In 2004, Malaysian Education Ministry (KPM) had begun its "Pilot Program of Dyslexia-Specific Learning Problems," and currently in 2012 there are already 49 primary schools with 86 dyslexia classes throughout Malaysia. This study focuses on the detection of spelling errors in the Malay Language essay-writing done by dyslexic children all across Terengganu, Malaysia. This spelling error detection was centralized on the Levinson Theory, 1994. This theory has shown seven aspects of errors in the writing done by dyslexic children, namely errors in terms of (i) elimination, (ii) transfer, (iii) insertion, (iv) replacement, (v) reversal, (vi) wild guess, and (vii) condensation. This study was done on eight dyslexic children aged 10 years old registered with the Society Welfare Department, Terengganu and all of them were adopted as the sample of the study. The study findings have demonstrated that elimination, replacement and wild guess were among the most committed by the subjects. Meanwhile, in terms of transfer, reversal and condensation, they were the lowest committed by the subjects. The study outcome had given priority to the instructors of the dyslexic class, for them to make some improvements on the teaching and learning strategies in facilitating the process of mastering the spelling for the subject of study. The variety of therapies used to promote spelling mastery can be used as a consolidation in learning and to strengthen exercises both in school and outside class hours.

BACKGROUND
Malaysian Education Ministry (2010), in the Malaysian Education Plan statements from 2001-2010, states that educational opportunity for all is an aim held by the Malaysian education including the learning of children with special needs. The establishment of several schools for children with special needs has been upgraded as to accommodate the educational needs of these children in national schools (the Master Plan of Educational Plan, 2010). Based on the Educational Act (1996) amended in 2002, all children aged six years and above are made compulsory to go to school. Meanwhile, for the Disabled Act (2008) it is established that the educational opportunity for the disabled people cannot be exempted. Thus, it is harmonious with the government’s initiatives to provide education for children with special needs.

In developing excellent human capital among children with special needs, the national education system must be of quality, relevant and holistic. Individuals with excellent education need to expand their self-potential, until the optimum level so that the individuals can help the coming generations and are able to compete and have the marketability in anything they produce for use in the educational field. As responsible citizens to the nation, religion and country, the individuals must inculcate good, noble values in every movement and actions they demonstrate.

According to Lyon et al. (2003), dyslexia is a specific learning problem that roots from neurobiology. The main characteristics identified are the weaknesses in identifying words, spelling and also recording words when reading. The dyslexic learning issue is classified into six characteristics and these areas include (i) the difficulty in using the language, (ii) the imbalance with intellectual ability, (iii) the struggle when reading printed materials, (iv) not being able to write eloquently and precisely-the materials, (v) tired eyes after concentrating on the writing for several minutes, and (vi) limited concentration (Madhya Zghaan, 1999; Lee, 2008). According to the study done by Mercer (1997), Hammond and Hugges (1996), also Spafford and Grosser (1996), the real cause of dyslexia is divided into three, the aspect of hereditary or genetic, biology and maturity. This study has proven that dyslexic individuals have family backgrounds associated with dyslexic syndrome caused by chromosomes 15, 1 and 16 that can be passed down genetically. Julie Williams & Michael C O’Donovan (2006), in their study related to The Genetics of Development Dyslexia have proven that the presence of genes influence the development of dyslexia involving certain chromosomes. This study is able to identify genes which becomes a sort of disturbance in terms of biasness or complex so much so that there would be an occurrence of dyslexia to an individual.

Dyslexic children constitute some of the children who have difficulty in learning. They suffer from various problems, some of which include the problem in communicating, listening, writing, reading and counting. Most dyslexic children have good potential in their intelligence but they have lower learning potential than other normal children (Delphie, 2006). Therefore, according to Daniels (2009) and McLeskey, Rosenberg, & Westling (2008), the learning environment for children with special needs should be segregated from children from the mainstream in order to create a more focused surrounding.

