Patterns in Achievement – English Language 2012

5.1 Introduction

The English language curriculum was also changed to a competency based model in 2007. However, no studies have so far being conducted to monitor its effectiveness. Therefore, the analysis of the National Assessment 2012 will be a benchmark for further studies.

This chapter presents the patterns in achievement of the students in English Language.

5.2 Patterns of achievement at National Level

National Level student achievement would be discussed in relation to student performance pertaining to English Language.





Fig. 5.1: All island achievement in English 2012 - dispersion of marks

The frequency polygon shown in Fig. 5.1 outlines the total picture of the distribution of marks of grade 08 students in English language.

Fig. 5.1 depicts a positively skewed distribution of marks. As can be seen there is a higher percentage of students with low marks and a low percentage of students with high marks. Hence, the curve has a high positive skewness value (0.836).



Fig. 5.2 illustrates student achievement patterns further.

Fig. 5.2: Box plot chart representing all island English achievement

According to Fig. 5.2, 50% of the students have scored 32 percent or above. On the other hand the mean value is 40. This difference is due to high percentage of low achievers.

The dispersion of marks indicated by the graph in Fig. 5.1, can be further elaborated using the cumulative percentages.

Marks Interval	Student Percentage	cumulative Percentage
90 to 100	3.68	100.00
80 to 89	6.36	96.32
70 to 79	6.30	89.96
60 to 69	6.30	83.66
50 to 59	6.97	77.37
40 to 49	9.48	70.39
30 to 39	16.95	60.91
20 to 29	27.76	43.96
10 to 19	15.14	16.20
0 to 9	1.06	1.06

Table 5.1: All island achievement in English 2012 - cumulative percentages

All island English marks corresponding to the class intervals indicate that approximately 61% of students score less than the pass mark. Further, the highest percentage of students' marks are within the range 20-29. Thus it could be concluded that the island wide achievement of learning outcomes for English language is not satisfactory.

However, according to Table 5.1 there are also 16.34% of students scoring above 70%. These differences emphasize the disparity that prevails in achievement of learning outcomes, even though the overall achievement is unsatisfactory.

Summary of national level achievement

- National level mean and median values are 40% and 32% respectively.
- There is wide disparity in achievement pertaining to English language and the overall achievement in English language is not satisfactory.

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Provincial wise student achievement will be discussed next.

5.3 Provincial wise student achievement

Province Name	Mean	Rank	Standard Deviation	Standard Error of Mean	Percentile (p25)=Q1	Median (p50)=Q2	Percentile (p75)=Q3	Skewness
Western	45.25	1	23.062	0.226	26	40	64	0.476
Central	44.42	2	25.323	0.302	22	36	66	0.571
Southern	42.48	3	23.263	0.243	24	36	60	0.619
Sabaragamuwa	42.45	4	25.36	0.279	22	32	60	0.794
North Western	41.37	5	23.941	0.275	22	34	56	0.848
Uva	38.41	6	23.894	0.314	20	30	52	0.948
Northern	36.08	7	21.783	0.31	20	28	46	1.055
North Central	32.55	8	17.475	0.202	20	28	40	1.232
Eastern	31.65	9	18.964	0.241	20	26	38	1.314
All Island	40.04		23.301	0.09	22	32	56	0.836

 Table 5.2: Provincial achievement in English 2012 - Summary statistics

As Table 5.2 indicates based on Provincial wise mean achievements, Western Province ranks first. Central Province is ranked second with only a slightly lower mean value.

Achievement wise the provinces fall into three categories. Western, Central, Southern, North Western and Sabaragamuwa with mean scores above the national mean, fall into the higher category. Uva, North, North Central and Eastern Provinces which are below the national mean fall into the lower category. However, among the lower category there is much variation in achievement than in the higher category. There is a seven point difference between Uva and Eastern Provinces mean scores. Therefore, the lower group can be categorized once again to two groups with Uva and Northern Province falling into the middle group, while North Central and Eastern falling into the lowest group.

Very high difference in mean values (13.6) can be seen between the highest scoring Western and lowest scoring Eastern Provinces.

These disparities are further highlighted through the bar chart given in Fig. 5.3





Fig.5.3: Bar chart to represent mean among the provinces- English language

Fig. 5.3 indicates that in provinces like the Eastern, North Central, North and Uva the mean values are below the all island mean value.

