been researched and proven to exist. More than 10 characteristics from the list that were displayed by students, according to teachers, would also be a correlating indicator of dyslexia. This could be the subject of a related but different research project and is out of the scope of this research. However, for this project, we will work on the notion of previously researched and acknowledged correlations.

Lastly, the school was requested to provide the academic records of each child from the close of standard one with which to compare the current reading testing results. More specifically, their grades for Bahasa Malaysia were needed for correlation to the USBBM and the UDBBM for concurrent validity.

Chapter 4 - Results of the study

Results of the "Ujian Saringan Bacaan Bahasa Malaysia" (USBBM)

Stage one - field test of the USBBM

The results of the test were tallied and an item analysis was carried out to determine the item difficulty indexes for each of the items. Items should be expected to have from .20 to .80 in difficulty. The majority of the items were in the .54 to .90 range for reliability. Some items fell below this and were dropped when the test was shortened from 138 items to 110 items. A small group of items that fell in the .20 to .50 range were kept as this is also a test of diagnostic nature, so some items on the lower range would help to discriminate the good readers from the very poor readers. Spearman's correlation was used to compute the reliability level on split halves of the test with the results as follows :

Table 5. Spearman's rho (Split -test
          reliability) on the USBBM.

		Half 1	Half 2
Correlation coefficient	Half 1	1.000	.650**
	Half 2	.650**	1.000
Significance (1-tailed)	Half 1	.	.000
	Half 2	.000	.
N	Half 1	69	69
	Half 2	69	69

**Correlation is significant at the 0.01 level(2-tailed)

We can therefore reject the null hypotheses ($P = 0$) and conclude that a relationship of correlation does is exist. With this correlation coefficient, a correction formula, the Spearman-Brown prophecy formula, was then be applied to estimate the internal consistency of the test.

$$r = \frac{2r}{1 + r} \quad = \quad \frac{2\ (.65)}{1 + .65} \quad = \quad \frac{1.30}{1.65} \quad = \quad .78$$

Figure 5. Reliability level of the USBBM

Typically, a test should have a .80 or higher reliability level . However, when new tests are in early developmental stages, the reliability level is not expected to always achieve this level. A reliability level in this instance of .78 is very good for a first time diagnostic screening test. Minor changes based on teacher recommendations and the item analysis were carried out. The test was shortened from 138 to 110 items and prepared for the second stage of the screening to take place at the target school.

Stage two - the pilot test of the USBBM with the case study school

The standard two class of Taman Kooperasi Polis consists of 255 students in six classes. It is a predominantly Malay/Muslim population with no Chinese students and only 10 Indian students. The number of students that took part in the administration of the "Ujian Saringan Bacaan Bahasa Malaysia", the USBBM, totaled 234, or 92% out of 255 students. Consent was not given by 3 parents for their children to participate and 18 others were not present on the day of testing.

A week prior to the test, a teacher briefing was held to explain the research project. An explanation of procedures was given about their part in administering the screening reading test and about the follow up diagnostic and mental ability testing with the Raven's CPM that would take place once the scoring of the screening test was complete. The tests were given in mid February at the same time through out the whole school by the classroom teachers.

One irregularity occurred however that was discovered after the test. The teacher from the "Cerdas" class apparently chose not to administer the first half of the test which was the oral portion. Discovering this, I ran off a separate copy of just this section of the test and presented it to the afternoon supervisor and asked her to see that the teacher give this portion of the test. After checking each day for a few days, it was still not completed. He replied that he did not have time to do this and that based on his experience, he felt it would be too difficult for the majority of the students. Due to this, I chose to make a different cut off point for this class, allowing for the possibility that some students would have gotten more points. This section covers 28 points, therefore, I decided to make the cutoff point

10 points higher for this class only. Otherwise, essentially the whole class would have gone into the screening round. This affected 8 students only.