With reference to the writing issue confronted by dyslexic children, Yusop bin Hj. Malie & Walter Alvin Jiniti (2010) have initiated a study with regards to "Disgrafia dan Cara Membantu: Kajian Kes Ke Atas Murid Program Integrasi Pendidikan Khas" (Dysgraphy and Ways To Help: Case Study on Students of Special Education Integrated Program). The focus of this study is to analyse the problems that lie in the mechanism of writing amongst dyslexic children. This study involved a child from a learning problem class from the Special Education Integrated Program in Kuching. The methods used in this research include observations on the child’s behavior and writing test. From the observation, it is found that the problems are manifold: the way he holds the pencil, letter formation, inconsistent letter size, and inaccurate writing technique.

A member of the Optometry Department, Allied Health Science Faculty, UKM, Ai Hong Chien and Noor Surini Mohamad (2002) has done a study on "Kekeliruan Mengecam Huruf B-D-P-Q di kalangan Kanak-kanak Prasekolah" (The Confusion in Detecting Letters B-D-P-Q Among Pre-schoolers). In this research, researchers have focused on 3 types of confusion, namely inverted reversal, reversal-type and mirror image (contrasting image). 61 Malay pre-school children were made the subject of this study. To test the confusion, children were instructed to write b-d, p-q on a paper separately. Other than that, the subject was instructed to detect the test plates comprising of 12 pairs of letters such as b-q, p-d, p-d, and so on as to test the confusion to detect these letters. Confusion in detecting is higher than the confusion arising from re-writing. Children with the problem of detecting the letters tend to be more complex as compared to children who have issues with writing as has been stated by
Barnard et al. (1996).

**METHODOLOGY**

The Dyslexia Syndrome Theory was pioneered by Levinson (1994). He has stated that dyslexia comes in three problematic areas: the reading aspect, the writing aspect and arithmetic. Therefore, in the first two aspects, Levinson has outlined seven mechanisms of errors, which are (i) transfer, (ii) insertion, (iii) replacement, (iv) elimination, (v) condensation, (vi) reversal, and (vii) wild guess. Most dyslexic people would demonstrate the signs of not being able to balance their capacity to memorize letters, the sounds of letters, and word combination as they forget easily. They have exercised various skills and efforts to prevent their weaknesses being detected by the teacher.

Researcher has employed several methodologies including library study, observation, interview, and tests. All these approaches had been adopted to obtain precise findings, and which tally with the objectives of the study.

This research made use of 100% study subjects in Terengganu. There are 25 dyslexic students from 3 Dyslexia Plot Schools in Terengganu who have been acknowledged as People With Disability (OKU) of various ages. Thus, to meet the objectives, the researcher had chosen all Year Five dyslexic students totalling 8 students from the three schools SK Padang Hiliran, SK Chukai, and SK Tengku Mahmood. All the data obtained from the subjects’ writings were analysed qualitatively by making their essay manuscripts the primary source of this research.

**STUDY FINDINGS**

The failure of dyslexic children in their language proficiency, such as reading, writing and spelling, which is consistent with their age level and their capability stems from the confusion arising in the minds of the children (Wold Federation of Neurolology, 1968). In Levinson’s Theory (1994), Levinson has proposed seven mechanisms of writing errors committed by dyslexic people (i) transfer, (ii) insertion, (iii) replacement, (iv) elimination, (v) condensation, (vi) reversal, and (vii) wild guess. The existence of these mechanisms propels the researcher to see just how far would these errors be committed by the dyslexic students particularly in Terengganu.