Disparity in achievement among Provinces

Although, there are five provinces that have scored above the all island mean, their median values differ. According to Table 5.2, in the Western Province 50% of the students have scored 40 or above marks. However, in all the other provinces 50% of the students have scored less than 40 marks and in the Eastern Province as low as 26. Therefore, it could be concluded that achievement levels in most of the provinces is very low. Further, there is disparity in achievement among provinces, especially between Western Province and the other provinces.

According to Table 5.2, all the standard deviation values lie between 17 to 25 ranges. As discussed, the mean difference between Western and Central Provinces is very little. However, the deviation of marks from the mean in the Central Province is higher compared to the Western Province. Therefore, it could be claimed that the achievement differences among the students in the Central Province is higher than in the Western

Province. The highest SD is seen in the Sabaragamuwa Province. Hence, student diversity is highest in the Sabaragamuwa Province.

North Central and Eastern Provinces obtained lower standard deviations compared to other provinces and below the national SD. Therefore, in these provinces deviation of student achievement from the mean value is less compared to other provinces. Lower SD value indicates homogeneous performance among these provinces.

However, these provinces have obtained lower mean values than the other provinces. Therefore, the homogeneity is among the low achievers.

Taken collectively, SD values are very high for English language achievement for all the provinces. All island SD (23.301) value is more representative of seven provinces where SD ranges from 21-25.

In all the provinces, skewness values are positive and at the same time rather high. Western Province skewness value being 0.065 is lower than the values in other provinces. This means that compared to other provinces there are higher number of high achievers. Eastern and Northern Provinces the skewness is higher due to higher number of student marks falling among low score.

Western Province first Quartile (Q1) mark 26 indicates that 25% of students from the Western Province Sample are below this mark. On the other hand, Q3 denotes that 75% of the students from the Western Province sample has scored below 64%. The first Quartile in all provinces lie between 20 to 26 and the all island value is 22 which shows that there are some similarities in this mark range among provinces. Further, these performances are similar to all island performance. However, the third Quartile ranges from 40 to 64 marks indicating greater differences among provinces.

These differences are further illustrated through the box plot (Fig. 5.4)



Fig.5.4: Box plot chart representing all island English achievement

There is high variation in achievement among and within provinces. In the Western Province 50% of students have scored 40% or above. Since the all island mean value is 40%, this means that 50% of the students in the Western Province have scored the all island mean value.

On the other hand, in the Central Province even the mark range from the lowest to the highest is more than the Western Province. Yet, its median is lower than the all island mean value. In the Eastern and Northern Provinces even the p75 is lower than the all island mean value.

This box plot confirms, as already discussed that there is not much variation in the lower level marks. However, above the all island mean value, there is greater variation.

A significant feature of the achievement in English language is that in the three provinces with the lowest achievement levels there are outliers. These are the students who have scored very high marks. The most number of outliers are found in the lowest



achieving province, that is the Eastern Province. Not only are there very high achievers who have scored above the normal range, there are three students who have scored exceptionally high, even above the high achievers.

Therefore, it could be concluded that there is variation among as well as within the provinces with respect to achievement in English.

	Gender of the student								
		Fen	nale		Male				
Province	Marks lo	ess than	Marks e	equal or	Marks l	ess than	Marks equal or		
	5	0	abov	re 50	5	0	abov	re 50	
	No. of students	%	No. of students	%	No. of students	%	No. of students	%	
Central	520	66.7%	260	33.3%	472	81.2%	109	18.8%	
Eastern	571	89.5%	67	10.5%	596	84.4%	110	15.6%	
North	546	86.7%	84	13.3%	562	85.0%	99	15.0%	
North Western	570	75.8%	182	24.2%	552	80.6%	133	19.4%	
Northern Central	620	88.6%	80	11.4%	680	90.2%	74	9.8%	
Sabaragamuwa	609	72.9%	226	27.1%	587	79.6%	150	20.4%	
Southern	512	63.0%	301	37.0%	544	78.8%	146	21.2%	
Uva	548	75.6%	177	24.4%	550	86.1%	89	13.9%	
Western	441	56.0%	347	44.0%	536	76.2%	167	23.8%	
All Island	4937	74.1%	1724	25.9%	5079	82.5%	1077	17.5%	

Table 5.3: Representation of students scoring below 50 and 50 or above - English

Summary

• Achievement wise the provinces fall into two categories.

