outcomes.

3.3.1 Provincial wise student achievement in First languages

3.3.1.1 Provincial wise achievement in Sinhala language

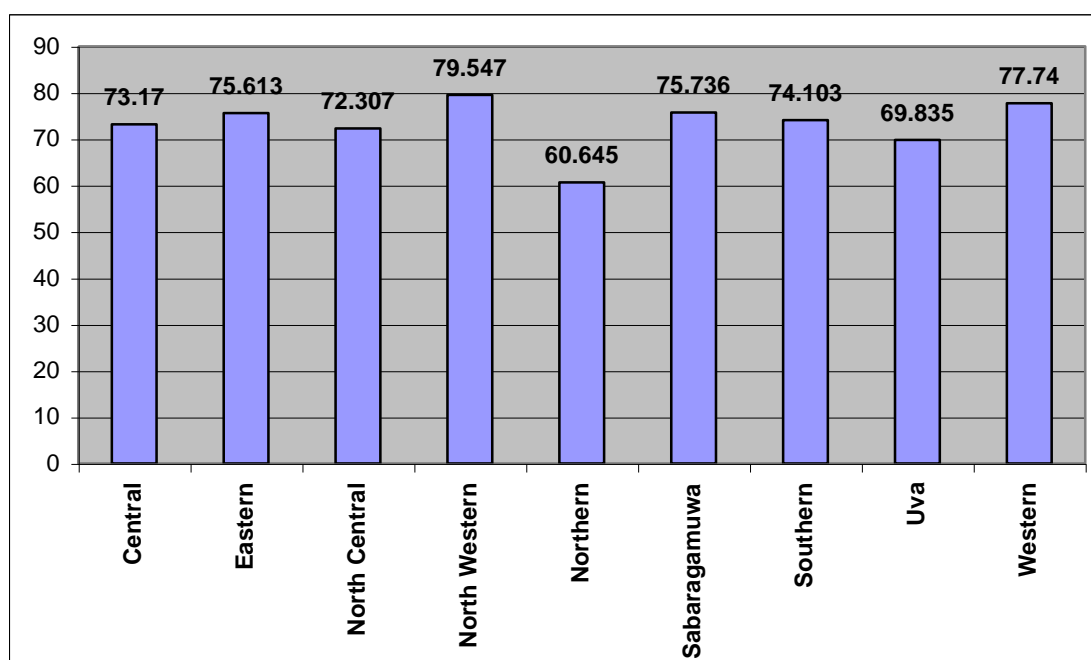


Figure 3.4: Provincial wise mean values in Sinhala language - 2009

The most significant finding in relation to the achievement in Sinhala is that, the North Western Province has obtained the highest mean achievement compared to the other provinces, even higher than the Western Province which is claimed to have more resources. On the other hand, the Northern Province records the lowest mean value.

Mean values for the Sinhala language ranges from 60.6 - 79.5 among the provinces.

Table 3.1 -Summary of the provincial wise achievement in Sinhala language

Province	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Central	73.170	23.5039	.1550	-1.166	504.338	.000
Eastern	75.613	21.4203	.2682	-1.090		
North Central	72.307	22.2770	.1713	-1.031		
North Western	79.547	20.6465	.1171	-1.436		
Northern	60.645	29.4151	.9019	-.135		
Sabaragamuwa	75.736	23.3192	.1500	-1.232		
Southern	74.103	22.5363	.1190	-1.170		
Uva	69.835	23.3089	.1788	-1.006		
Western	77.740	21.4405	.0835	-1.339		
All Island	75.546	22.3987	.0476	-1.222		

The low variation in the Standard Deviation among the provinces indicates that there is not much difference in the achievement in Sinhala language among provinces in this sample. However, in the Northern Province the SD is very high, compared to other provinces. This indicates that there is lot of variation among student achievement in this province. Further, most of the provinces have obtained a lower SD value indicating homogeneous performance among the provinces.

All Provinces, except the Northern Province display a very high, negatively skewed distribution of marks for Sinhala language. This indicates that most of the students' achievement in these Provinces is higher than the average. Not a single Province shows a positively skewed distribution. Therefore, it could be claimed that most of the students' achievement in the Sinhala language, in all provinces is very high compared to the average statistics.

This claim is further elaborated through the Boxplot graph (Figure 3.5).

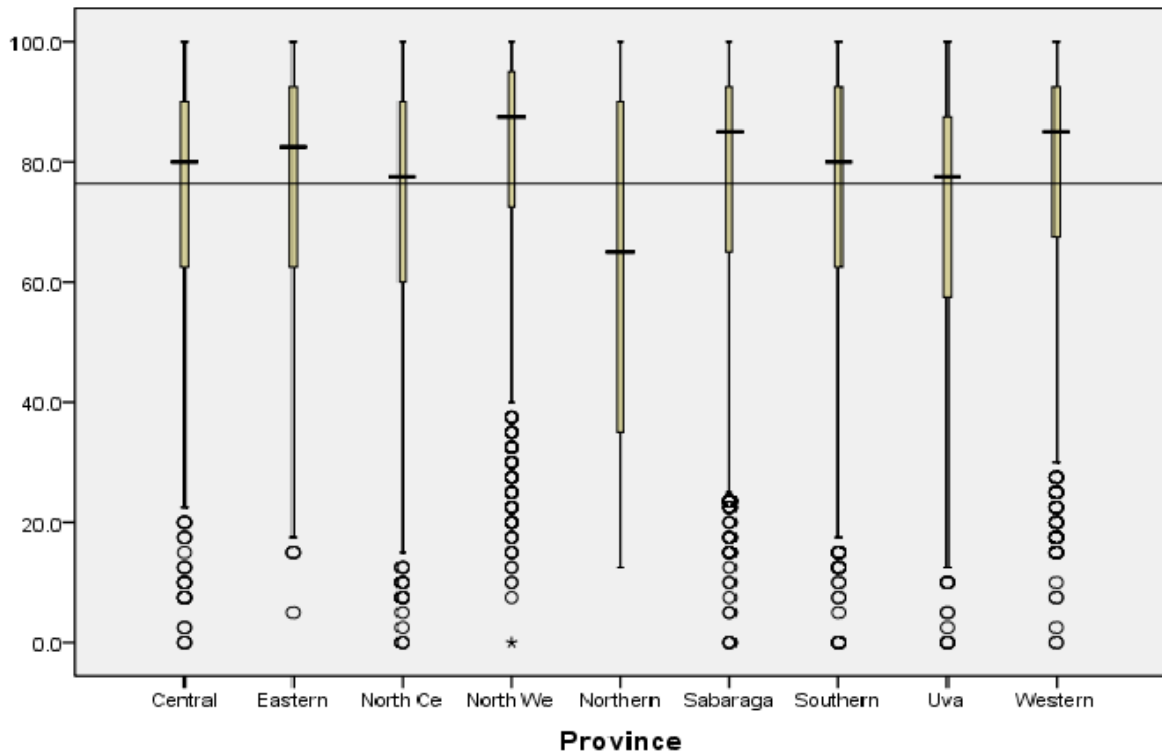


Figure 3.5: Boxplot graph for the Sinhala language achievement by province

3.3.1.2 Provincial wise achievement in Tamil language

In contrast to the marks distribution in Sinhala as the First language, there is a difference in the pattern of distribution of marks in Tamil as a First language. The mean values among the provinces ranges from 54.6 - 72.3 which is lower than the range for the Sinhala language.

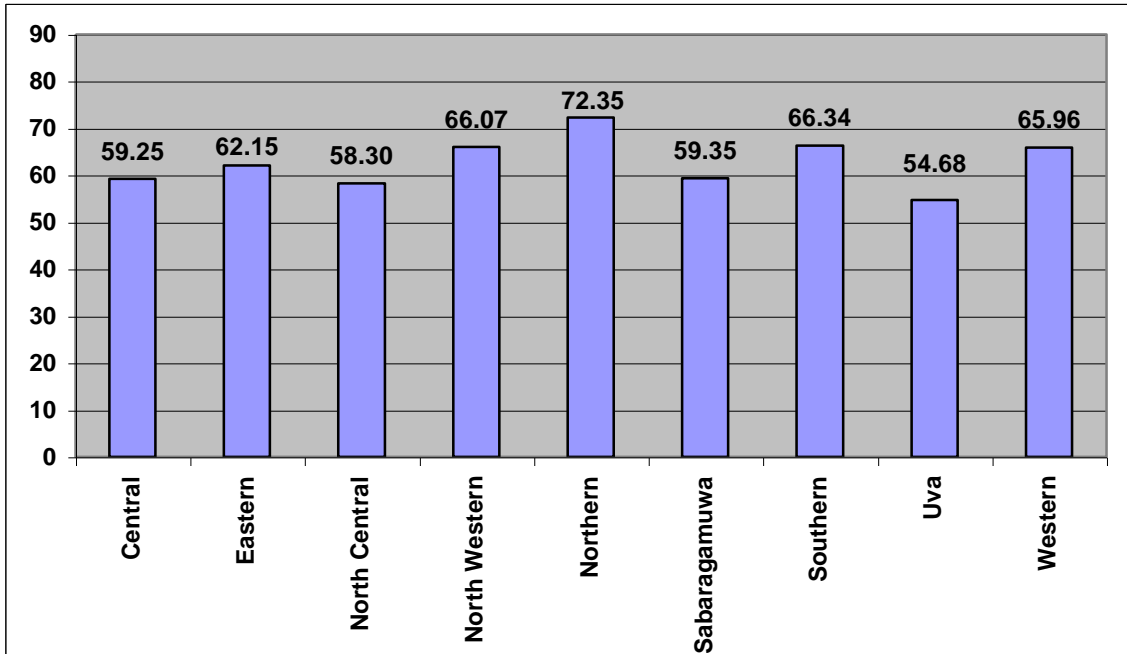


Figure 3.6: Provincial wise mean values in Tamil language - 2009

When considering the provincial wise mean values, Uva Province records the lowest value.

Table 3.2: Summary of the provincial wise achievement in Tamil language

Province	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Central	59.245	27.1748	.2155	-.350	355.125	.000
Eastern	62.147	25.5464	.1574	-.529		
North Central	58.295	26.6927	.6008	-.268		
North Western	66.070	25.9877	.3537	-.537		
Northern	72.346	24.5374	.2124	-.974		
Sabaragamuwa	59.350	26.0514	.4905	-.382		
Southern	66.339	22.5405	.6382	-.331		
Uva	54.679	28.5658	.4316	-.187		
Western	65.960	25.9089	.2938	-.708		
All Island	63.382	26.4201	.0939	-.538		

As Table 3.2 indicates, the difference in the marks distribution is higher between Island wide and provincial wise.

Even though the highest mean value has been obtained by the Northern Province for the Tamil language, its SD value (24.54) is relatively higher than the Southern Province. Thus, even though the average student achievement is better in the Northern Province when compared to other Provinces, the Southern Province represents a more homogeneous student population in relation to Tamil language achievement.

On the other hand, the average achievement is low in the Uva (mean = 54.68) Province. Yet, its SD is high. Thus, it appears that Uva Province represents a more heterogeneous student population with respect to Tamil language achievement.

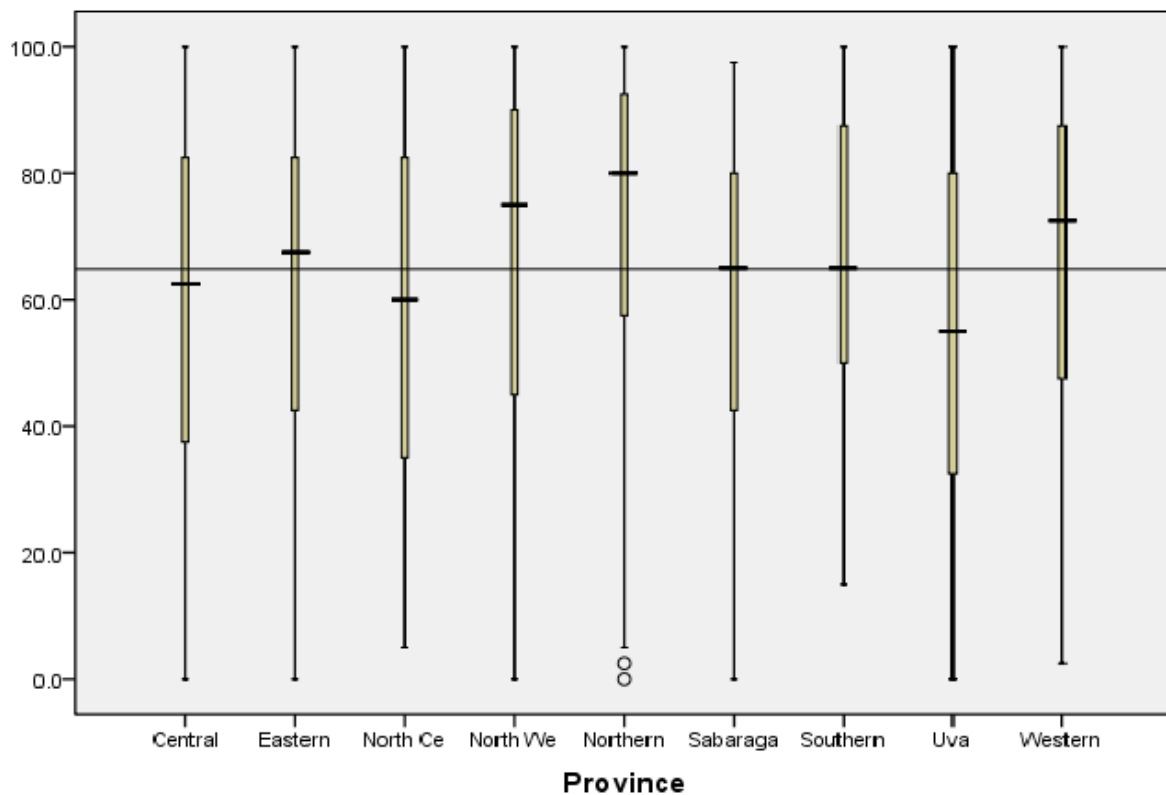


Figure 3.7: Boxplot graph for the Tamil language achievement by province

3.3.1.3 Student achievement in First language -summary

The above presentation of test scores indicates that there are similarities as well as differences in the patterns of distribution of test scores with respect to Sinhala language and Tamil language.

