# THE IDENTIFICATION OF PRIMARY SCHOOL STUDENTS WITH SYMPTOMS OF DYSLEXIA, THEIR ACADEMIC ACHIEVEMENTS AND DISCIPLINE PROBLEMS

By

SHEILA CHRISTINE DEVARAJ

Thesis Submitted to the School of Graduate Studies,
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Degree of Master of Science

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Dedicated

to

all children with dyslexia

and

to their families who are struggling to cope,

in the hope

that soon there will be recognition of their talents

and help to develop to their full potential.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

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**March 2004**

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The purpose of this study was to come up with a diagnostic tool that can be used to identify students with symptoms of dyslexia and then to determine whether there was any significant correlation between symptoms of dyslexia in students and discipline problems. The target population was Standard 3 and Standard 4 students from national primary schools in the District of Klang. A total of 197 respondents were selected through cluster random sampling.

Data was collected by carrying out a 10-Item Diagnostic Test. The test covered Rapid Naming, Bead Threading, Hearing Skills, Postural Stability, Phonemic Segmentation, 2-Minute Spelling, Backward Digit Span, One-Minute Writing, Verbal Fluency and Semantic Fluency. It took about thirty minutes to be administered to each student. The tests were then normed separately for the (104) Standard 3 and (93) Standard 4 students. Teacher nomination was used to identify students with discipline problems. The student's academic achievement was based on their results in the mid-year examination -

using the average score in Mathematics, English and Bahasa Malaysia. The data was analysed by means of the Independent t-test and the Pearson's product moment correlation.

The Independent t-test was used to compare students who achieved zero (0) for their total score for symptoms of dyslexia with students who had a score ranging from 10 to 20. The test showed that there was significant difference in the academic achievement ($t$ (50) =7.06, $p$<.05) of students with symptoms of dyslexia (M=33.83, SD=19.44) and students without symptoms of dyslexia (M=69.69, SD=19.43). There was a significant difference as well in the occurrence of discipline problems ($t$ (50) =-8.13, $p$< .05) among students with symptoms of dyslexia (M=3.24,SD=1.09) and students without symptoms of dyslexia (M= .93, SD=1.11).

In the correlation analysis, it was found that there was a significant negative correlation (substantial relationship) between academic achievement and symptoms of dyslexia for both the Standard 3 ( $r$ (103) = -.603, $p$< .01) and the Standard 4 ($r$ (89) = -.616, $p$< .01) students. The Pearson's product moment correlation also showed that the relationship between discipline problems and symptoms of dyslexia was higher for the older students. The Standard 3 students had $r$ = .387, $p$< .01 which is a definite but small relationship, while the Standard 4 students had $r$ = .489, $p$< .01 which is a substantial relationship. This might indicate a trend where the contribution of symptoms of dyslexia to discipline problems increases as the student progresses through the school system.

In the analysis of variance, it was found that there was no significant difference in the

occurrence of discipline problems and students with symptoms of dyslexia among the Malays, Chinese and Indians. However there was a difference in terms of the socio-economic status. The students who come from the higher SES families have the lowest dyslexic score (2.13) whilst having the highest academic achievement (70.40). The opposite is seen for students from the lower SES families who have the highest dyslexic score (6.36) whilst having the lowest academic achievement (44.41). The results also show a significant difference in discipline problems based on the SES. This is consistent with studies carried out by the Ministry of Education that show that indiscipline predominates in the urban poor and working-class groups (Rahimah & Norani, 1998).

A comparison was also made between the boys and girls and the findings showed that there was no significant difference in the total dyslexic score between the two sexes. This is consistent with studies where measurement was based on the research identification and not on the basis of school identification. On the other hand, there is a significant difference in the occurrence of discipline problems when the boys (M=2.68, SD=1.51) were compared to the girls (M=1.64, SD=1.37).

This study has contributed in some measure in establishing a diagnostic tool that can be used in schools to identify students with symptoms of dyslexia. Furthermore, by showing the correlation between symptoms of dyslexia to both academic achievement and discipline problems, it emphasises the importance of detecting students with symptoms of dyslexia as soon as possible so that appropriate remedial work and teaching methods can be applied.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk Ijazah Master Sains

**IDENTIFIKASI PELAJAR-PELAJAR SEKOLAH RENDAH YANG MEMPUNYAI SIMTOM DISLEKSIA, PENCAPAIAN AKADEMIK DAN MASALAH DISIPLIN MEREKA.**

**Oleh**

**SHEILA CHRISTINE DEVARAJ**

**March 2003**

**Pengerusi:** **Profesor Madya Rahil Mahyuddin, Ph.D.**

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Matlamat kajian ini adalah untuk menghasilkan satu alat diagnostik yang dapat digunakan untuk mengenal pasti pelajar-pelajar yang mempunyai simtom-simtom disleksia dan seterusnya untuk memastikan sama ada terdapat korelasi signifikan antara simtom-simtom disleksia, pencapaian academik dan masalah disiplin. Populasi sasaran ialah pelajar-pelajar darjah 3 dan 4 dari sekolah-sekolah rendah kebangsaan di daerah Klang. Sejumlah 197 responden dipilih melalui persampelan rawak berkelompok.