Category 1 – Western, Central, Southern, North Western and Sabaragamuwa with mean scores above the national mean (40.04)

Category 2 -- Uva, North, North Central and Eastern which are below the National mean

- Disparity of marks within the lower group is higher than among the higher group.
- In the three provinces with the lowest achievement levels Eastern, North Central and the Northern there are a few outliers.



5.4 Achievement levels by type of school

School Type	Mean	Standard Deviation	Standard Error of Mean	Skewness	Percentile (p25)	Median (p50)	Percentile (p75)
1AB	51.68	24.445	0.130	0.168	30	49.97	74
1C	27.76	13.012	0.091	1.418	20	24.00	34
Type 2	25.41	11.475	0.110	1.517	18	24.00	30
All Island	40.04	23.301	0.090	0.836	22	32.00	56

 Table 5.4:
 English marks achievement according to the school type

As Table 5.4 indicates, there is a considerable gap between the mean scores of 1AB schools and Type 1C and Type 2 schools. While the mean difference between 1AB and 1C is 23.92, the difference between 1AB and Type 2 is 25.27. These differences are very high between school types. 1AB students' performance appears to very strongly affect to increase the all island mathematics mean statistics. 1AB schools and all island mean difference is closer to 10 marks, whereas 1C Type schools' mean value is 12.98 marks below that of the all island mean value. Type 2 performance is even worse, but more closer to Type 1C. Therefore, performance of 1C and Type 2 schools needs to be improved.

The difference in mean scores is graphically shown in Fig. 5.5





The gap between the school types is further highlighted when the median scores are considered. The median value of the 1AB schools is considerably higher than the 1C and Type 2 Schools. This reveals that 50% of student achievement is above or equal to 49.97 mark value in the 1AB schools. On the other hand, in 1C and Type 2 schools 50% are scoring below the pass marks. In fact, in 1AB schools even the bottom 25% is scoring more than the 50% in other two school types. The disparity is highest when the P75 is considered. In 1AB schools p75 is more than twice that of the 1C and Type 2 schools.

Variation among student achievement

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Although achievement is higher in 1AB schools, variation among student achievements also can be seen. As shown in Table 5.4 the standard deviation of the 1AB schools is quite high and even above the all island SD. The SD of the 1AB schools had significantly contributed to the All Island standard deviation. In all three school types, the SDs are more than half of the mean score. Therefore, there is high variation within all school types. However, when variation among school types is considered, there is little difference in variation with respect to 1C and Type 2 schools.



Fig. 5.6: Dispersion of marks by school type – English language

Disparity in marks

All the curves except for 1AB Schools are highly positively skewed indicating that there are large number of students scoring low marks. In these curves the peak corresponds to the class interval 20-29. On the other hand, in the case of 1AB schools, two high peaks can be observed. That is between 20-29 and 80- 89. The all island curve lies between the 1C and 1AB curves, denoting that its positive skeweness is higher than that of the 1AB curve. The high skewness of the 1C and Type 2 schools has directly affected the skeweness of the all island curve.

The skeweness of the curves can be further explained through the cumulative percentages indicated in Table 5.5.

Class	1AB		1C		Type 2	
Intorval	Student	Cumulative	Student	Cumulative	Student	Cumulative
inter var	(%)	(%)	(%)	(%)	(%)	(%)
90 to 100	6.90	100.00	0.07	100.00	0.04	100.00
80 to 89	11.80	93.10	0.28	99.93	0.25	99.96
70 to 79	11.00	81.30	1.20	99.65	0.60	99.71
60 to 69	10.40	70.30	2.22	98.45	0.71	99.11
50 to 59	9.90	59.90	3.87	96.23	3.20	98.40
40 to 49	11.83	50.00	7.34	92.36	5.90	95.20
30 to 39	15.00	38.17	20.24	85.02	17.10	89.30
20 to 29	15.93	23.17	40.14	64.78	42.80	72.20
10 to 19	6.74	7.24	23.34	24.64	26.90	29.40
0 to 9	0.50	0.50	1.30	1.30	2.50	2.50