Table 6. Frequency of USBBM scores

Scores	Frequency	Percentage	Quartile
0-110	N = 234	100	
75-110	129	55.13	First
51-74	61	26.07	Second
26-50	25	10.68	Third
< 25	19	8.12	Fourth

Scores obtained ranged from perfect scores of 96 on the reading section and 14 on the comprehension section - for a total of 110 points, to a low of 0 and 1 as four students could not even complete the test. In Table 6, the frequency of the scores is given to give an estimate of where the largest number of scores fell, which was in the first quartile. From this, we could assume that the test was "too easy". However, given that this is a test of reading ability and that it should have more discrimination power, we should hope to see more scores at the top, indicating that a large percentage of students can read efficiently by the time they reach standard two.

In Table 7, the mean score for each class is given, which shows the variation in scores achieved from class to class. The class with the highest range of scores had a mean score of 104.86, while the class with the lowest range of scores had a mean score of 58.1389 as shown in table 7. This shows a real discrepancy of the reading

Table 7. Mean class scores on the USBBM test

Class	Mean scores
"Bijak"	104.86
"Bistari"	93.61
"Cerdik"	84.37
"Pandai"	72.39
"Pintar"	58.14
"Cerdas"	33.27
Overall mean	76.69

Table 8. Descriptive Statistics for the USBBM

N	Min.	Max.	Mean	Std. Deviation	Variance	Skewness	St. error
234	0	110	76.69	29.52	871.158	-1.035	.159

performance of the children in standard two.   The overall mean score for the whole standard two class was 76.69.   As shown in Table 7, the mean score of the lowest three classes fell below the whole standard two mean score.   As with most schools, classes are "streamed" and the weakest students have all been grouped into two classes, "Cerdas" and "Pintar", which explains the large variance of the mean from class to class.

Stage three - pilot test of the UDBBM and administration of the Raven's CPM

 Selecting the screened candidates for the UDBBM.

  The majority of the students who were recommended for the next round of the diagnostic test came from the three classes whose mean score fell below the whole standard two mean score, that is the "Cerdas", "Pintar" and "Pandai" classes. In contrast, no one from the "Bijak" class, only one from the "Bestari" class and two from

the "Cerdik" class came into the diagnostic reading test round. Consideration was given to the definition of reading ability in order to determine at what score point to cut off for those students to take the diagnostic reading test, the (UDBBM). If the method of taking those in the -2SD was followed, then we possibly would have missed some of those children having difficulty with reading. The accepted grading norms for informal reading inventories was followed and only those students whose scores were below 60 % (illustrated in table 5) correct were selected. In a test of 110 items, with 96 being word analysis and 14 being comprehension, a score of 66 or lower on the word analysis would indicate reading difficulties. This became the cutoff point and there were 60 students or 23.53 % of the standard two class who were recommended for the next round for diagnostic testing of reading ability with the UDBBM and mental ability testing with the Raven's CPM. Graph 1 clearly illustrates the frequency of scores and a noticeable separation point of weak and strong scores.
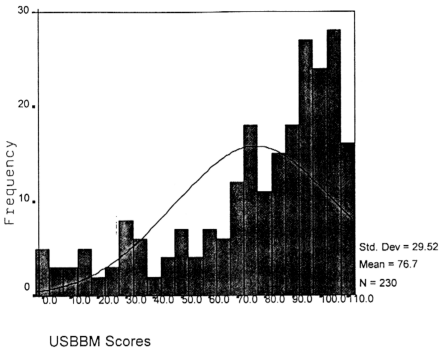
USBBM Scores

Figure1 . Range of USBBM scores.

From the range of scores shown above, we can see that a small percentage of students performed below the average.   What this also helps to show is the discriminatory value of the test, which is more important for a test of screening / diagnostic nature. Essentially, those that could read, did well on the test and those that were having difficulty, showed this through lower test scores.

Results of the mental ability testing

Once the group of students who would take the diagnostic test was selected, they were then administered in small groups of 6 the Raven's Colored Progressive Matrices (CPM) test. Three parents had been given two pre-training sessions on how to administer the group test and were given written instructions from the manual that had been translated into Bahasa Malaysia. They were able

to complete the testing within three days in continuous groups of six children at the end of March. The testing took place in the school library, where three students each sat at 2 large tables and they were far enough not to be able to copy from one another. A scheduled list was prepared in advance for the afternoon supervisor, the class teachers and the assistants so that the students would be rotated in and out in an orderly fashion to complete the testing. A total of 53 students took the test, out of which, 43 had completed all 3 of the tests and were included in the final sample analysis.