3.3.2 Provincial wise student achievement in English language

Student achievement in the English language, which is the Second language of the Sample would be presented next.

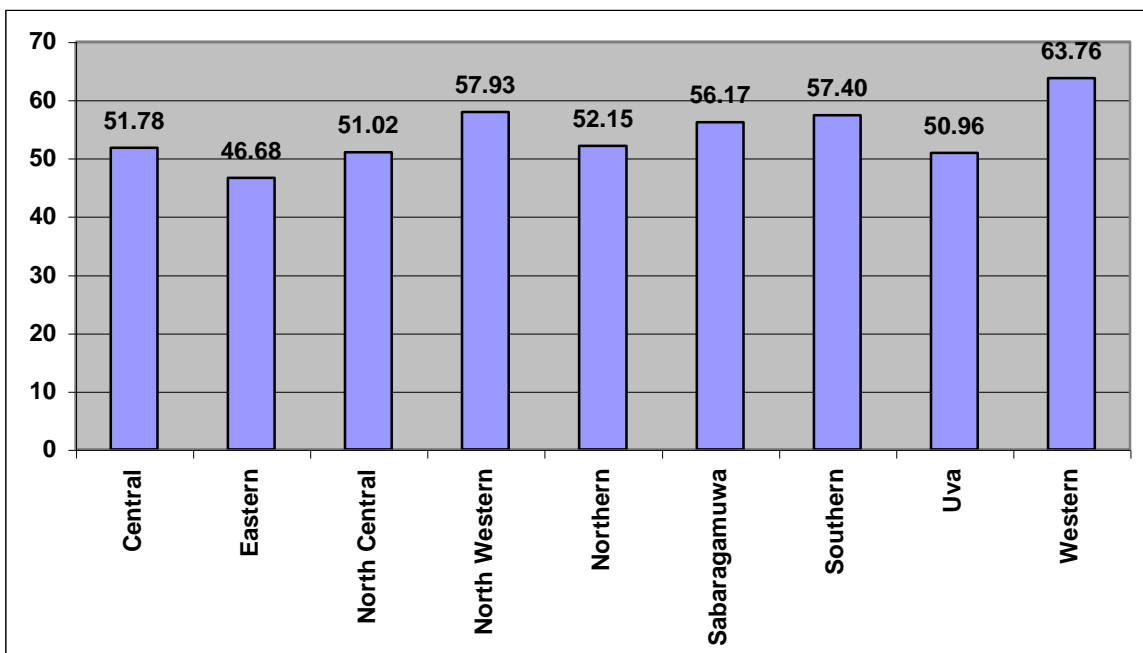


Figure 3.8: Provincial wise mean values in English language - 2009

There appears to be much variation in the achievement with respect to English language in the provinces. The variation in means between Eastern and Western provinces is quite marked as depicted in Figure 3.9. There are variations in the mean scores among other provinces as well, although the differences are not as high as between Eastern and Western provinces.

Table 3.3: Summary of the provincial wise achievement in English language

Province	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Central	51.78	22.42	0.11	-0.03	2.313	.000
Eastern	46.68	21.37	0.12	0.31		
North Central	51.02	22.32	0.16	0.19		
North Western	57.93	22.55	0.12	-0.19		
Northern	52.15	23.75	0.20	0.09		
Sabaragamuwa	56.17	23.28	0.14	-0.08		
Southern	57.40	23.25	0.12	-0.12		
Uva	50.96	21.73	0.15	0.13		
Western	63.76	22.56	0.08	-0.54		
All Island	55.91	23.23	0.04	-0.10		

Most of the students' achievement in the Western Province is higher than the average statistics. This is denoted by (-0.54), a slightly higher negatively skewed distribution of marks compared to the other Provinces. However, a significant feature in the distribution of marks provincial wise is that there are some provinces which show positively skewed distributions. Such distributions indicate that there are more students in such provincial samples, who score less than the average score for their group. Eastern Province (0.31) is one such positively skewed province and as Figure 3.8 also indicates, it is the province with the lowest mean score.

The Boxplot graph (Figure 3.9), graphically illustrates the differences in the distribution of marks among the provinces.

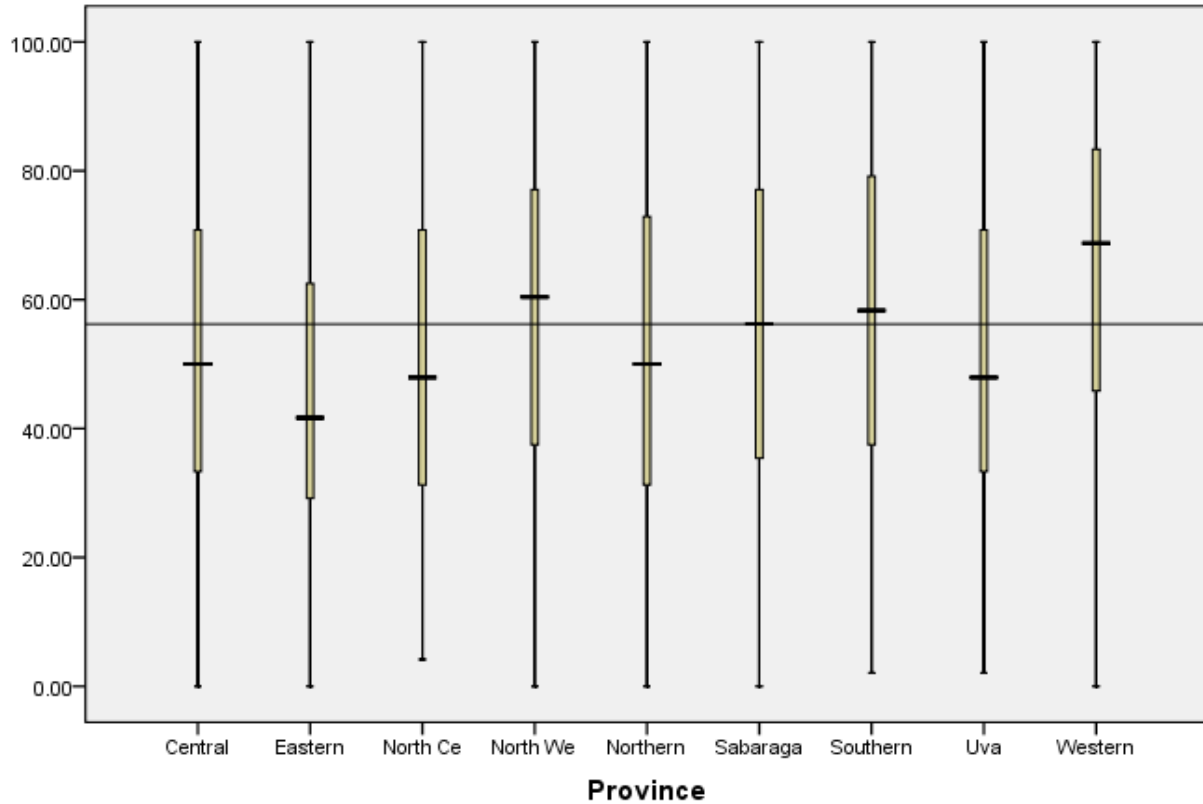


Figure 3.9: Boxplot graph for the English language achievement by province

Compared to the Provincial wise patterns in achievement in Sinhala and Tamil languages, the achievement patterns in the English language showed differences. While in the two First languages, in all provinces the average mean was higher than the Island mean, in English, in some provinces, the mean was below the Island mean. This suggests that variation in provincial wise achievement is greater with respect to English language.

Further, even the all Island mean was less than for the other two subjects.

3.3.3 Provincial wise student achievement in Mathematics

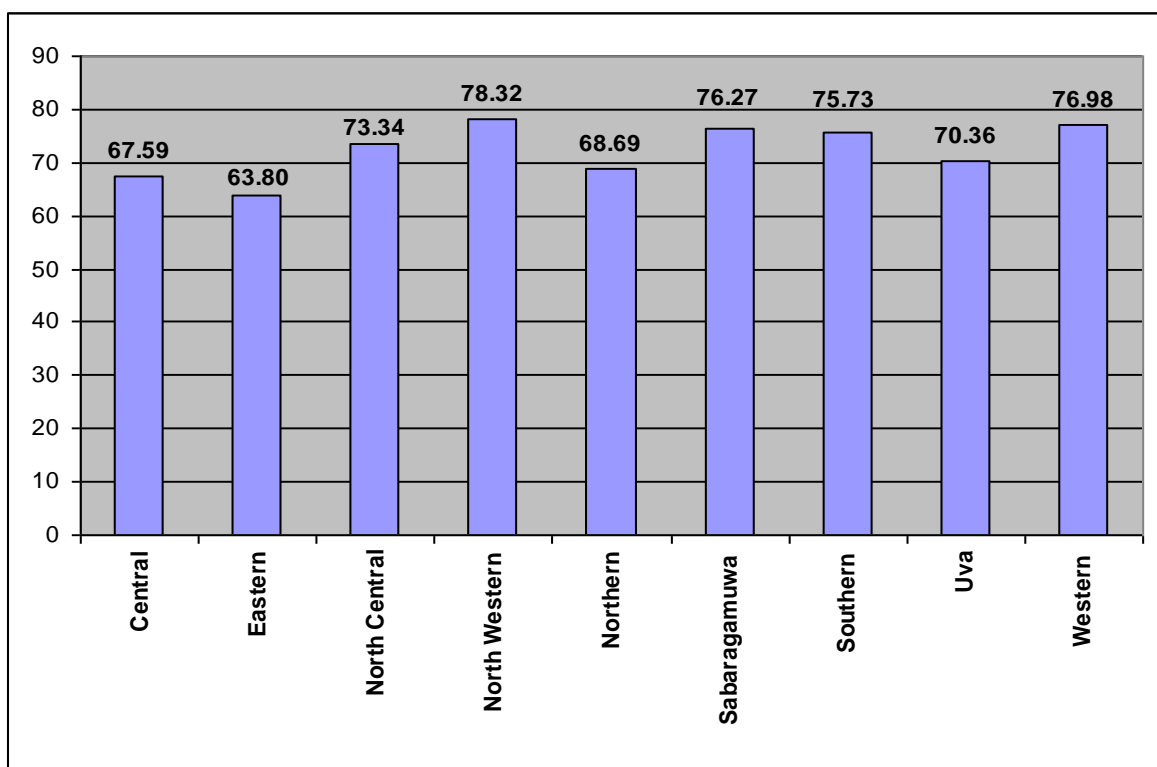


Figure 3.10: Provincial wise mean values in Mathematics - 2009

Mathematics performance in most provinces indicates a satisfactory achievement of learning outcomes. In most provinces, the mean is around seventy. However, the performance in the Eastern Province is not very satisfactory.

Table 3.4: Summary of the provincial wise achievement in Mathematics

Province	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Central	67.589	27.1601	.1377	-.694	1.399	.000
Eastern	63.798	27.2818	.1507	-.532		
North Central	73.343	26.0905	.1901	-1.007		
North Western	78.319	23.0617	.1206	-1.333		
Northern	68.690	26.4348	.2203	-.762		
Sabaragamuwa	76.272	24.4842	.1474	-1.239		
Southern	75.733	24.4285	.1268	-1.285		
Uva	70.364	26.5817	.1810	-.913		
Western	76.979	23.8349	.0877	-1.303		
All Island	73.184	25.6480	.0467	-1.033		

The variation in marks among provinces is also negligible, indicating that there is homogeneity in achievement in Mathematics. However, Central and Eastern Provinces have obtained the highest SD value, indicating that there is much variation among the student achievement in these provinces.

Most of the students' achievement, in most provinces is higher than the average statistics as shown by the negative skewness. (Figure 3.4) However, performance in the Uva, Central and Northern provinces need to be improved.

3.3.4 Summary of Provincial wise achievement patterns for 2009

First language

Sinhala language

Except for the Uva and Northern provinces, mean scores in other provinces are closer or above the Island mean, which is 75.5.

Tamil language

In comparison, the performance in the Tamil language is relatively low with an Island mean of 63.3.

Northern province which recorded the lowest mean for Sinhala language, records the highest mean for Tamil language.

Uva province which also recorded a low mean score for Sinhala language, records the lowest mean score for Tamil language as well. Further the variation in student performance within a province is also highest in Uva.

English language

The Island wide performance in English language, compared to the First language is relatively low with a mean score of 55.9.

In four provinces, the distribution of scores indicates that the percentage of low achievers in English is higher than the high achievers.