Table 5.5: Cumulative student percentages according to the school type- English

Fig. 5.6 displayed that in all schools the curves peaked at the 20-29 class interval. However, the Table 5.5, indicates that the percentage scores that fall within this class interval varies among the school types. In the 1AB schools only 15.93% of students' scores fall within this class interval. On the other hand, in 1C and Type 2 schools 40.14% and 42.80% of the students scores fall within this class interval. In addition, in 1AB schools 11.80% of students' scores also fall within the 80-89 class interval. Further, in 1C and Type 2 schools 85.02 cumulative percentages and 89.30 cumulative percentage of students' scores are below 40%. On the other hand, in 1 AB schools, failure

percentage is only 38.17% and there are also 22.80% of high achievers scoring above 70%. Therefore, it could be claimed that compared to 1AB schools, the performance of 1C and Type 2 schools' performance is low.



Fig. 5.7: English marks according to the school types using Box plot and whiksper plot

Box plot chart graphically shows students performance in the three school types. The students' achievement in the 1AB schools is evenly spread over 50 Median values. While 50% of the students have scored less than or equal to 50 mark points the other 50% of the students have scored 50 marks or higher. It clearly exhibits that all island mean statistics are highly affected by the low achievement of the 1C and Type 2 schools. All island mean value is not representative either of 1AB mean or the other two school types. According to this, there would be two separate mean calculations, one for 1AB schools and another for 1C and Type 2 schools.

A very obvious characteristics in 1C and Type 2 schools are the outlier (yellow card zone) and extreme (red card zone) values displayed by some students. Those lie beyond the one and a half box lengths (outlier) and three box lengths (extreme). It is not

possible to analyze the performance of these students with the available data. They should be studied separately.

Summary

- Compared to 1AB schools, the performance of 1C and Type 2 schools' performance is low.
- However, in1C and Type 2 schools there are outlier (yellow card zone) and extreme (red card zone) values displayed by some students

5.5 Achievement levels by gender

Student Gender	Mean	Standard Deviation	Standard Error of Mean	Skewness	Percentile (p25)	Median (p50)	Percentile (p75)
Female	42.98	23.895	0.128	0.680	24	36.00	60
Male	36.86	22.207	0.124	1.027	20	28.00	48
All Island	40.04	23.301	0.090	0.836	22	32.00	56

Table 5.6: English Achievement in summary statistics table

Female students' English mean (42.98) is relatively higher than the male students' English mean (36.86) achievement. All Island student mean also lies above the male students' mean .Female students' English achievement has very highly affected the all island mean to rise.

Male and female students' 25th percentile difference is not relatively higher than the mean difference. All Island 25th percentile is more representative for both groups, because the values are closer. Male students' 50th percentile (28) is lower than the Female percentile (36). Male and Female students' 75th percentile shows higher difference than the difference in the previous percentiles. All island 75th percentile (56) is more closer towards the male students' value, because a higher student percentages of male students are included.

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These differences could also be seen in Fig. 5.8



Fig. 5.8: Bar chart representing mean values according to gender - English

Male students' performance is below that of the female students as well as below the all island mean.



Fig. 5.9 explains further this low performance

Fig. 5.9: Dispersion of marks by gender - English

Fig. 5.9 displays two curves which are both positively skewed. However, as Table 5.6 indicates the male curve has a higher positive value than the female, as well as the all island value.

The female students' achievement in the higher marks intervals, is slightly ahead of the male students. This indicates that the percentage of high achievers are greater among the females.

This pattern is further illustrated through the cumulative percentage Table.