One other concern was that the children might lose track and misplace their answers on the answer sheet, so I alerted the assistants to keep a close watch on them. I had developed a different answer sheet that had larger squares in which to place the answers and with the particulars translated into Bahasa Malaysia.

The CPM is a standardized culture fair test of mental abilities and has a total of 36 items. Norms are available for several different countries, so I chose to use those from Puerto Rico, also a "developing" country like Malaysia. The Puerto Rico normed scores have a lower median and mean score than other countries, but is the one which most closely matches the mental abilities of the case study group. Also to be considered is that N in this case is the lower performing readers, so a better range of scores from normal to above average students is not available for comparison to standardized norms. Nonetheless, the Puerto Rico norming gives us reasonable comparison.

Table 9 . Standardized scores * vs. SKTKP sample ((N=46) scores for the
Colored Ravens Progressive Matrices

Percentile	Age in years : months				Students from SKTKP			
	7:3 to 7:8		7:9 to 8:2		7:3 to 7:8		7:9 to 8:2	
					No.	%	No.	%
					N=26		N=17	
	PR	M	PR	M				
95	27	30	28	29	1	3.85	1	5.88
90	25	26	26	27	2	7.69	1	5.88
75	21	22	22	24	4	15.38	2	11.77
50	16	16	17	18	4	15.38	3	17.65
25	13	9	13	9	12	46.15	9	52.94
10	10	5	10	6	2	7.69	0	0
5	8	4	8	3	1	3.85	1	5.88
					100 %		100%	

*based on smoothed 1977 norms for Puerto Rico in context of 1982 Dumfries Data
Key : PR = Puerto Rico   M = Malaysia

The range of scores has a larger spread with the SKTKP group, showing a

higher average score at the 95th percentile, but also a lower score at the 5th

percentile as shown in Table 9 below.   Take note, however, that the median score

at the 50th percentile is the same as the standardized norm for Puerto Rico for the

7:3 - 7:8 age group and only 1 score mark above for the 7:9 to 8:2 age group.

One of the criteria of determining which students have reading disability is

if they have average to above average intelligence, but show low reading ability.

So far, the CPM scores show only 18 out of the 43, or 41.86 % of the student

scores that are at the 50th percentile and above. The remaining 25 out of the 43, or

58.14 % are below the norm, however, 7 of them had raw scores of 14 and 15, which would still be considered hovering around the average, just slightly below. Some of these students are generally mentally disadvantaged which would be the cause of their low overall performance in school including their low reading ability. Table 11 above compares the scores of our case study group with the norms for the CPM from Puerto Rico.

Results of the UDBBM and mental ability testing

The UDBBM took 8 school days to complete. Most of the children read very slow, spelling out the letters of each syllable before pronouncing them. As such, the number of students that could be tested during each school session was underestimated. An average of 7-8 students were tested each day, where it had been estimated that 8-10 could be completed in a day. A quiet seminar hall attached to the library was provided, which had desks in rows and a long table covered with a table cloth at the front where we sat. It was very comfortable and cool with several ceiling fans and the students seemed equally at ease.

A scheduled list of students to be tested was prepared in advance. This was given out to the afternoon supervisor and the class teachers, so they would know when students would be called for testing. As each student was brought to the testing room by me, I talked with them on the way with a self-introduction, some light conversation, and then explain to them what we would be doing. By the time we reached the testing room, most seemed to be relaxed and feeling comfortable with me. After each student finished the test, they were given a small reward of candy (with the approval of the school).