The Eastern province records the lowest mean, with the Uva province the second lowest. In both these provinces the variation in marks within the province is less, indicating a homogeneous sample of low achievers.

Mathematics

Performance in Mathematics in most provinces record higher than the Island mean scores.

However, Eastern, central and Uva provinces record the lowest mean scores respectively, with high variations in marks within the province.

The analysis of the achievement in the four subjects provincial wise reveal that Uva province records low achievement of learning outcomes in all four subjects.

Northern province records low performance in Sinhala language, English language and Mathematics while scoring high in Tamil language.

While Eastern province indicates low performance in both English language and Mathematics, Central province performance is low in Mathematics. North Central province also records low performance in English.

In conclusion, it could be claimed that the average achievement of learning outcomes display high provincial variations. This pattern indicates that there is variation in the equitable access to Education.

All Island student performance in relation to medium of instruction, school type, gender and location would be discussed in section 3.4.

3.4 All Island achievement by medium of instruction

3.4.1 Achievement in English language by medium of instruction

Table 3.5: Summary of the Island wide achievement by medium of instruction - English language

Medium	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Sinhala	58.4157	23.06360	.04897	-.226	1.015	.000
Tamil	48.8963	22.24790	.07896	.219		
Island wide	55.9063	23.23308	.04234	-.102		

There is a very high difference in students' performance in English language between Sinhala medium students and Tamil medium students. (Table 3.5) However, the SD of

these two do not have such differences, indicating that differences are similar among the same language group.

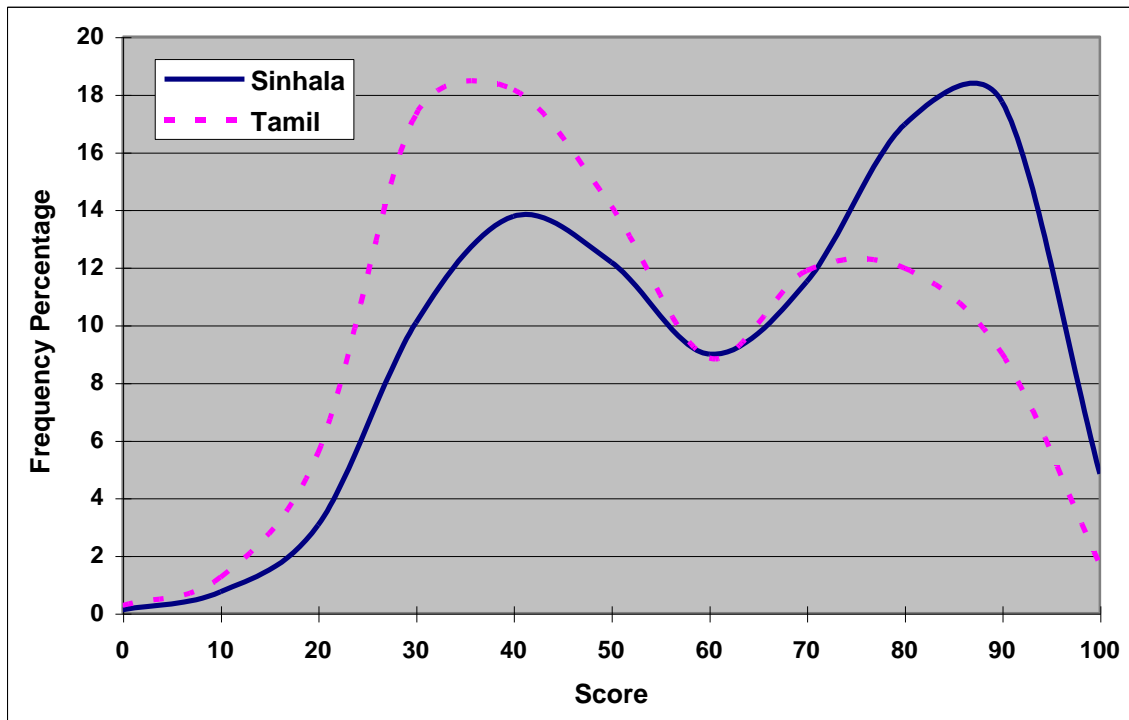


Figure 3.11: All Island English language achievement by medium of instruction

The difference in performance by the Sinhala medium and Tamil medium students is also shown in Figure 3.11. Achievement of the English language Island wide indicates (Figure 3.3) a slightly negatively skewed distribution, indicating that most students' achievement was higher than the average. According to Figure 3.11 Sinhala medium students' English language achievement is negatively skewed. On the other hand, Tamil medium students' mark distribution is positively skewed, indicating that there are more students in the sample, who have scored less than the average score for their group. This means that Sinhala medium students' achievement has effectively contributed to make Island wide value negative.

3.4.2 Achievement in Mathematics by medium of instruction

Table 3.6: Summary of the Island wide achievement by medium of instruction - Mathematics

Medium	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Sinhala	77.039	24.0197	.0510	-1.328	2.035	.000
Tamil	62.393	26.9479	.0957	-.446		
Island wide	73.184	25.6480	.0467	-1.033		

Performance in Mathematics of the Tamil medium students is very much lower than the Sinhala medium students (Table 3.6). Further, there is greater variation in the marks of the Tamil medium students as denoted by the higher SD. The Figure 3.12 illustrates this further.

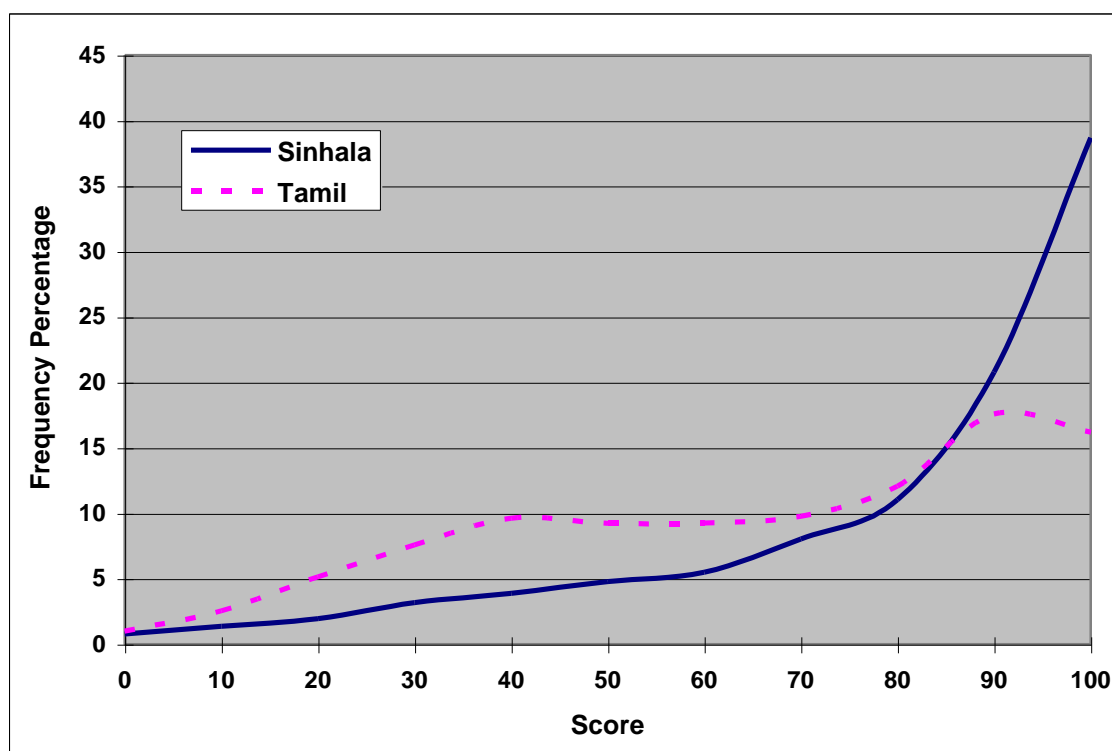


Figure 3.12: All Island Mathematics achievement by medium of instruction

The Sinhala medium students' performance shows that majority of the students are high achievers.

On the other hand, the Tamil medium students' performance, as indicated by the purple line denotes that the students fall into three levels - the lower level (0-39), the

middle level (40-75) and the higher level (over 75). This positively skewed mark distribution indicates that the number of high achievers are small.

3.5 All Island differences in achievement by school type

3.5.1 Achievement in Sinhala language by school type

Table 3.7: Summary of the Island wide achievement by school type - Sinhala language

School Type	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
1AB	82.010	18.0936	.0878	-1.801	2.785	.000
1C	74.894	21.9073	.0884	-1.204		
Type 2	70.679	24.1789	.0877	-.918		
Type 3	78.793	21.5296	.1056	-1.396		
Island wide	75.546	22.3987	.0476	-1.222		

Island wide performance in Sinhala language is high, irrespective of the school type. Except in Type 2 schools, where the mean score is less than the Island mean, in the other school types the mean score is almost equal or high.

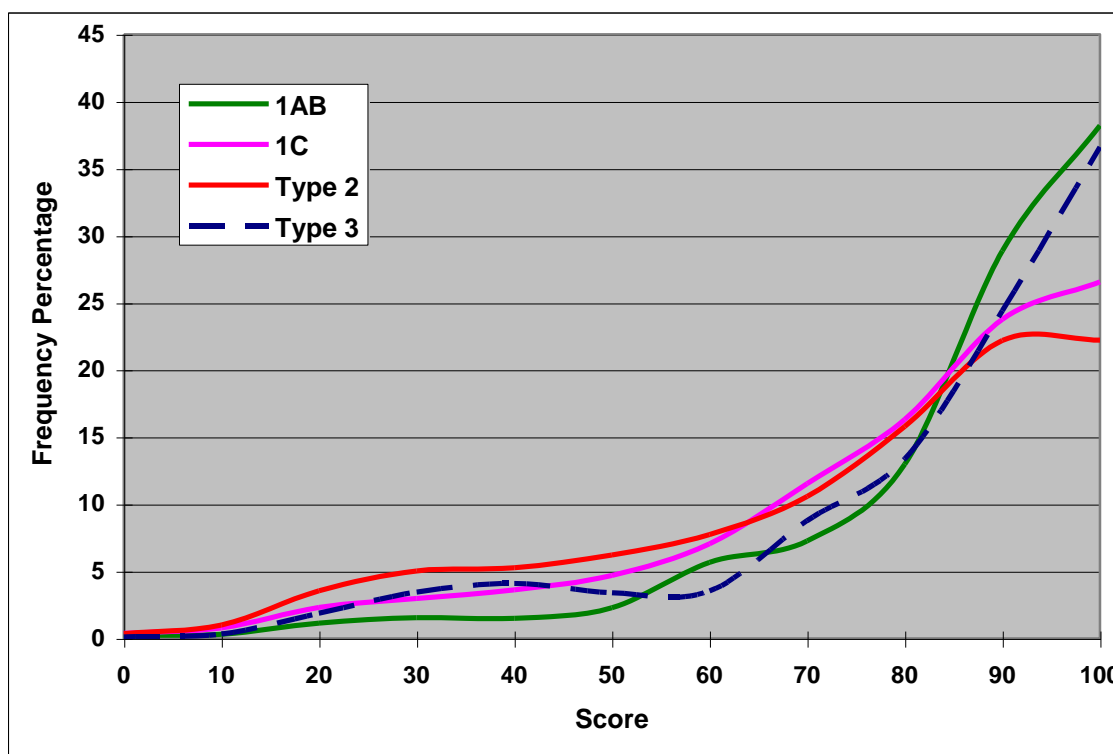


Figure 3.13: All Island achievement in Sinhala language by school type

The Frequency polygons also indicate that in all school types there are more high achievers in Sinhala language than low achievers.

3.5.2 Achievement in Tamil language by school type

Table 3.8: Summary of the Island wide achievement by school type - Tamil language

School Type	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
1AB	72.583	22.3195	.2453	-.963	743.075	.000
1C	66.855	25.7499	.1681	-.751		
Type 2	59.759	26.5296	.1608	-.320		
Type 3	60.460	27.1643	.1912	-.436		

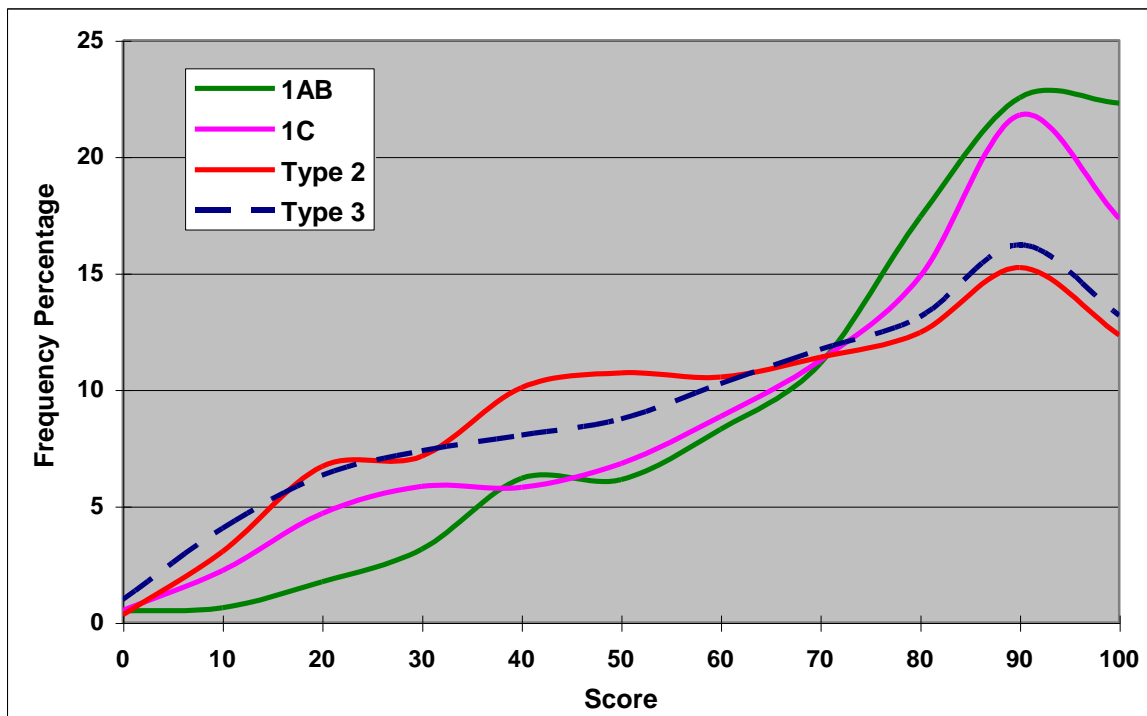


Figure 3.14: All Island achievement in Tamil language by school type

Compared to Sinhala language performance, the Tamil language performance by school type shows a slightly different pattern. The Island mean is relatively lower indicating an overall low performance. Compared to the All Island performance, except in Type 2 schools, the other school types have performed better. Yet, the surprising finding is that Type 3 schools' performance is not much different from Type 2 schools, and their performance is lower than that of Type 1C schools.