Class Interval	Female (%)	Cumulative Percentage	Male (%)	Cumulative Percentage
90 to 100	4.65	100	2.60	100
80 to 89	7.40	95.35	5.20	97.40
70 to 69	7.42	87.95	5.10	92.20
60 to 69	6.85	80.53	5.70	87.10
50 to 59	7.91	73.68	6.00	81.40
40 to 49	10.44	65.77	8.40	75.40
30 to 39	17.11	55.33	16.80	67.00
20 to 29	25.10	38.22	30.70	50.20
10 to 19	12.50	13.12	18.00	19.50
0 to 9	0.62	0.62	1.50	1.50

 Table 5.7: Gender wise English analysis cumulative table

According to Table 5.7 and Fig. 5.9 it could be concluded that both among females and males, there are a group of low performing students. However, the percentage of low performers among the males is higher than the females. The Female student percentage that falls within the first class interval (0-9) is 0.62. On the other hand, the male student percentage (1.5), is more than double of the Female student percentage. This is a matter of concern with respect to equity. This trend is visible up to the 50th mark point. Thereafter, the performance of both groups declines. The above analysis indicates that among both males and females there is a larger percentage of low achievers. On the other hand, the number of high achievers among both males and females is low.



Fig. 5.10: Box plot and whiksper plot representing gender wise English marks

Box plot for gender wise English achievement graphically shows similarities that have been already discussed. In the female box plot, the first quartile (Q1) starts a little ahead of the Male students' first quartile (Q1) and it spreads higher than the male students' marks range. Male students median also lie below the female students' median. Therefore, the all island mean is not a good representative value for either of the groups.

Male students' box plot indicates a few outliers. This is an exceptional situation and needs further investigation.

Summary

- Female performance is higher than all island and male performance.
- Among both males and females there is a larger percentage of low achievers. On the other hand, the number of high achievers among both males and females is low.



5.6 Achievement levels by medium of instruction

Medium of the Student	Mean	Standard Deviation	Standard Error of Mean	Skewness	Percentile (p25)	Median (p50)	Percentile (p75)
Sinhala	41.50	23.417	0.105	0.751	22	34	58
Tamil	35.82	22.433	0.171	1.131	20	28	44
All Island	40.04	23.301	0.090	0.836	22	32.00	56

 Table 5.8: Achievement level by medium of instruction – English language

There is disparity between the students belonging to the different medium of instruction. While the Sinhala medium students' mean achievement is slightly above the all island mean value, the Tamil medium students' mean achievement is below the national mean.

The diversity in achievement scores among the students taught through the different medium of instruction, is further highlighted through the frequency distribution graphs.



Fig.5.11: Bar chart representing mean values according to medium of instruction – English language

Sinhala medium students' performance is above the all island performance with respect to the median value. While 50% of Sinhala medium students have scored equal or above 34% equal percentage of Tamil medium students' have scored only 28% or above. The disparity discussed using the mean and the median is also visible through the

Tamil and Sinhala medium students' curves peak at the lower mark intervals.

frequency distribution graph. All the curves are positively skewed.

Most of the time when theoretically explained, lower standard deviation reveals lower disparity among student achievement. According to Table 5.8 Sinhala, Tamil and all Island standard deviation show, that they are more than half of the mean value of the respective category. All Island standard deviation is very high. Such a high value could be expected due to the high disparity among students among both mediums.



Fig. 5.12: Dispersion of marks by medium of instruction – English language

According to Fig. 5.12 Sinhala and Tamil medium students' skewness value is positively skewed and greater than one as well. These curves show that higher number of students achievement lie among lower mark ranges. All island value also becomes positive due to this high number of student belonging to lower marks.

Marks Interval	Sinhala	Cumulative Percent	Tamil	Cumulative Percent
90 to 100	4	100	2.7	100
80 to 89	6.7	96	5.2	97.3
70 to 79	6.7	89.3	5	92.1
60 to 69	7	82.6	4.2	87.1
50 to 59	7.4	75.6	5.8	82.9
40 to 49	10.2	68.2	7.4	77.1
30 to 39	17.3	58	15.9	69.7
20 to 29	26.2	40.7	32.3	53.8
10 to 19	13.5	14.5	19.8	21.5
0 to 9	1	1	1.7	1.7

Table 5.9: Medium wise cumulative percentage table – English language



Fig. 5.13: Box plot for medium wise achievement – English language

Box plot for medium wise achievement graphically shows the differences that has been discussed already.

A remarkable feature of this box plot is that even though the Tamil medium achievement is lower than the Sinhala medium students there are students whose marks fall outside the normal range of marks. On the other hand there are no outliers among the Sinhala medium students.

Summary

- There is disparity among students belonging to different medium of instruction.
- Sinhala medium students' mean achievement is closer to the all island mean value.