During the test, any student that had made more than 8 errors in a section were automatically stopped and were asked to proceed to the next section to see if they could complete more. After three sections of continuous mistakes, they were stopped and asked to go to the last 2 comprehension sections of the test. I read the passages to them orally to test for oral comprehension. Most of them could reply with answers to several of the comprehension questions but not 100% correct. Three students could not even get past the first section of syllables or "suku kata", so a colored alphabet sheet was ready to see if they knew the alphabet. Even this, the three of them could not achieve successfully. These three students came from the low mental ability group.

An area of interest is to gain an understanding of the types of miscues or errors that children make while reading. The Malay language is built on a system of syllables or "suku kata", the basic unit of understanding after the alphabet that students should seek to learn in preparation for learning to read. The UDBBM was also built on this and was graded for standard one and two readers, starting out simple with "suku kata" and then moved on to two syllable words of consonant vowel + consonant vowel "KV + KV" words and then on to words with three letters in a syllable with two, then three syllable words.

Table 10. Summary of UDBBM scores and errors for all students screened

N = 43	misp	subs	refuse	add	omis	rev	wrong	correct
Grand Total	898	644	134	214	2308	284	4482	5302
Percentage	20	14	3	5	52	6	100	

The highest number of errors were the omissions at 52% . Students who were unable to finish the test had those unfinished items scored under the omissions category. The "wrong" column is a total of all errors wrong and the correct column is the total correct scores for word analysis and does not include comprehension scores.

The next two highest areas of errors are the mispronunciations at 20% and substitutions of letters at 14%. What seemed to be common with many students was the point at which they began to make these errors. For students who did reasonably well on the first and second sections, the "suku kata" and then the "KV + KV" (refer to figure 3) words, by the third section of the test when "KVK + KVK" words were presented, they began to have difficulty. A frequent error was the mispronunciation, substitution or even the total omission of the third consonant (K) letter. This was evident in both the UDBBM and previously in the USBBM. More interestingly, as mentioned earlier, most students were still at the stage where they had to spell out the letters before pronouncing each syllable and quite a few would spell the syllables correctly, but then pronounce something altogether different. This tells us that possibly something in their short term processing might be deficient. Further research on cognitive processing might give us some answers with this group of students.

The next highest are the reversal errors which were at 6%. This type of error is typical of a dyslexic child, with he letters b/d and p/b being the most common reversal. 10 of the students presented this type of error numerous times. With 26 items having the letters "b" and "d" in them, even 6 errors shows a 23%

incorrect rate for this category. Two students had 11/26 or 42% wrong and one
had 13 or 50% wrong.

The last two categories of additions at 5% and refusals at 3% saw the least
number of students with this type of error. Three students, interestingly,
continuously added syllables of "me" or "men" to several words, both during the
word pronunciation sections and the phrase and paragraph reading sections. Only
two students showed high levels of refusals. To differentiate between refusals and
omissions, these were words where the student had been progressing reading and
would stop at a word and refuse to say it, but then continue on with the next item.
Out of the learning disabled group, 4 students or 19% were unable to finish the
test. Out of the disadvantaged and slow learners, 10 students or 37% were unable
to finish the test.

Table 11. Reading ability levels of students as determined by the UDBBM results

		N = 18 Dyslexic IQ >= 16			N = 25 low mental ability IQ <= 15		
Reading level	Score	Reading	Score	Comp.	Score	Reading	Score	Comp.
Independent level	> 125	10	8	2	> 125	6	8	0
Instructional level	85-124	3	6-7	7	85-124	3	6-7	3
Frustration level	> 84	5	> 5	9	> 84	16	> 5	22
Total		18		18		25		25

In summary of this section of the test, there were 16 students or 37 % who
showed scores above 125 correct, which technically should put them at the
independent level of reading. However, all but one of them of them had reading

rates which were far below the average reading rate of 34.15 wpm. Scores can be deceiving, which is why qualitative information provides more insight. Once again, let us be reminded that almost all of the 43 students, save a few, were still spelling out the letters for each syllable or "suku kata" before pronouncing each word. This alone shows that they are not yet reading at an efficient rate. At the instructional level, we have 6 students or 14 % who scored between 85 - 124 items correct. All of these students had very low reading rates and made very slow progress through the test. At the frustration level are the remaining 21 students or 49% who completed less than 84 items of the test, remembering that among this group were also 14 who could not even finish the test.