3.5.3 Achievement in English language by school type

Table 3.9: Summary of the Island wide achievement by school type - English language

School Type	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
1AB	68.2969	21.53829	.09595	-.782	7.676	.000
1C	54.9423	22.51596	.07695	-.093		
Type 2	49.9685	21.93182	.06819	.166		
Type 3	57.0774	23.63599	.09514	-.165		
Island wide	55.9063	23.23308	.04234	-.102		

English language achievement Island wide, displays greater variation among school types. Very high mean differences exist between 1AB schools and Type 2 schools. However, SD values being similar between these two types of schools indicate that differences are same among the same school type.

Achievement of the English language Island wide indicates a slightly negatively skewed distribution. All school types, except Type 2, display negatively skewed curves. Thus, achievement of the students in these school types has effectively contributed to the Island wide negatively skewed distribution. In all these school types two categories of students - low achievers and high achievers can be seen. However, except in Type 2 schools, in the other types of schools the high achievers are more than the low achievers. However, in Type 2 schools the low achievers are more than the high achievers contributing to a positively skewed curve (Figure 3.15)

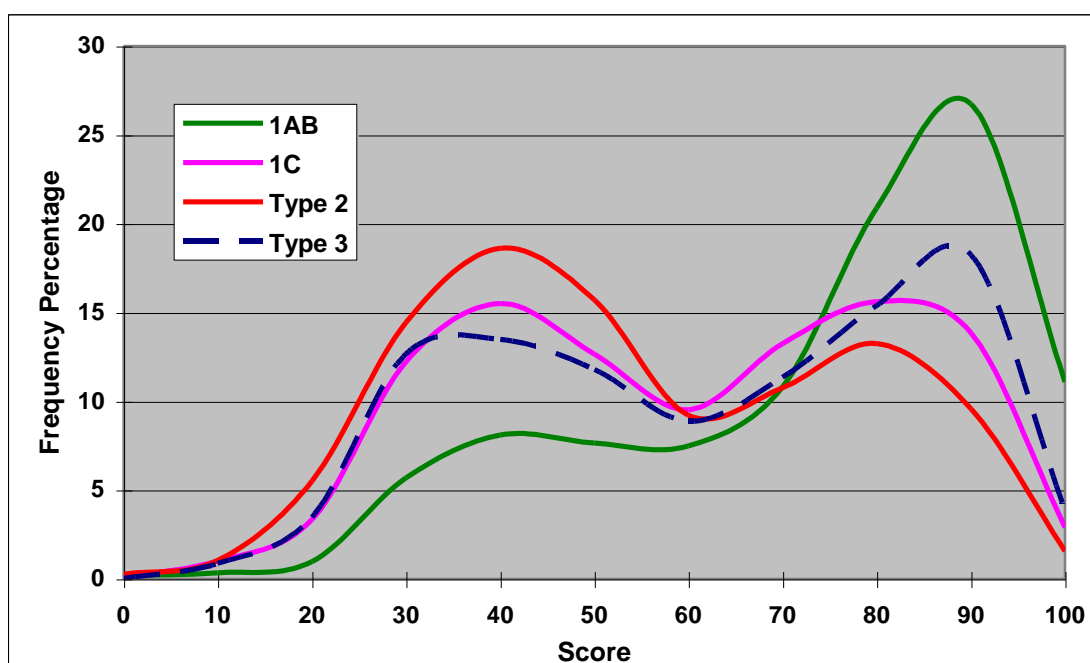


Figure 3.15: All Island achievement in English language by school type

3.5.4 Achievement in Mathematics by school type

Table 3.10: Summary of the Island wide achievement by school type - Mathematics

School Type	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
1AB	81.252	21.0286	.0934	-1.592	2.978	.000
1C	73.942	24.7874	.0847	-1.115		
Type 2	68.414	27.0892	.0842	-.775		
Type 3	73.497	25.9862	.1045	-1.001		
Island wide	73.184	25.6480	.0467	-1.033		

Island wide Mathematics performance by school type is satisfactory, except in Type 2 schools. There is great variation in achievement between 1AB and Type 2 schools. The performance in other two types of schools is closer to the Island mean.

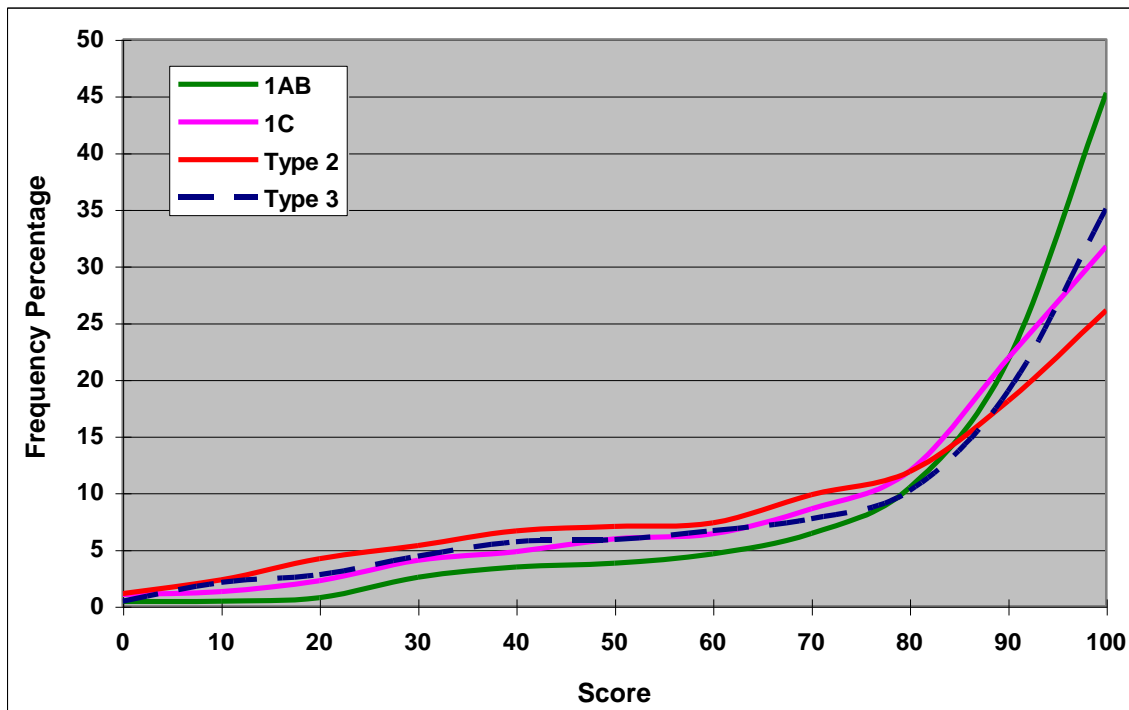


Figure 3.16: All Island achievement in Mathematics by school type

In all school types, there are more high achievers (Figure 3.16) than low achievers.

3.6 All Island achievement by gender

3.6.1 Achievement in Sinhala language by gender

Table 3.11: Summary of the Island wide achievement by gender - Sinhala language

Gender	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Female	80.250	19.2110	.0573	-1.584	1.054	.000
Male	70.700	24.3331	.0737	-.906		
Island wide	75.546	22.3987	.0476	-1.222		

The performance of girls in Sinhala language is better than the boys and higher than the Island mean as well. Further, as indicated by the SD there is less variation among the achievement of girls compared to the boys' performance.

Achievement of the Sinhala language Island wide indicates a negatively skewed distribution. Female students' Sinhala language achievement is highly skewed than the male students' achievement (Figure 3.17). This indicates that Female students' achievement has effectively contributed to the Island wide high negative value.

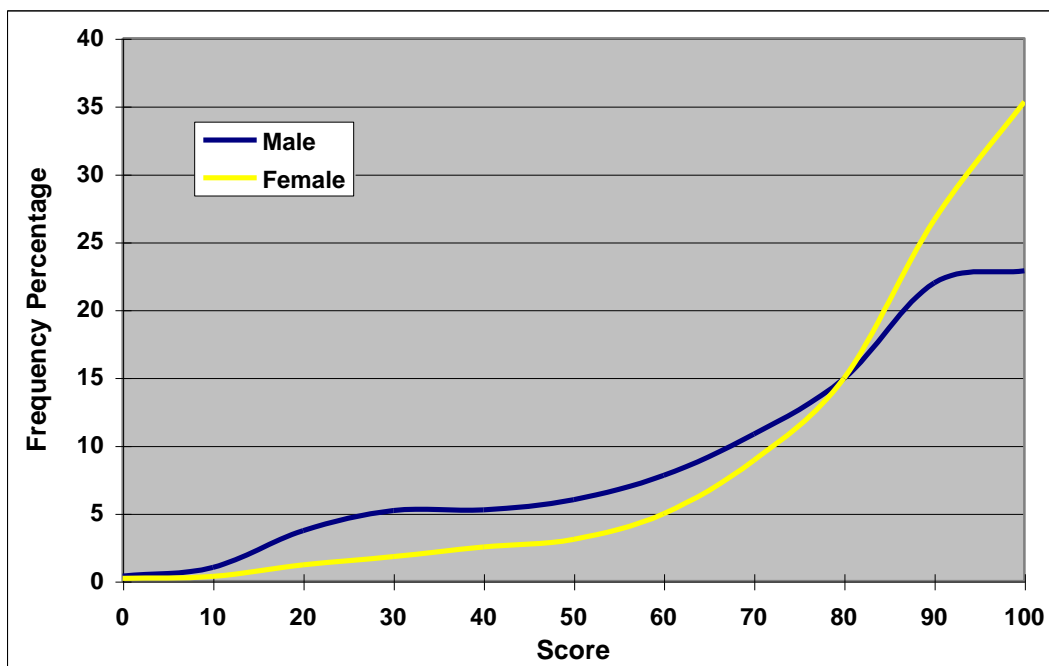


Figure 3.17: All Island achievement in Sinhala language by gender

3.6.2 Achievement in Tamil language by gender

Table 3.12: Summary of the Island wide achievement by gender - Tamil language

Gender	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Female	68.300	24.8997	.1242	-.772	2.931	.000
Male	58.315	26.9786	.1366	-.317		
Island wide	63.382	26.4201	.0939	-.538		

The same pattern that was observed in the performance in the Sinhala language, can be seen in the achievement of Tamil language by gender as well. The girls have performed better than the boys. Variation in marks between girls is less than the boys. However, the variation in boys' marks is closer to the All Island variation in marks.