The Tamil medium students' mean achievement is below the national mean.

• There are outliers in Tamil medium schools who have done exceptionally well.

5.7 Analysis of achievement by competency levels

In constructing the achievement tests, the test items were designed in relation to the competencies and competency levels identified for grade eight. As discussed in chapter 2, the construct assessed in these studies were the competency levels. Based on the competencies and competency levels Table of specification was prepared. In preparing the Table competencies related to oral skills were excluded as they could not be measured through a written test.



Competency	Competency Level	Percentage
	4.4 Uses English words in the proper contexts	14.60%
Vocabulary	4.5 uses the dictionary effectively	13.40%
v ocabular y	4.6 uses visual clues Contextual clues to derive the meaning of words	12.50%
Pooding	5.4. Transfers information into other forms	7.90%
Reading	5.5. Extracts the general idea of a text	6.60%
	6.2. Analyze the grammatical relations within a sentence	21%
Grammar	6.6.Construct complex sentences through the process of subordination	25.60%
	2.4 Uses commas with understanding	31.50%
Writing	7.5. Writes short stories	
	7.6. writes brief notes	

Table 5.10: Competencies and competency levels in English

As Table 5.10 Indicates percentage of students who has achieved the different competency levels is not satisfactory. In comparison to the other competency levels students knowledge of grammar and mechanics of writing (uses commas with understanding is better). However, when the other competency levels related to writing is considered the students' performance is weak.



Fig. 5.14: Competency related to grammar



2.4 Uses commas with understanding7.6. Writes brief notes



Fig. 5.15 indicates percentage of students who has written perfectly correct sentences in question number 36 – which is to write a brief note.

As the Fig 5.15 indicates only 10.90% of students have written five perfectly correct sentences.

On the other hand, Fig. 5.15 analyzes students' performance in question number 36, where students were asked to complete a story by adding five more sentences.





Fig. 5.16: Achievement levels in creative writing

According to Fig. 5.16 only 1.90% of students have been able to write five sentences accurately. On the other hand 4.40 % students have written five sentences but not completely accurate.

This analysis indicates that even though students have the basic understanding of mechanics of writing and grammar they are unable to sythesise and apply this knowledge in writing.

It is also interesting to note that students have performed better in competency level 7.6 than in competency level 7.5.



Competencies related to vocabulary and reading

Fig. 5.17: Facility values in the competency levels related to vocabulary and reading

As Fig. 5.17 Displays students achievement in competency levels 4.4, 4.5 and 4.6 relating to vocabulary is better than in competency levels related to reading.

Further, extracting the general idea of a text is the weakest.

Facility index values for the English Language paper

The English Language paper consisted of 37 questions. Of these 35 were multiple choice and the last two were open ended.

Fig. 5.18 displays the facility values for questions 1-35 According to this Figure facility index ranges from 0.1196 to .6642





Fig. 5.18: Facility values for the different test items -English Language

The lowest facility index is for question 24. This question *What type of an island is Sri Lanka?* test the knowledge beyond the given reading text. The students had to use their higher order thinking skills such as apply, analyze and evaluate to answer this question.

On the other hand, in question 10 the students had to produce only knowledge and the facility index is high.

10. Hiruni spelt a word in four different ways. Underline the correctly spelt word.
1. diery ii diary iii diry iv. diery

This analysis indicate that students higher order thinking skills as well creative writing skills in English are weak.

Disparity in achievement seen through item analysis

The Item Person Map (IRT) given on pg. 106 displays the range of difficulty of the test items as well as the range in student ability. According to the map there are approximately five hundred and sixty four students whose abilities are higher than the most difficult item. On the other hand there is much greater number of students whose abilities are lower than the easiest item. Therefore, this analysis confirm, as already

discussed that there are outliers – those who are performing extremely well as well as those who are performing extremely badly.



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5.8 Summary

This chapter discussed students' performance in the English language both at national and provincial level, according to school type, gender and medium of instruction.

Further, test items used to assess students' performance were analyzed to assess how far they have been successful in achieving the competency levels identified for grade 8 It could be concluded that there is wide disparity in achievement of learning outcomes in the learning of the English Language.

Chapter Five – Patterns in Achievement: English Language 2012