Finally, there were four reading sections, the last two of which had comprehension questions following them. These sections were graded for standard one and two. Out of the first group of learning disabled readers, only 4 students or 19% were able to achieve a full score on the comprehension section, which means they are at the independent level for comprehension. Scoring 6-7 correct were 8 students, which is at the instructional level and the remaining 35 scored less, which puts them all at the frustration level for comprehension.

While each of these types of errors might show up on any students test results, typically only one or two categories show up in a larger percentage for any one student. From this we can determine the areas of weakness for each student and develop a remedial program based on their shortcomings. Although this would be too large of a project to undertake in this research, it could be an area for a follow up research project. In any case, what has been done for the school is to

provide them with a record for each of the 60 students that were screened out
(Refer to Appendix F for a sample copy) that includes the USBBM and CPM
scores, and a complete itemized error analysis of their UDBBM results. In
addition, brief recommendations for remediation were given. Whether or not the
class teachers will have time to work on individualized instructions is another
issue. Copies of this have been provided for the families as well in the hopes that
some initiative might come from home.

To determine the concurrent validity of both tests, scores of the USBBM
and UDBBM were compared to school grades in Bahasa Malaysia with the sample
group.

Table 12 . Mean and standard deviation of Bahasa Malaysia
(BM) grades in school. the USBBM and the UDBBM.

N	Test	Mean	SD
44	Standard 1 BM grades	44.55	20.05
46	Standard 2 USBBM	35.00	19.26
46	Standard 2 UDBBM	118.52	67.09

From the standard deviations calculated above in table 12, we could then
apply the Pearson rho correlation to better understand the relation between these
scores. as shown in table 13.

The Pearson Rho value of .591 shows a significant relationship between
the USBBM scores and the UDBBM scores. a .279 between the UDBBM and

school scores and .021 between the USBBM and school scores and we can

therefore reject the null hypothesis. However, the relationship between the

Table 13. Pearson Rho correlation of school BM scores and USBBM and

UDBBM scores.

		Bmgrades	UDBBM	USBBM
Pearson Correlation	Bmgrades	1.000	.279	.021
N=43	UDBBM	.279	1.000	.591**
	USBBM	.021	.591**	1.000
Sig. (2-tailed)	BM grades	.	.067	.891
	USBBM	.067	.	.000
	UDBBM	.891	.000	.

** Correlation is significant at the 0.01 level (2-tailed).

school scores in Bahasa Malaysia and the scores from the USBBM and the

UDBBM is not as strong. The observance of a weak relationship between the

school score, the USBBM and the UDBBM leaves us to look at other areas for

correlation. The school records show three grades for Bahasa Malaysia : oral,

written and comprehension. Both the oral and written are given on notations of

"M-mahir", that is, proficient and "BM-belum mahir", or not proficient. Only the

Comprehension grades are given as a score, which is based on a written test.

Technically then, we should compare only the comprehension sections of both the

USBBM and the UDBBM with the school grade. When this is done, we arrive at a rejection of the null hypothesis and a better concurrent validity level for the comprehension sections of both tests. But this still leaves us to question the concurrent validity of the rest of the test.

Table 14. Pearson Rho correlation of school BM scores and the comprehension sections only of the USBBM and UDBBM scores.

		BM grades	UDBBM	USBBM
Pearson Correlation	Bmgrades	1.000	.409**	.404**
N=43	UDBBM	.409**	1.000	.076**
	USBBM	.404**	.076	1.000
Sig. (2-tailed)	BM grades	.	.007	.000
	USBBM	.007	.	.595
	UDBBM	.006	.595	.

** Correlation is significant at the 0.01 level (2-tailed).

<u>Results from the qualitative data forms</u>

Very few of the personal data forms or "Kajian peribadi" were returned however, so an effective data analysis could be carried out. Only 12 students out of the 60 who were screened out, or 20% . came back with the personal data forms. Of these, 5 were from the suspected dyslexic group and the other 7 from the slow learner an disadvantaged group.