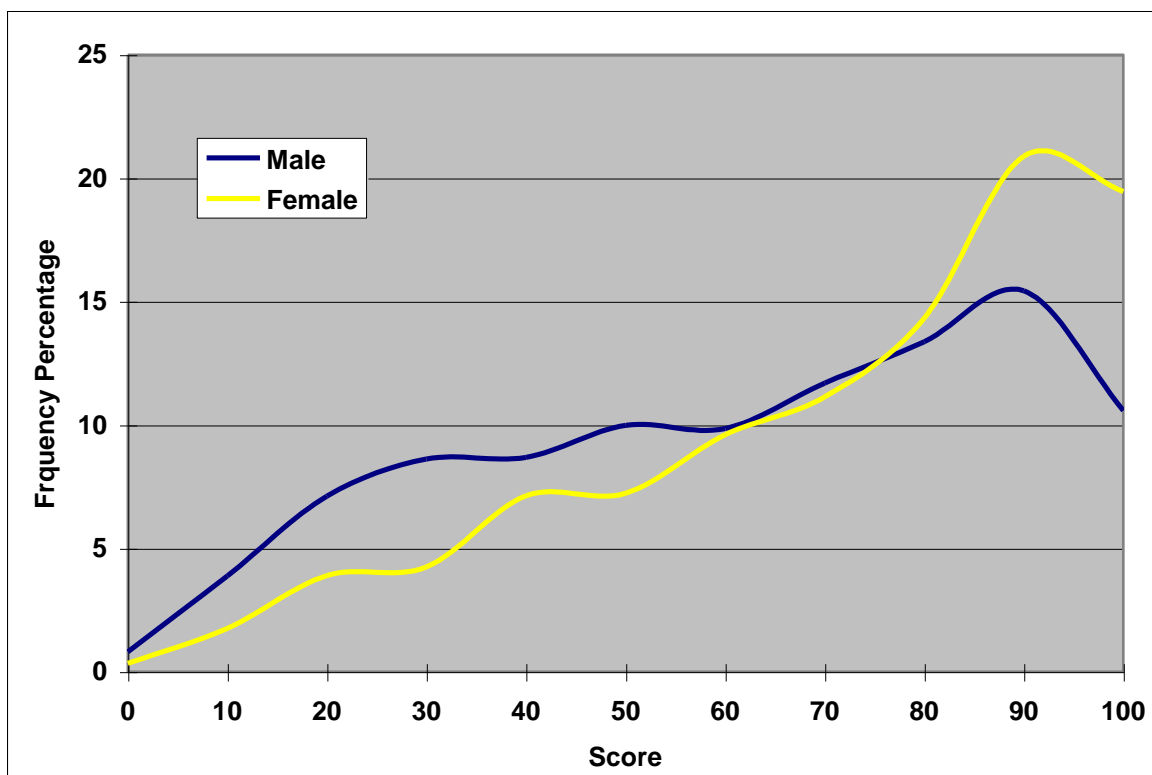


Figure 3.18: All Island achievement in Tamil language by gender

The variation in marks among boys and girls is further elaborated through the frequency curves (Figure 3.18), the number of high achievers is high among girls than boys.

3.6.3 Achievement in English language by gender

Table 3.13: Summary of the Island wide achievement by gender - English language

Gender	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Female	59.7785	22.46162	.05748	-.297	8.859	.000
Male	51.9227	23.33990	.06058	.106		
Island wide	55.9063	23.23308	.04234	-.102		

Although there is a very high mean difference between male students' and female students' achievement, the SD of these two mark distributions do not have such differences. The Island wide SD is representative of the male and female mark distributions. Similar SD values for male and female students indicate that the mark variations are the same among the same gender group.

Further, as Figure 3.19 displays, there are two distinct levels of high achievers and low achievers, both among boys as well as among the girls. However, among the girls the percentage of high achievers is high, while among the boys the percentage of low achievers is high.

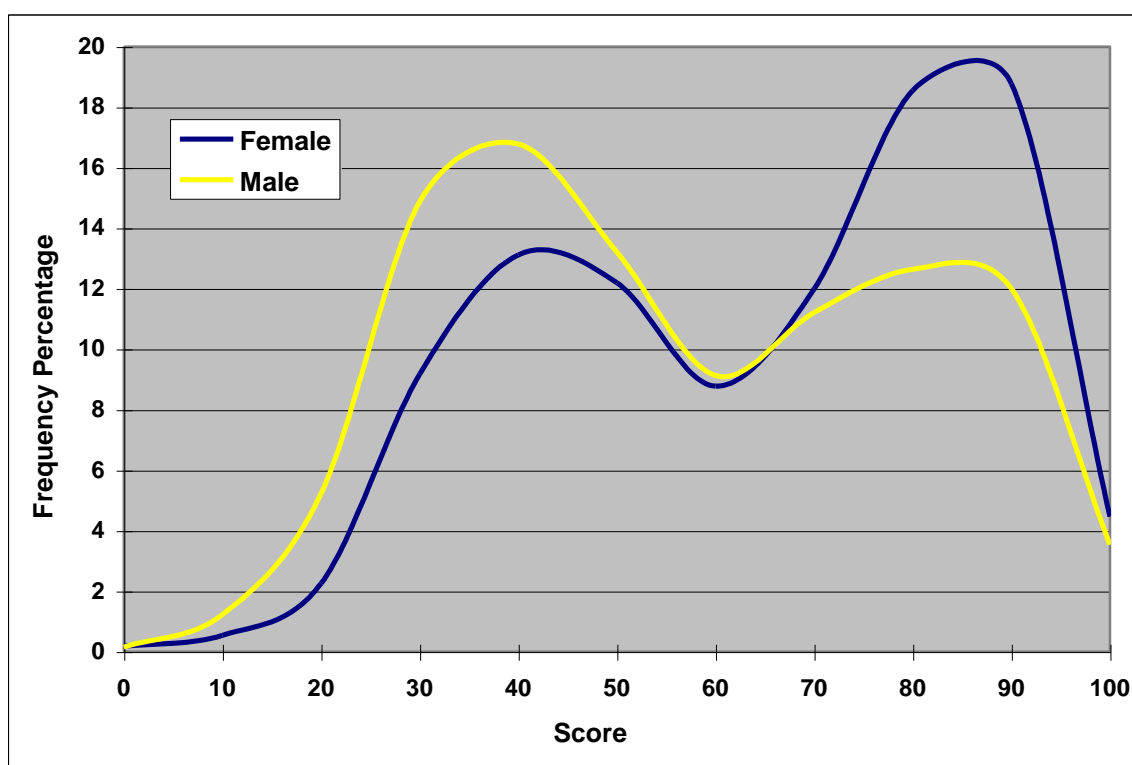


Figure 3.19: All Island achievement in English language by gender

3.6.4 Achievement in Mathematics by gender

Like in language achievement girls' achievement in Mathematics is also higher than the boys. Further, there is more variation in scores among boys and their mean performance is less than the Island mean. (Table 3.14)

Table 3.14: Summary of the Island wide achievement by gender - Mathematics

Gender	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Female	76.875	22.8745	.0585	-1.243	6.566	.000
Male	69.386	27.7101	.0719	-.811		
Island wide	73.184	25.6480	.0467	-1.033		

As Figure 3.20 displays, there are more high achievers among females than among males.

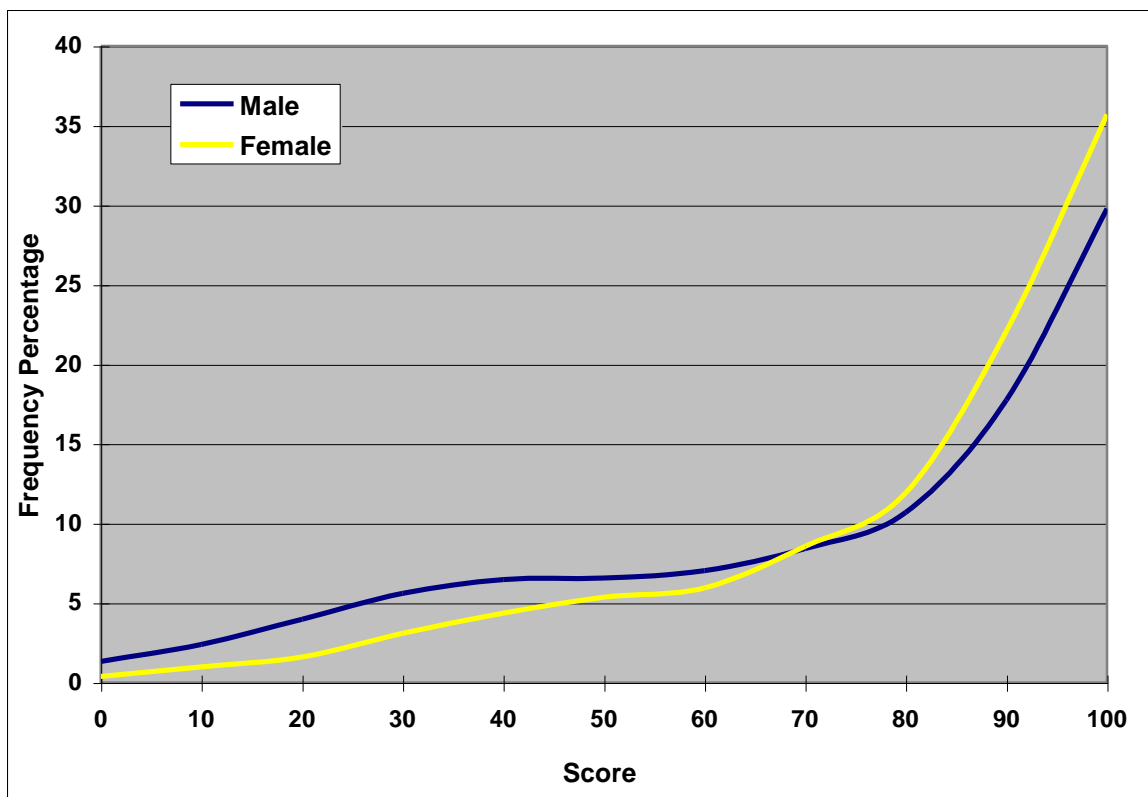


Figure 3.20: All Island achievement in Mathematics by gender

3.7 All Island achievement by location

3.7.1 Sinhala language achievement by location

Table 3.15: Summary of the Island wide achievement by location - Sinhala language

Location	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Rural	74.958	22.5230	.0541	-1.185	550.70	.000
Urban	77.661	21.8159	.0994	-1.370		
Island wide	75.546	22.3987	.0476	-1.222		

Although there is a difference in achievement in Sinhala language between rural and urban students, it is not very high compared to the All Island performance. Even though there is a difference in mean scores, there is not much difference in the SD. Both rural and urban achievements are representative of the All Island performance.

Similar achievement patterns are also indicated by the negatively skewed mark distributions, displayed for both rural and urban students (Figure 3.21)

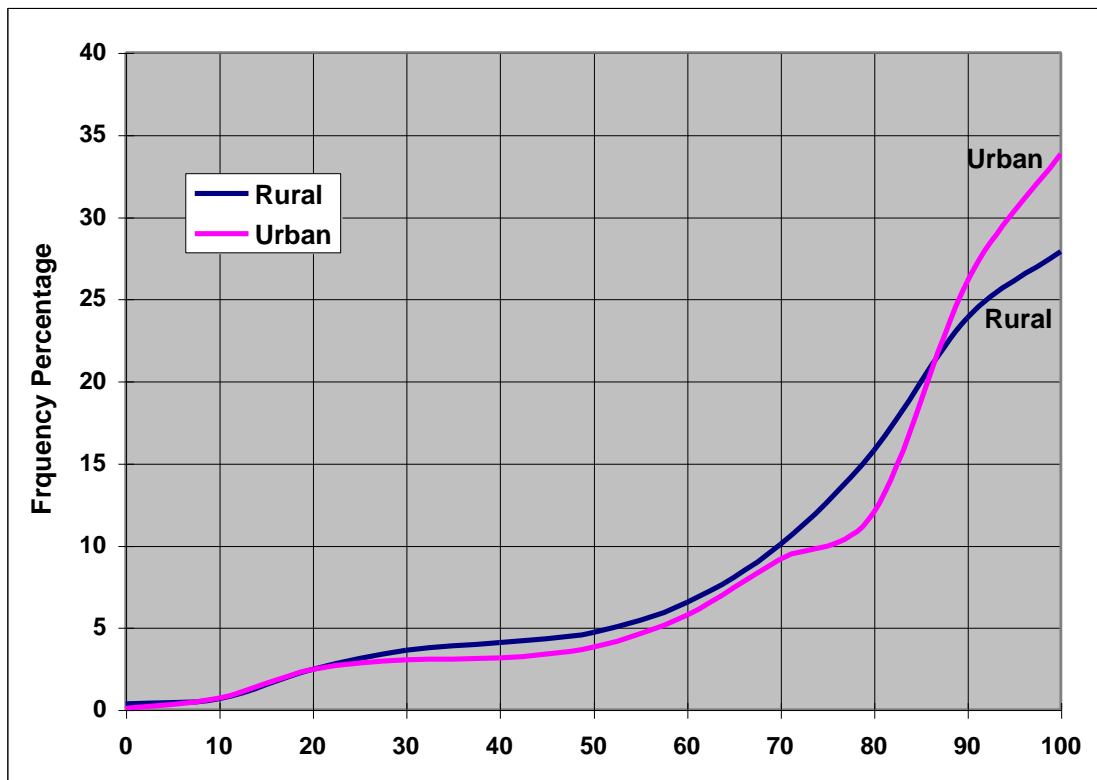


Figure 3.21: All Island achievement in Sinhala language by location - 2009

3.7.2 Tamil language achievement by location

Table 3.16: Summary of the Island wide achievement by location - Tamil language

Location	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Rural	61.370	26.7121	.1057	-.439	1.962	.000
Urban	71.770	23.3698	.1888	-1.000		
Island wide	63.382	26.4201	.0939	-.538		

There is high variation between urban and rural students' achievement with respect to the Tamil language. There is a difference in mean as well as in the SD between rural and urban student achievement in Tamil language. These differences are very high in each statistic. Island wide representations of both statistics are representative of the rural than the urban values. Island wide SD is more closer to the rural students' SD value. Compared to the urban, rural students' Tamil language achievement variation is higher.