**Elimination**

Elimination as an error is divided into two sections, namely word-elimination and letter-elimination. Based on the analysis done on the subjects’ papers, it is found that word-elimination is not the case here and thus, the focus of errors will only be on letter-elimination.

| Table 1.1: Error Mechanism In Terms of Elimination |
|---------------------|---------------------|---------------------|---------------------|---------------------|
| SK 1 di bangku       | Keperluan           | perlu               | membukt             |               |
| SK 2 bangku          | Memperluan memerlu  | membantu            | berubah-ubah        | mempunyai      |
| SK 3 bangku          | Mengikut memperlu  | keperluan           | berbelanja          | memperluak     |
| SK 4 bangku          | Peranan peranan     | berubah-ubah        | berubah-ubah        | memperluak     |
| SK 5 pengguna        | Barangan berbatagan | berubah-ubah        | berubah-ubah        | memperluak     |
| SK 6 pengguna        | Pengguna pengguna   | berubah-ubah        | berubah-ubah        | memperluak     |
| SK 7 pengguna        | Peranan berbatagan  | berubah-ubah        | berubah-ubah        | memperluak     |
| SK 8 pengguna        | Kepeluan kepeluan  | berubah-ubah        | berubah-ubah        | memperluak     |

(Source: Field Research, 2012)

(1) Original Sentence: Kita masih di bangku sekolah.
SK 1/2/3: Kita masih di banku sekolah.
SK 7: Kita masih di baku sekolah.

(2) Original Sentence: ... penurukan dengan barangan yang kita kehendaki.
SK 2: ... penurukan dengan barang kita kehendaki.
SK 3/6: ... penurukan dengan barang kita kehendaki.
SK 4: ... penurukan dengan barang yang kita kehendaki.

What is shown above is the sample of error in terms of letter-elimination done by the subjects of this study during the writing test. Referring to the samples of sentences (1), SK 1, SK 2, and SK 3 had made a mistake by writing the word ‘bangku’ to become ‘baku’, the word was written with the letter <g> eliminated. Meanwhile, SK 7 wrote /bangku/ as /baku/. SK 8 eliminated the letter <n> and <g> in the word /bangku/. Table 1.1 above shows that SK 1, SK 2, SK 3, and SK 7 are among the SK who had done letter-elimination the most in their writing.

Based on sentence (2), the problem here is in the words ‘barang’ and ‘kehendaki’. SK 2 had done two spelling errors in the above sentence, which is wrongly writing the word ‘barang’ to become ‘baranan’ by eliminating the letter <g> and ‘kehendaki’ becomes ‘kehedaki’ by eliminating the letter <n> on the word.

SK 3 and SK 6 had written ‘barang’ as ‘barang’. SK 3 and SK 6 had dropped the letter <a> and <n> at the end of the word ‘barangan’. According to the 4th Edition Kamus Dewan (2005), the word “barang” means ‘item’ while ‘barangan’ means items able to be sold and bought. Thus, the word ‘barang’ cannot be appropriately used in the sentence above because it a business activity. The same thing almost happens to SK 4, where the word ‘barangan’ was written as ‘barangan’, where the letter <n> was dropped.

(3) Original Sentence: ... berbelanja mengikut keperluan ataupun sekadar menurut nafsu.
SK 1: ... berbelanja mengikut kepeluan ataupun sekadar menurut nafsu.
SK 2: ... berbelanja menekok kePeruan ataupun Sekadar menutuk nafsu.
SK 8: ... berbelanja memikul kepeluan atau pun sekada menurut nafsu.

The analysis further shows that in sentence (3) SK 1 and SK 8 had dropped the letter <r> at the word ‘keperluan’ and it becames ‘kepeluan’. In sentence (3), SK 8 had committed two errors of letter elimination, namely in the word ‘keperluan’ and ‘sekadar’. For the word ‘sekadar’, SK 8 had dropped the letter <r> in the end of the sentence making it to read ‘sekada’. Meanwhile, SK 2 had eliminated the letter <t> at the word ‘keperluan’ and it became ‘keperruan’.

This is normal among dyslexic people as their long-term memory is very limited in remembering phonetic procedures in both phonetics and morphology. Dyslexic children are able to generate their short-term memory in daily activities and also in their learning. Their memory will often center on something that they frequently see and do, and the environment can also influence their memory and learning experiences.