The checklist, saw a better return rate of 28 out of 60 or 47% students. This was a checklist of 36 behavioral problems that dyslexic children typically demonstrate. If more than 10 items are checked, it suggests that the child is

experiencing some difficulty.   All but 3 children had more than 10 items checked off, thereby giving an indication that teachers could also observe some problems with these children.

In matching up both sets of forms, we come out with 7 of the suspected students, or 11.6 %, with both forms to supply further information to build individual case studies. A brief summary of both forms on these 7 can be referred to in Appendix N.

Case summaries

The final figure of 21 students who scored in the top 50th percentile for mental ability, but in the lower range with their USBBM and UDBBM scores, becomes our final suspect group of students with dyslexia or specific learning disabilities. A look at Tables 14 and 15 gives a comprehensive summary of the students' scores including performance in Bahasa Malaysia at school. Most of the students, based on their reading rate, were still struggling to read. Efficient reading students who were tested with the UDBBM during the first field test (Wan Zaid, 1998) had a reading rate of between 55-80 words per minute.

Table 16 (cont'd). Case summaries of students considered disadvantaged readers or slow learners
> 9 IQ slow learners
9-15 IQ disadvantaged readers

Case no.	UDBBM scores			Miscue analysis						Rate		School perf.	USBBM	IQ
	Dbaca	Dkef	Djum	misp	subs	ref	add	omis	rev	w/m	Bmkef	%	sjum	
48.	51	2	53	0	8	0	0	0	0	32.61	2	18.00	28	13
49.	19	0	19	2	2	6	2	0	1	10.66	4	4.00	18	15
51	40	3	43	17	21	1	0	123	3	3.45	4	39.30	16	11
53.			0							.	.	.	12	9
56.	1	0	1	12	5	0	0	190	6.	18	.	21.30	6	14
57.	8	0	8	1	1	13	0	185	0	1.92	36	28.60	4	14
60.	0	0	8	1	1	13	0	185	0		36	28.60	0	10

N= 25

Key :

Dbaca - UDBBM word recognition raw score
Dkef - UDBBM comprehension raw score
Djum - UDBBM total raw score
w/m - reading rate of words/minute
Bmkef - school grade in BM (overall)
% - overall grade percentage for all subjects
sjum - USBBM total raw score
IQ - Raven's CPM raw score

Reading errors/miscues :
misp - mispronunciation
subs - substitution
ref - refusal to pronounce
add - addition of letter/syllable
omis - omission of letter/syllable
rev - reversal of letter or syllable

Table 15. Case summaries of students suspected of dyslexia or specific learning or reading disability

N=18 Case no.	UDBBM scores			Miscue analysis						Rrate w/m	School perf.		USBBM IQ	
	Dhaca	Dkef	Djum	misp	subs	ref	add	omis	rev	w/m	Bmgrades	%	Sjum	CPM
1.	96	6	102	30	17	40	3	6	2	7.03	76	82.30	48	29
5.	186	8	194	5	7	0	1	6	3	17.93	56	58.00	58	24
13.	170	7	177	5	27	0	0	3	3	25.20	81	67.30	17	18
14.	184	6	190	4	13	0	2	3	4	14.15	60	57.30	15	28
18.	55	4	59	9	6	27	0	111		3.85	44	54.60	60	18
20.	196	8	204	2	8	0	0	2	0	25.17	0	.00	59	26
21.	193	7	200	3	10	0	0	2	0	21.31	64	51.00	57	21
22.	76	3	79	53	20	1	3	54	1	9.98	34	54.00	56	30
24.	179	5	184	7	8	0	0	3	11	11.74	51	44.00	52	27
26.	162	7	169	6	26	0	6	8	1	12.08	44	46.60	46	24
29.	115	0	115	17	14	2	16	37	7	6.62	52	49.36	34	28
31.	169	6	175	6	12	0	2	13	6	11.23	80	75.30	24	23
32.	73	0	73	47	25	0	1	51	11	.	32	42.60	23	20
34.	53	2	55	68	13	0	1	71	2	6.30	52	42.60	1	18
36.	150	7	157	9	26	0	8	10	5	17.47	50	42.30	51	26
37.	196	4	200	1	7	0	1	2	1	27.11	.		47	20
52.	39	0	39	24	6	0	3	111	0	15.99	50	34.70	13	20
55.	122	3	125	57	12	0	1	15	1	11.95	16	27.30	9	24