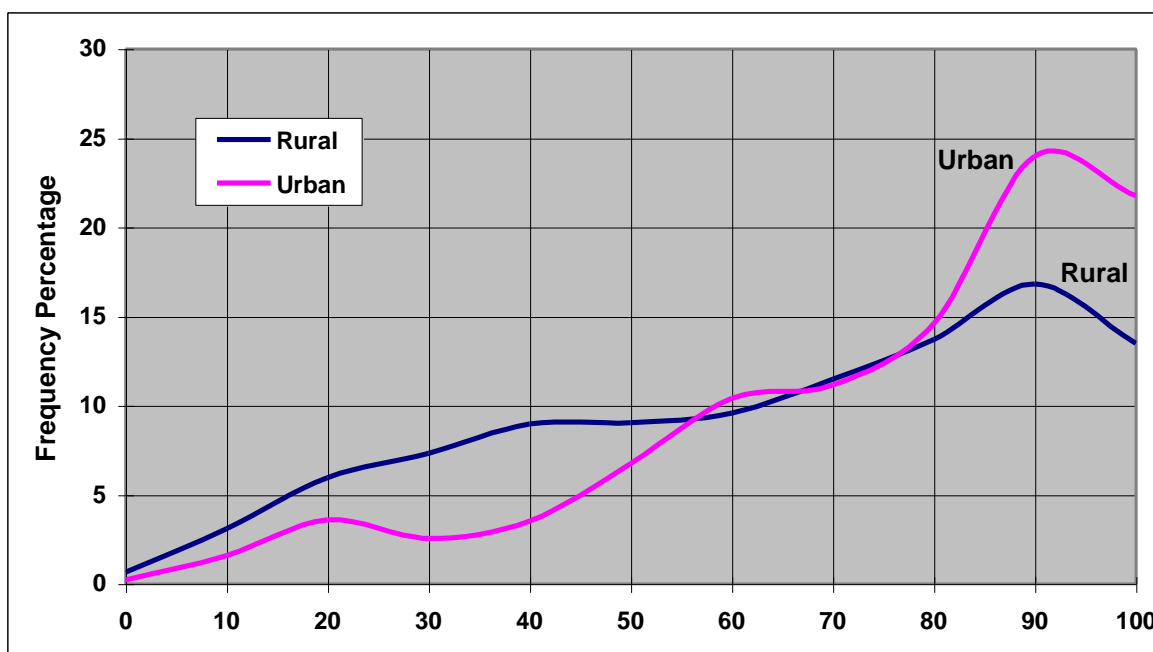


Figure 3.22: All Island achievement in Tamil language by location - 2009

There is a higher number of high achievers in the urban schools. Achievement of the Tamil language by location indicates negatively skewed distributions. The skewness of the urban schools display higher value than the rural schools. This indicates, that a higher percentage of urban students' performance lies above the mean value in urban schools.

3.7.3 English language achievement by location

Table 3.17: Summary of the Island wide achievement by location - English language

Location	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Rural	53.2332	22.85767	.04690	.027	1.566	.000
Urban	65.8897	21.86437	.08669	-.656		
Island wide	55.9063	23.23308	.04234	-.102		

Variations in achievement between urban and rural students indicate similar patterns. Although there is a very high mean difference between rural and urban students, SD of these two groups do not have such differences. Island wide SD is higher than the two SD's of the marks distribution. Displaying similar values between rural and urban students indicate, differences are similar among the same location group.

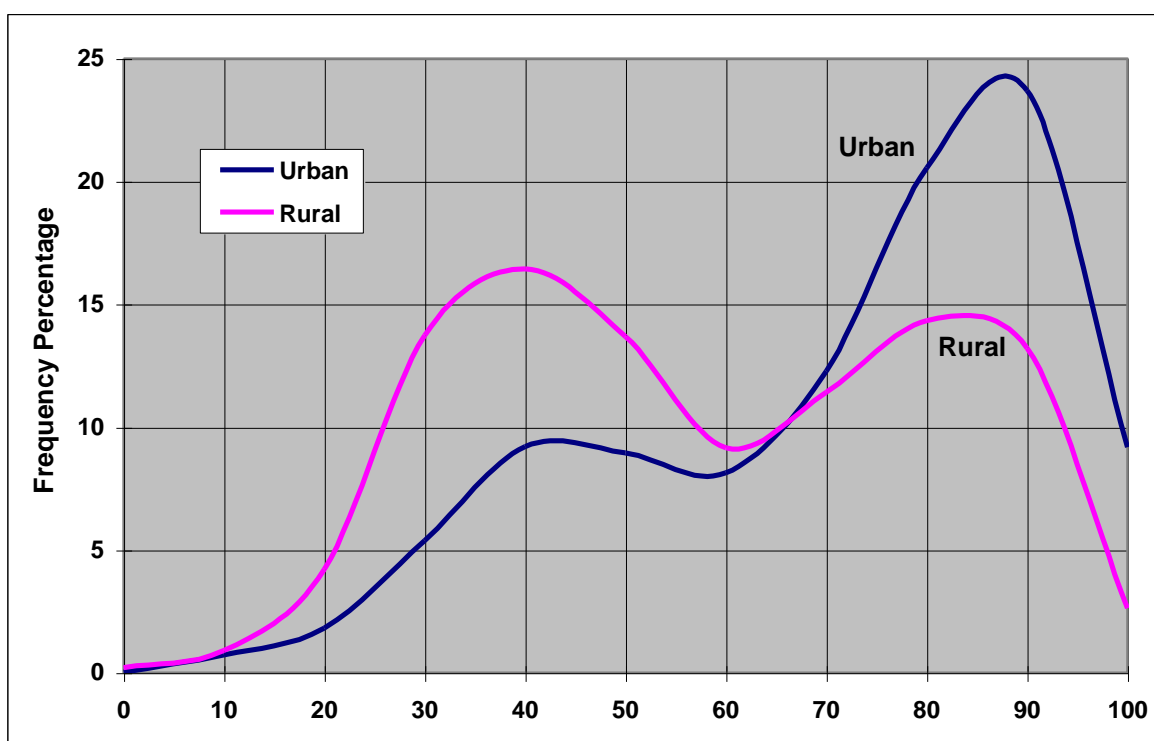


Figure 3.23: All Island achievement in English language by location - 2009

There are more low achievers among the rural students, displaying a positively skewed distribution of scores. On the other hand, both the Island wide and the urban students' achievement in English language display negatively skewed mark distributions. Thus, the urban students' achievement has effectively contributed to make the Island wide value negatively skewed (Figure 3.23).

3.7.4 Mathematics achievement by location

Table 3.18: Summary of the Island wide achievement by location - Mathematics

Location	Mean	Std. Deviation	Std. Error of Mean	Skewness	F	Sig.
Rural	71.961	26.0226	.0534	-.950	2.585	.000
Urban	77.757	23.6418	.0937	-1.393		
Total	73.184	25.6480	.0467	-1.033		

There is a mean difference as well as SD differences between rural and urban students' achievement in Mathematics. Island wide SD is more closer to the urban student SD value. Compared to the urban students' variation in Mathematics achievement, rural students' variation in Mathematics achievement is higher.

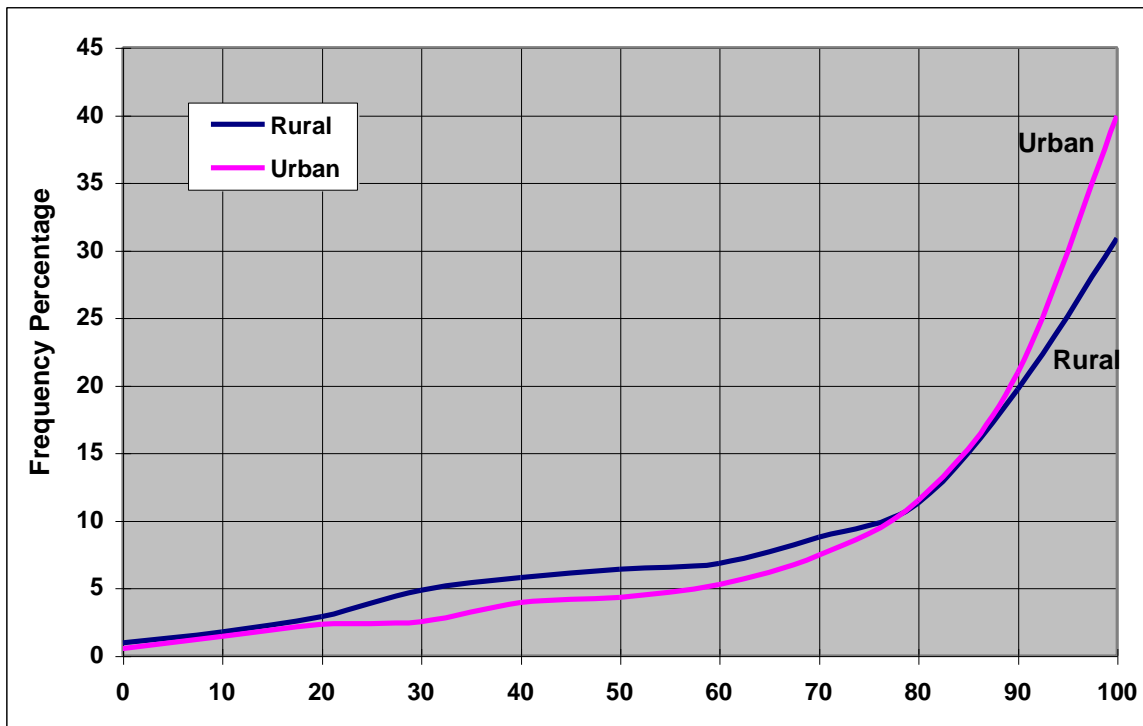


Figure 3.24: All Island achievement in Mathematics by location - 2009

There is a higher percentage of high achievers among the urban than the rural students. This is displayed through a highly negatively skewed distribution for urban students' achievement in Mathematics and a less negatively skewed value for rural student's achievement. Thus the urban students' achievement has effectively contributed to the Island wide negative value.

3.7.5 Summary of achievement patterns related to medium of instruction, school type, gender and location.

According to the medium of instruction, student achievement in English language is higher in the Sinhala medium schools than in the Tamil medium schools. This same pattern could be observed in student achievement in Mathematics as well.

Student achievement in all subjects, except in Tamil was worse in Type 2 schools, followed by 1C schools. However, achievement in Tamil was worse in type 3 schools. Girls' performance was better than boys in all four subjects.

Location wise, urban schools performed well in all four subjects. However, the pattern observed in the variation of marks was quite similar. On the other hand, in the Tamil language performance and in the English language performance, greater variation among student achievement patterns could be observed.

3.8 Overall performance in the four subjects

3.8.1.1 All Island performance in Sinhala language

Table 3.19: All Island Sinhala language marks representation according to the class interval

Class Interval	Frequency	Percent	Cumulative Percent
0 - 9	54	.6	.6
10 - 19	139	1.7	2.3
20 - 29	269	3.2	5.5
30 - 39	267	3.2	8.7
40 - 49	329	3.9	12.6
50 - 59	503	6.0	18.6
60 - 69	730	8.7	27.3
70 - 79	1121	13.3	40.6
80 - 89	1841	21.9	62.5
90 - 100	3148	37.5	100.0
Total	8401	100.0	

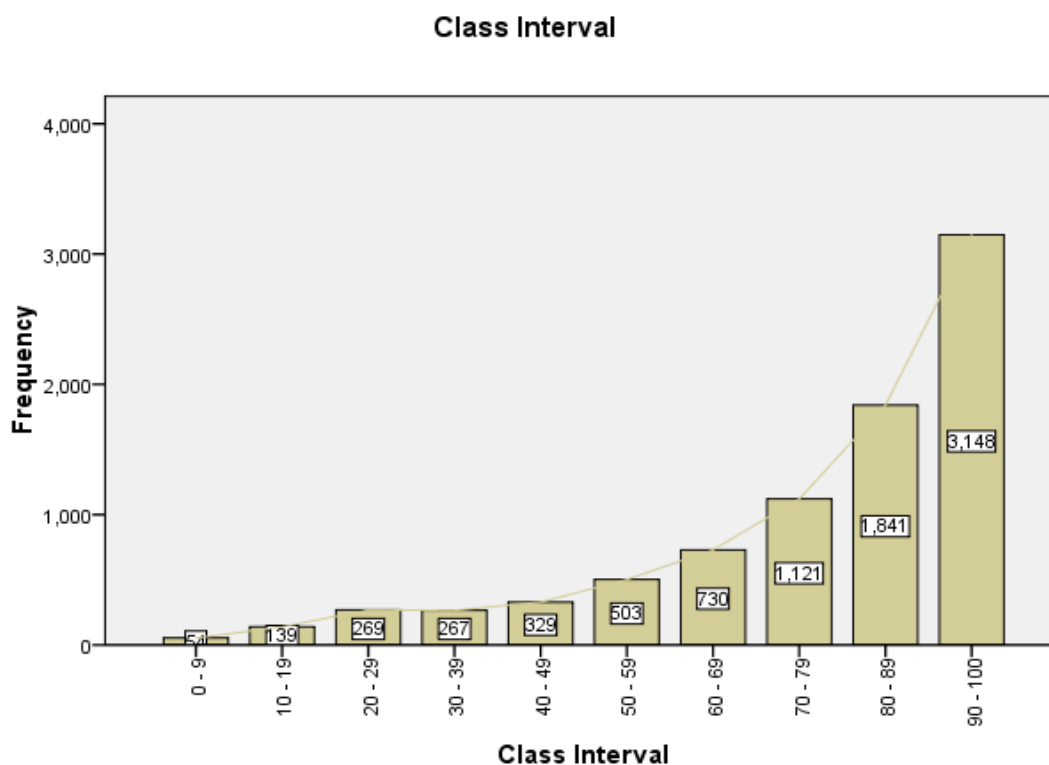


Figure 3.25: Column chart representation for Class Interval - Sinhala language

The All Island achievement in Sinhala language is very good as shown by Table 3.19 and Figure 3.25.