**Transfer**

Error in terms of transfer shows how SK spells and writes a word by reversing the letter in a word and reversing the syllable in a word. Examples are given below:
Guided by sentence (4) above, SK 5 had made a mistake in terms of the transfer of the position of the letter back to its original place. For the word <alat> as found in sentence (4), SK 5 had spelt the word <alat> to become <atul>. The position of the letter <l> after the letter <a> was replaced by the letter <t>. The same goes with the position of the letter <t> at the end of the word, which was replaced by the letter <l>. This is because of the speed rate of the pupil of the eyes while reading, which causes dyslexia sufferers to read the end-part of the word first and vice versa. Visual perception or interpretation refers to the process of interpreting and systematizing visual information, The Visual Theory in dyslexia studies that take into account visual distraction in the difficulty of processing letters and words (Lovegrove et.al., 1980; Livingstone et. al, 1991; Stein & Walsh, 1997). This may be caused by the unstable binocular fixation, vergens issues, or an enhanced crowding phenomenon.

**Table 1.2: Error Mechanism In Terms of Insertion**

| SK 1 | berbelanjalah | bannelangan | pelpabagai | berbelanjah (2) |
| SK 2 | biyasa | banngangan | berbah-rubah |
| SK 3 | sembelum | kepelikan | biyasa |
| SK 4 | berbelanjah | semjumlah | kerperluan | memeperlukan |
| SK 5 | berubah-rubah |
| SK 6 | penukaran | biyasa | penna |
| SK 7 | permelanar | semjumlah | kerperluan |
| SK 8 | berbelanjah | semjumlah | berbelanja | berubah-rubah | ankan |

(Source: Field Research, 2012)

(6) Original sentence: *Tanpa* wang tidak dapat lah kita membeli barangan ...

| SK 1 | majapa | wapunlah | tamnah |
| SK 2 | majapa | wapunlah | tamnah |
| SK 3 | majapa | wapunlah | tamnah |
| SK 4 | majapa | wapunlah | tamnah |
| SK 5 | majapa | wapunlah | tamnah |
| SK 6 | majapa | wapunlah | tamnah |
| SK 7 | majapa | wapunlah | tamnah |

(Source: Field Research, 2012)

(5) demonstrates an error in terms of insertion for the word <biyasana> and <berubah-ubah>. Three out of eight SK had done an insertion error on the word <berubah-ubah> by spelling it as <berubah-rubah>. SK identified, namely SK 2, SK 5, and SK 6 had inserted the letter <r> on the word <berubah-ubah> and made it become <berubah-rubah>. This is due to the habitual way of pronouncing it continuously. Dyslexic children cannot be burdened with a variety of formula or language patterns as they do not like to memorize and remember the formula. They would instead stick to what they are familiar with, so much so until there is consolidation that can alter their minds to accept something new.

For SK 2, SK 3 and SK 6 they had inserted the letter <y> when spelling the word <biasanya> by turning the word into <biyasana>. SK 2, SK 3, and SK 6 had spelt the word the way it sounds, spelt as <biasanya>. Indeed, <bi> was read <biya>, but the letter <y> needs to be dropped because the letter <ae> also has the same sound when spelt <ya>. Insertion will occur when SK spells a word based on the sound of the syllable without making an exception towards the additional sound whereby there exist letters that do not have to be spelt clearly.

**Table 1.3: Error Mechanism In Terms of Replacement**

| SK 1 | dihug(h)nakan | be(a)napa | ej(jibup bapa | seeumlam|h |
| SK 2 | tam(n)pa | ade(e)kah | be(i)jaka | menumrut(k) |
| SK 3 | bat(r)ang | Membu(m) | Sayuma | menumrut(t) |
| SK 4 | tam(n)pa | semm(u)anya | m(n)afsu | pe(i)jihan |
| SK 5 | p(h)erniaga | menar(h) | remu(a)ja |
| SK 6 | se(d)bagai | b(p)elbagai | nap(f)su | ra(e)maja |
| SK 7 | tam(n)pa | men(m) | promosikan |
| SK 8 | tam(n)pa | pe(i)ljan | peny(f)aja | ro(e)maja |