Table 16. Case summaries of students considered disadvantaged readers or slow learners

>9 IQ slow learners

9-15 IQ disadvantaged readers

Case No.	UDBBM scores			Miscue analysis						Rrate	School perf.		USBBM	
	Dbaca	Dkef	Djum	misp	subs	ref	add	omis	rev	w/m	Bmkef	%	sium	IQ
2.	156	5	161	17	18	0	1	14	2	18.90	.	.	64	12
3.	123	2	125	15	39	0	19	17	4	8.36	.	.	34	13
6.	96	4	100	15	8	7	0	73	1	16.47	50	56.60	56	5
10	.	.	.	.	.	.	.	.	.	.	36	60.30	34	12
12.	18	4	22	16	11	7	1	155	0	4.13	44	63.80	21	4
15.	167	3	170	16	12	2	2	5	1	10.75	60	57.30	22	13
16.	192	7	199	1	12	0	1	1	0	23.09	54	60.00	61	10
17.	197	6	203	4	2	0	2	3	1	18.58	50	44.00	60	15
19.	148	6	154	13	22	0	3	17	5	16.84	41	64.00	59	12
23.	173	3	176	14	10	0	4	6	1	22.57	48	4.00	55	12
27.	118	5	123	8	40	0	13	16	13	14.22	60	56.00	40	15
28.	.	.	.	.	.	.	.	.	.	.	44	46.00	38	12
33.	28	1	29	41	12	0	0	129	2	.	62	54.60	2	4
35.	16	2	18	43	11	4	1	132	1	4.15	48	49.30	1	11
41.	1	0	1	21	2	4	1	181	0	1.87	22	31.30	34	10
43.	12	0	112	67	17	0	1	9	2	15.69	36	37.30	32	15
44.	31	0	31	42	16	0	0	112	6	7.43	22	32.00	30	5
45.	62	0	62	66	14	0	0	66	0	12.53	28	29.30	29	13

Table 17. Comparative view of CPM scores, screening and diagnostic reading test scores with descriptive statistics

Test	N	Range	Min.	Max.	Mean	SD	Variance	Skew	Std. Error
IQ score	46	26	4	30	17.60	7.15	51.102	-.084	.361
USBBM	46	63	1	64	35.00	19.26	370.800	-.187	.350
UDBBM	46	208	1	209	118.52	67.09	4500.566	-.225	350

Average readers had a reading rate of between 40-54 words per minute. Those reading any slower are still not reading efficiently. In fact, during the individual UDBBM testing, a large majority of the students still had to spell each syllable before pronouncing it and this slows down the rate of reading dramatically. A comparison of the USBBM scores which were all in the range of less than 60% correct, a recognized standard as shown in Table 1, could have been was low due to their slow reading rate and inability to finish the test or to finish it correctly.

Mean scores of the results of the USBBM, the UDBBM and the Raven's CPM are provided in Table 13 for review so that we may compare it to the summary of scores given for all of the students in Tables 14 and 15.

Chapter five - Discussion

If we can discover that 57 out of 255 students or 24.78 % in one standard level at one school are having so much difficulty, what about the rest of Malaysia? Out of this group of 57 students, only 43 valid cases were included in the final analysis with test scores available from all three tests. Of the remaining 14, 11 did not have the CPM scores, but did present USBBM and UDBBM scores. All of them had scores that put them at the frustration level of reading ability, so they are included in the final tally to determine the percentage of standard two children

having difficulty with reading. In order to help this portion of the population that is failing to learn in the normal curriculum, an ecological program of multi-disciplinary assessment needs to be established and implemented. This research was an effort to develop and administer such a program. Further research is needed to develop reliable and valid standardized and normed reading ability tests at all grade levels. The tests that were constructed for this research had a reasonable level of reliability - .70 for the USBBM and .588 for the UDBBM. More research is needed to validate these tests and to develop tests of reading ability for all grade levels. Many secondary schools also report that there is a percentage of students that are not performing well and research at this level could reveal similar reading difficulties.