While more than 50% has scored above 80%, the majority of the students fall within the 90-100 mark range, that is 21.9%

3.8.1.2 Provincial wise performance in Sinhala language

In the previous studies, mastery level was considered as 80%. Since this level was considered to be too high, in the present study, 50% was considered as the threshold level. Students' performance in the three subjects will be analysed in relation to the percentage achieving 50 marks or less, in order to obtain an over all view of achievement of learning outcomes in the three subjects.

**Table 3.20 : Representation of students scoring below 50 and 50 or above
(Sinhala language)**

Province	Students Marks less than 50	(%)	Students Marks greater than or equal to 50	(%)	Total
Central	101	13.08	671	86.92	772
Eastern	37	14.57	217	85.43	254
North Central	165	14.15	1001	85.85	1166
North Western	123	10.29	1072	89.71	1195
Northern	15	40.54	22	59.46	37
Sabaragamuwa	142	11.67	1075	88.33	1217
Southern	171	13.14	1130	86.86	1301
Uva	156	15.43	855	84.57	1011
Western	148	10.22	1300	89.78	1448

Except in the Northern province, in all the other provinces students' achievement in the Sinhala language is very good. As Table 3.20 and Figure 3.26 indicate, more than 80% of students, in each province except the Northern, has achieved more than 50% in the Sinhala language paper. This achievement indicates that learning outcomes for the Sinhala language have been achieved.

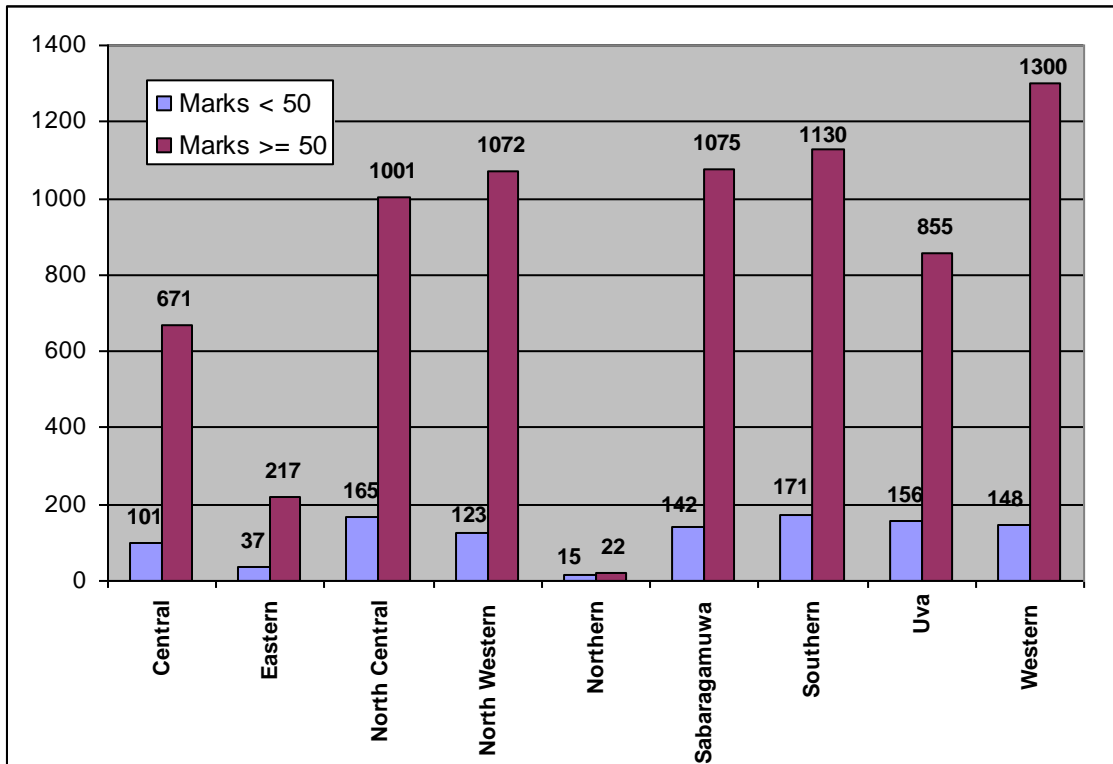


Figure 3.26: Student marks >=50 or <50 in Sinhala language

3.8.2.1 All Island performance in Tamil language

Table 3.21: All Island Tamil language marks representation according to the class interval

	Frequency	Percent	Cumulative Percent
0 - 9	70	2.2	2.2
10 - 19	144	4.5	6.7
20 - 29	192	6.0	12.7
30 - 39	240	7.5	20.1
40 - 49	252	7.9	28.0
50 - 59	275	8.6	36.6
60 - 69	334	10.4	47.0
70 - 79	438	13.6	60.6
80 - 89	566	17.6	78.2
90 - 100	698	21.8	100.0
Total	3209	100.0	

The All Island achievement in Tamil language is good as shown by Table 3.21 and Figure 3.27.

While about 39% has scored above 80%, the majority of the students fall within the 90-100 mark range, that is 21.8%.

It is interesting to note that in both Sinhala and Tamil languages, the percentage of very high achievers are the same. However, compared to Sinhala as a First language, in Tamil, the number of students who have scored above 50 % is less. This means that the percentage of low achievers is also high, indicating more heterogeneity among Tamil medium students.

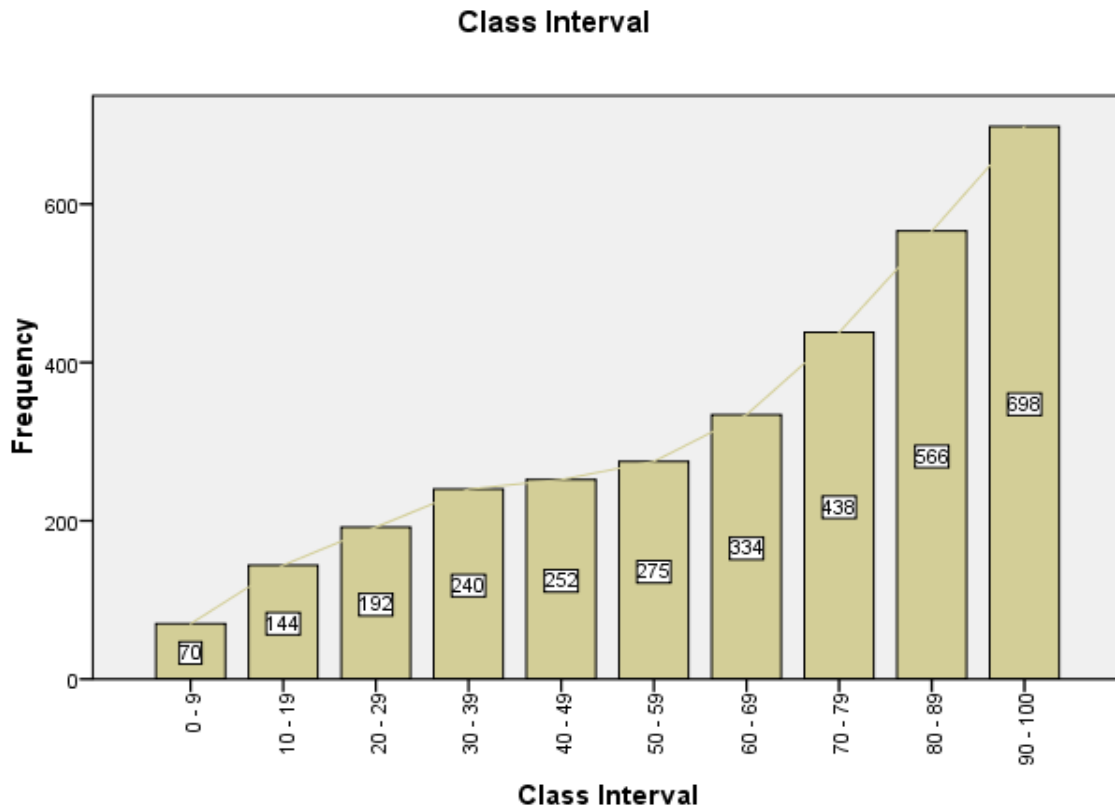


Figure 3.27: Column chart representation for Class Intervals -Tamil language

3.8.2.2 Provincial wise performance in Tamil language

Table 3.22: Representation of students scoring below 50 and 50 or above
(Tamil language)

Province	Students Marks less than 50	(%)	Students Marks greater than or equal to 50	(%)	Total
Central	164	35.40	299	64.60	463
Eastern	321	29.00	787	71.00	1108
North Central	57	38.50	91	61.50	148
North Western	57	28.90	140	71.10	197
Northern	116	15.10	650	84.90	766
Sabaragamuwa	36	35.60	65	64.40	101
Southern	18	30.00	42	70.00	60
Uva	92	42.60	124	57.40	216
Western	37	24.70	113	75.30	150

When the performances in the provinces are considered, as Table 3.22 indicates, only Northern province records above 80% of students who have scored marks greater than or equal to 50. Uva records the lowest percentage of students who has reached the threshold level.

Therefore, the data presented in Table 3.22 and Figure 3.28 confirms that there is a greater variation in student achievement in Tamil language and further the achievement of learning outcomes is lower than for the Sinhala language. Therefore, there is a need to investigate further the reasons for low achievement in Tamil.

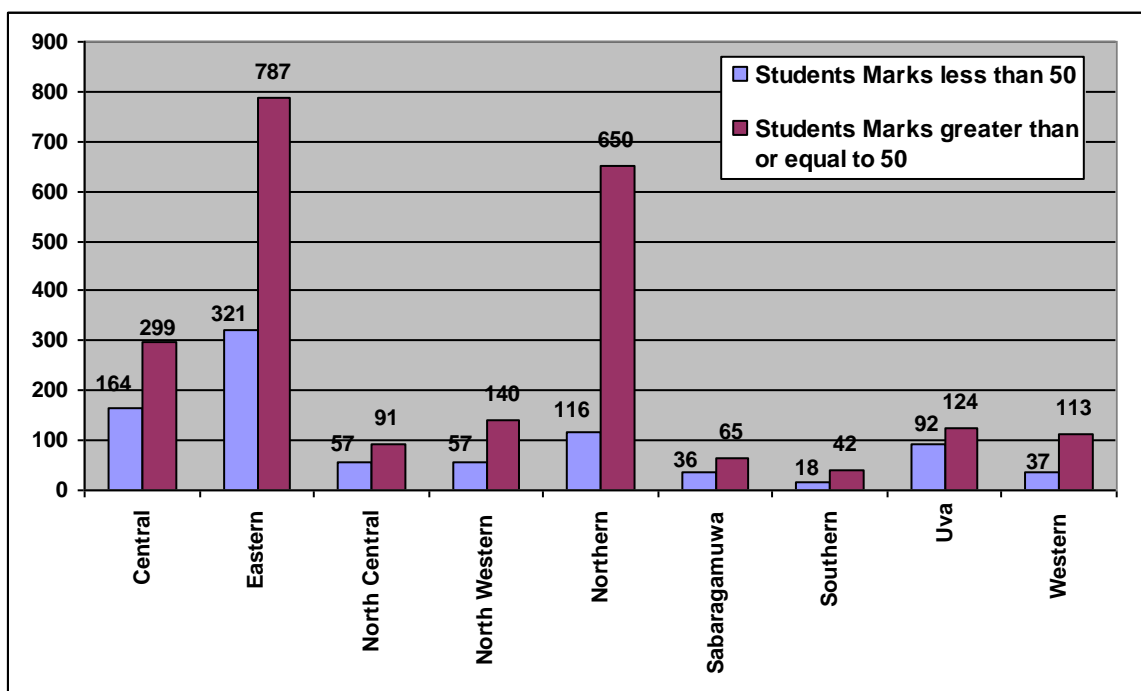


Figure 3.28: Student marks ≥ 50 or < 50 in Tamil language

3.8.3.1 All Island performance in English language

Table 3.23: All Island English language marks according to the class intervals

	Frequency	Percent	Cumulative Percent
0 - 9	107	.9	.9
10 - 19	416	3.6	4.5
20 - 29	1409	12.1	16.6
30 - 39	1397	12.0	28.6
40 - 49	1507	13.0	41.6
50 - 59	1273	11.0	52.6
60 - 69	1351	11.6	64.2
70 - 79	1855	16.0	80.2
80 - 89	1515	13.0	93.2
90 - 100	791	6.8	100.0
Total	11621	100.0	

The highest percentage of students falls in to the 70-79 mark range. It is also interesting to note that an equal percentage of students has scored in the 40-49 as well as the 80-89 mark range.