(Source: Field Research, 2012)
Reversal

Reversal as an error is categorized into letter reversal and word reversal. It is common for dyslexic children to make this kind of error such as the letter 'b' becoming 'd' or 'd' becoming 'b', 'c' becoming 'g', 's' becoming 'z', or vice versa. It is also common for them to reverse the syllables for instance in the word 'tisu' becoming 'suitu', and 'buta' reversed into 'tabu'. This confusion is evident even in the title-writing. SK 1, SK 5, and SK 7 had started with the word 'mempromosikan' whereby the people of Terengganu pronounce the word /mempromosikan/ as /mempromosikan/, which is by eliminating the letter 'r'.

Wild Guess

Frequently, we find that dyslexic children cannot copy the words correctly, either from the blackboard or the book, and with limited concentration, a problem associated with visual judgement. They even find it a problem to discern the sounds of letters, syllables or words (Drake, 1989). Thus, in this research, it is further found that two out of eight SK had four mistakes in the reversal aspect. This is because almost all SK can make the syllable detection mentioned, and can spell and write properly. The errors done by SK 4 and SK 5 show that they had used their existing knowledge and gave alternative answers for something that had confused them (Brenna, 1995).

Table 1.4: Error Analysis in terms of Reversal

| SK   | b(B)nikah | seke(l)d(ar) | mempor(m) prosikan |
|------|-----------|--------------|--------------------|
| SK 7 | adakah(ah)| sekadar(dar)| mempor(m) prosikan |

(Source: Field Research, 2012)

| SK   | b(B)nikah | mempor(m) prosikan |
|------|-----------|--------------------|
| SK 3 | b(B)nikah | mempor(m) prosikan |
| SK 4 | b(B)nikah | mempor(m) prosikan |
| SK 5 | b(B)nikah | mempor(m) prosikan |
| SK 6 | b(B)nikah | mempor(m) prosikan |
| SK 7 | b(B)nikah | mempor(m) prosikan |
| SK 8 | b(B)nikah | mempor(m) prosikan |

Table 1.5: Error Analysis in terms of Wild Guess

| SK   | b(B) *ber*lanjalah | b(B) *bijak* | b(B) *apa* | t(T) *jenpa* |
|------|-----------------|-------------|-------------|--------------|
| SK 1 | *ber*lanjalah    | *bijak*     | *apa*       | *jenpa*      |

(Source: Field Research, 2012)

| SK   | b(B) *ber*lanjalah | b(B) *bijak* | b(B) *apa* | t(T) *jenpa* |
|------|-----------------|-------------|-------------|--------------|
| SK 1 | *ber*lanjalah    | *bijak*     | *apa*       | *jenpa*      |

Condonation

The outcome of the analysis finds that there was no condensation process done by SK. The combination of several words in the creation of new words was not done by SK. Conclusively, in the Malay Language essay-writing, SK did not make any mistake in the condensation aspect.

CONCLUSION

Normally, dyslexic children will have problems in several aspects, which are phonology, difficulty in memorizing words, in sentence arrangements, short-term memory, and syntax awareness. The detection of these problems enable one to categorize a child either to suffer from dyslexia-visual, dyslexia-auditory or dyslexia visual-auditory problem. Abd. Rahim Talib (2006), states that children with special needs who suffer from in-capability will leave a great impact on their normal lives and learning due to their deteriorating cognitive development. It is anticipated that both teachers- mainstream and special education teachers especially in dyslexia classes can strengthen their collaborations so as to achieve more effective teaching and learning through the input given towards special education administration especially for students who have some learning difficulties. Additionally, with consistent partnership, children with special needs will then be included into the mainstream based on the academic readiness criteria, and their condition
will improve with the expertise and support offered by special needs teachers (Lee, 2010).

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