From the results of both the USBBM and the UDBBM, it could be observed that errors were related to a lack of phonics development. As current theories support according to Fawcett & Nicolson (1995), Elbro (1991), Snowling (1995), Badian (1994), remediation based on phonics delivers better results in reading improvement. In Malaysia, we have Long (1969) who early saw the need for research in this area and also found the same. Othman (1978), Maarof (1984) and Arshad (1989) later also found the same weakness in the lack of developing syllable or "suku kata" knowledge. However, they still left room for further suggestion that remediation be based on the phonics method of teaching the language. The habit that students here have of reading the letters first and then spelling each "suku kata" as they go along reading, which slows them down, suggests that a phonics method is not being fully taught. Students are relating symbols to letters and not symbols to

sounds. Further experimental research in comparing the two methods of teaching could provide some insight for better progress in reading. In addition, they did not take into consideration the mental abilities of their target groups. This is an area which has been overlooked and could provide better decision making tools for educators in the planning of remedial programs for such children.

Through the administration of other sources of assessment such as the Raven's CPM for mental ability, it was easy to differentiate between the dyslexic children and the slow and disadvantaged learners with lower IQ scores. One should not ignore either population, but variations in approaches to remediation might be needed and expectation levels of performance will be different. Some educators see an unfairness in intelligence testing, as children with low mental ability can and do learn to read. It does help however, to give education providers a well-rounded picture of individual student abilities and allows for a specialized plan of remediation to be developed and delivered. However, the delivery of such individualized attention would make further demands on an already strained education profession in Malaysia. Specialists in educational psychology and teachers of learning disabilities are two categories of professionals that are not yet recognized nor trained in the field of education in Malaysia.

An important aspect of developing a remediation plan for these students is to obtain qualitative information about their background which may enlighten education providers about external causes for their deficiencies. Although in this research project, only 7 or 12 % of the students had a full record available from both the quantitative and qualitative data, the various measures of both reading and

mental ability was sufficient to at least provide some answers to the difficulties being presented to this case study group.

Recommendations were written up and shared with the Head Mistress of Sekolah Taman Kooperasi Polis- Fasa 2. It is hoped that she will act upon them and make a request to the Ministry of Education for further remedial assistance for these children for the academic year. They started out having a remedial teacher, but he has now become a regular class teacher for the "Cerdas" class, the lowest performing class. As such, he has less time to focus on students' individual difficulties.

In other countries, education laws require that all students receive a fair education and if there are any children who are not learning at the same rate as their peers, they are recommended to have a full academic assessment, inclusive of mental ability testing. In the U.S. for example, the public education law "PL-94-142" and the "IDEA" laws are two of a series of public laws that set out specific means of assessment and remedial programs for such students. As a sample, refer to Appendix N for what one institution uses as a guideline for referrals for learning disability students. It is high time the laws here see some more focus and specificity to address the issue in Malaysia. The education system here is maturing and this is a part of the growth process, especially if the government wants to reach fully developed nation status. This status means assuring that each citizen from childhood to adulthood is given the right and capacity to function to the best of his or her abilities and to be given the support that is needed in order to achieve this.

The Ministry of Education continually gives public messages that they are addressing this issue, however, it seems it is more towards children with more severe handicaps. It still seems that there is not a clear definition of just what specific learning disabilities are and how to help such students. It is hoped that this research has helped to define the difference between these populations. Continued research to highlight the number of students that are out there with these types of learning problems, at both the primary and secondary - even the college level, needs to be done, so that a better understanding can be achieved of what remediation needs to be offered in the education system. Reading or literacy is the key to all other learning and when this foundation is weak, so the rest of the learning process will also be weak. These children provide the pillars for the nations future which must also be strong.