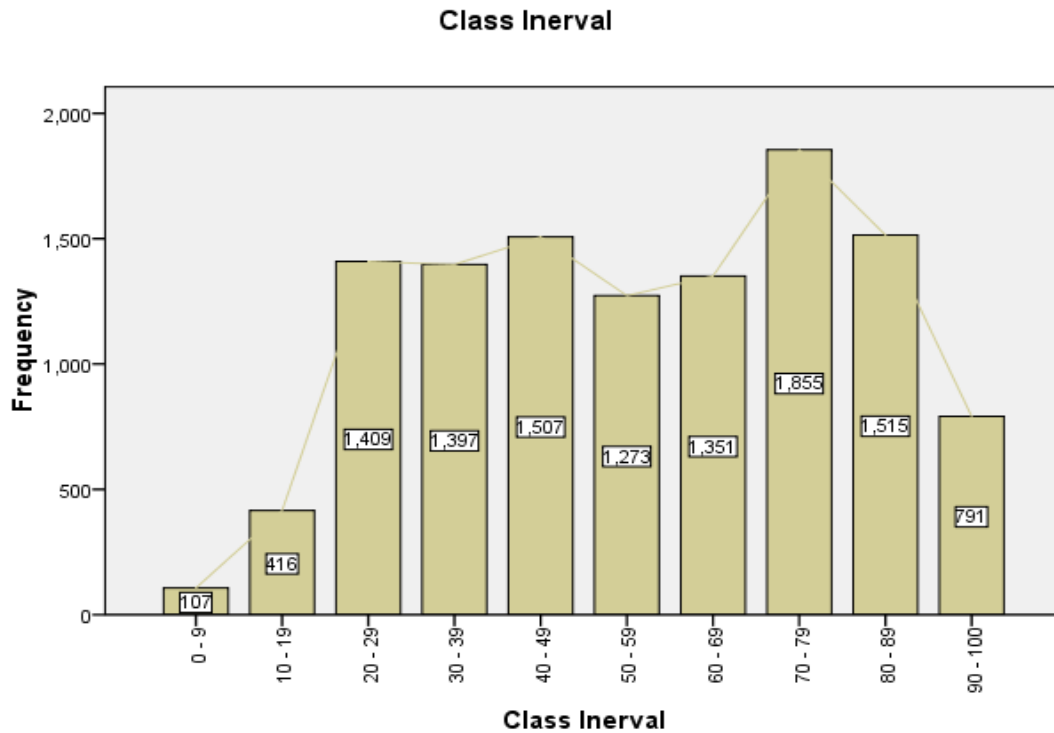


Figure 3.29: Column chart representation for Class Intervals- English language

This dispersion of marks was also evident in the bimodal nature of the frequency polygon observed in Figure 3.29.

3.8.3.2 Provincial wise performance in English language

**Table 3.24 : Representation of students scoring below 50 and 50 or above
(English language)**

Province	Students Marks less than 50	(%)	Students Marks greater than or equal to 50	(%)	Total
Central	541	44.09	686	55.91	1227
Eastern	789	58.10	569	41.90	1358
North Central	641	49.42	656	50.58	1297
North Western	485	35.20	893	64.80	1378
Northern	372	45.81	440	54.19	812
Sabaragamuwa	483	35.99	859	64.01	1342
Southern	507	37.61	841	62.39	1348
Uva	600	48.15	646	51.85	1246
Western	418	25.91	1195	74.09	1613
Total	4836	41.61	6785	58.39	11621

When provincial performances are considered, as Table 3.24 indicates only Western province records more than 70% of students who have achieved the threshold level. On the other hand, the Eastern province records the lowest percentage of students who have scored fifty or above.

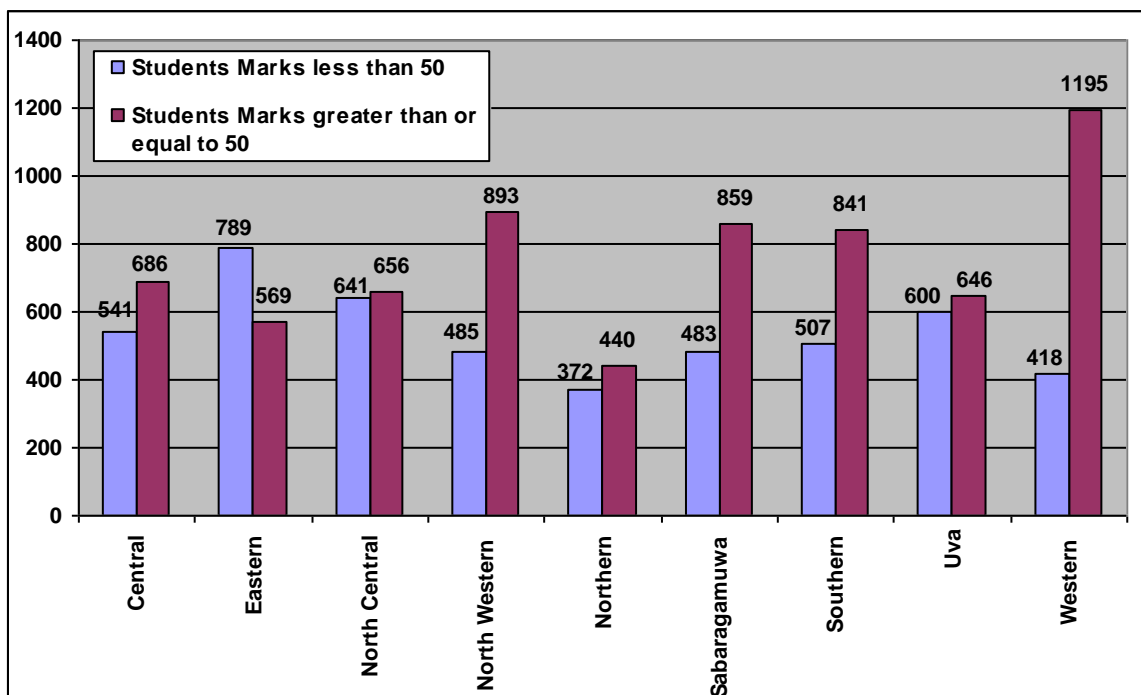


Figure 3.30: Student marks ≥ 50 or < 50 in English language

3.8.4.1 All Island performance in Mathematics

According to the performance in Mathematics, (Table 3.25) majority of the students fall into the highest mark range of 90 -100.

Table 3.25: All Island Mathematics marks according to class interval

Interval	Frequency	Percentage	Cumulative Percent
0 - 9	206	1.8	1.8
10 - 19	256	2.2	4.0
20 - 29	449	3.8	7.8
30 - 39	576	4.9	12.7
40 - 49	634	5.4	18.2
50 - 59	712	6.1	24.3
60 - 69	917	7.9	32.1
70 - 79	1192	10.2	42.3
80 - 89	1903	16.3	58.6
90 - 100	4829	41.4	100.0
Total	11674	100.0	

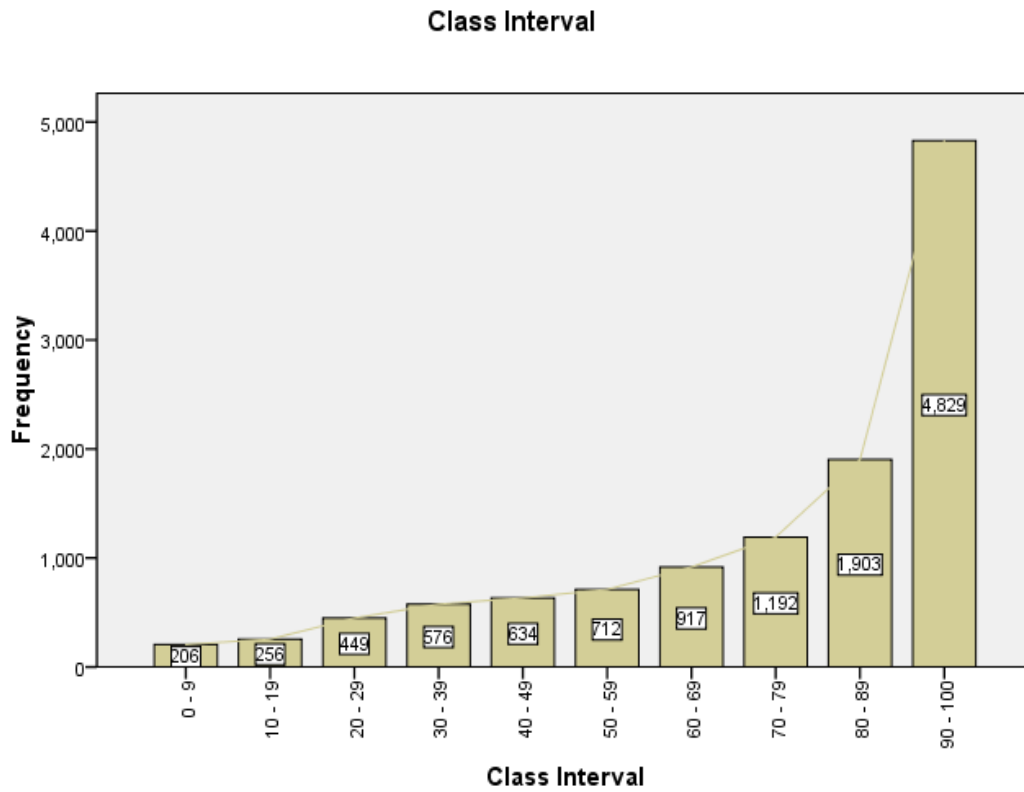


Figure 3.31: Column chart representation for Class Intervals- Mathematics

As the Figure 3.31 also indicates, the number of low achievers in Mathematics is very low.

3.8.4.2 Provincial wise performance in Mathematics

**Table 3.26: Representation of students scoring below 50 and 50 or above
(Mathematics)**

Province	Students Marks less than 50	(%)	Students Marks greater than or equal to 50	(%)	Total
Central	287	23.24	948	76.76	1235
Eastern	407	29.84	957	70.16	1364
North Central	239	18.24	1071	81.76	1310
North Western	190	13.63	1204	86.37	1394
Northern	165	20.55	638	79.45	803
Sabaragamuwa	177	12.94	1191	87.06	1368
Southern	202	14.85	1158	85.15	1360
Uva	238	19.18	1003	80.82	1241
Western	216	13.51	1383	86.49	1599
Total	2121	18.17	9553	81.83	11674

As Table 3.26 displays, in most of the provinces the number of students scoring fifty or above is over 80%. Even in the other three provinces over 70% has scored fifty or above. This indicates substantial achievement of learning outcomes Island wide and homogeneity of achievement among provinces.

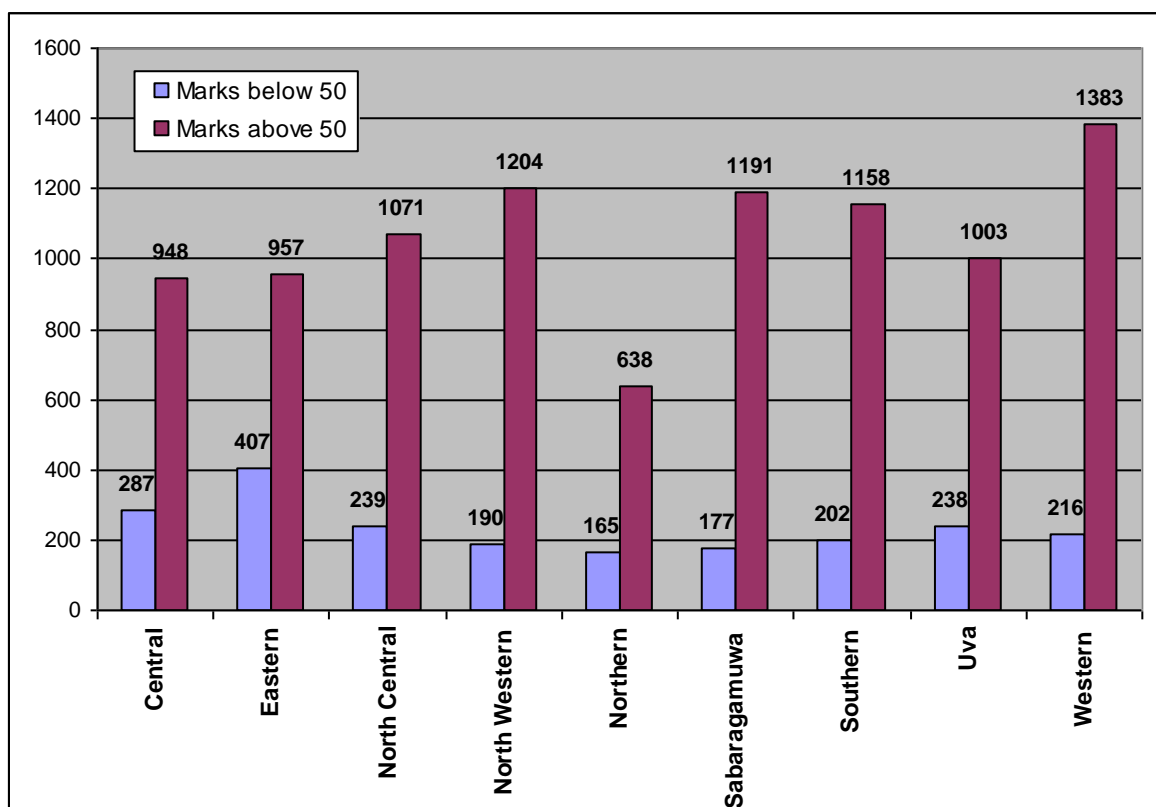


Figure 3.32: Student marks ≥ 50 or < 50 in Mathematics

3.9 Summary

Achievement patterns observed in relation to the three subjects assessed, revealed that there were more variations among Tamil medium schools than in Sinhala medium schools with respect to All Island as well as provincial wise findings.

In English language achievement as well, there are disparities among provinces as well as All Island.

On the other hand, achievement in relation to Mathematics indicates less variation suggesting more equity in relation to 'Education for all'.