Data dipungut melalui satu Ujian Diagnostik yang meliputi 'Rapid Naming', 'Bead Threading', 'Hearing Skills', 'Postural Stability', 'Phonemic Segmentation', '2-Minute Spelling', 'Backward Digit Span', 'One-Minute Writing', 'Verbal Fluency' dan 'Semantic Fluency'. Ujian Diagnostik mengambil masa lebih kurang 30 minit untuk menjalankan ujian ini bagi setiap pelajar. Ujian-ujian ini kemudiannya dinormakan secara berasingan bagi pelajar darjah 3 (104) dan darjah 4 (93). Guru tingkatan diminta

mengenal pasti pelajar yang mempunyai masalah disiplin. Pencapaian akademik pelajar-pelajar ini diukur berdasarkan keputusan mereka dalam ujian pertengahan tahun dengan menggunakan markah purata dalam matematik, bahasa Inggeris dan bahasa Melayu. Data dianalisis melalui ujian-t sampel tak bersandar dan korelasi Pearson.

Ujian-t sampel tak bersandar digunakan untuk membandingkan pelajar yang mendapat sifar (0) bagi jumlah markah dari ujian simtom-simtom disleksia dengan pelajar yang mendapat markah di antara 10 hingga 20. Ujian-t menunjukkan bahawa terdapat perbezaan signifikan dalam pencapaian akademik ($t(50) = -7.06$, $p < .05$) antara pelajar dengan simtom disleksia (M=33.83, SD=19.44) dan pelajar tanpa simtom disleksia (M=69.69, SD=19.43). Terdapat juga perbezaan signifikan dalam kewujudan masalah disiplin ($t(50) = -8.13$, $p < .05$) antara pelajar dengan simtom disleksia (M=3.24,SD=1.09) dan pelajar tanpa simtom disleksia (M= .93, SD=1.11).

Dalam analisis korelasi, terdapat korelasi negatif yang signifikan di antara pencapaian akademik dan simtom-simtom disleksia bagi pelajar Darjah 3 ( $r(103) = -.603$, $p < .01$) dan Darjah 4 ( $r(89) = -.616$, $p < .01$). Korelasi Pearson menunjukkan bahawa hubungan antara masalah disiplin dan simtom-simtom disleksia adalah lebih tinggi bagi pelajar yang lebih tua. Pelajar darjah 3 mempunyai $r = .387$, $p < .01$, yang merupakan kaitan yang kecil tetapi tetap, sementara pelajar Darjah 4 mempunyai $r = .489$, $p < .01$ iaitu menunjukkan kaitan yang signifikan. Ini mungkin menandakan arah haluan iaitu penyumbangan simtom-simtom disleksia kepada masalah disiplin bertambah apabila pelajar melalui sistem persekolahan.

Dalam analisis varians, didapati bahawa tiada perbezaan signifikan dalam masalah disiplin dan kewujudan pelajar-pelajar dengan simtom-simtom disleksia di antara Melayu, Cina dan India. Walau bagaimanapun terdapat perbezaan dari segi status sosio-ekonomi. Dapatan kajian juga menunjukan antara lelaki dan perempuan tiada perbezaan signifikan dalam jumlah markah disleksia. Ini adalah konsisten dengan dapatan kajian menggunakan pengukuran berasaskan identifikasi oleh penyelidik dan tidak berasaskan identifikasi oleh guru di sekolah.

Kajian ini telah menyumbang kepada kewujudan peralatan diagnostik yang dapat digunakan di sekolah-sekolah untuk mengenal pasti pelajar-pelajar dengan simtom-simtom disleksia. Pelajar-pelajar yang dikesan dengan simtom-simtom ini seterusnya diberi pemulihan yang sesuai dan kaedah pengajaran yang berbeza.

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To my parents; for always being there for me.

*"For love exacts what is possible rather than what is due: what is due is sometimes impossible, as, for instance in the case of the honour due to parents; for no one could ever pay all his debt to them."*

*Aristotle, Nicomachean*

*Ethics, V III, 14,4*

To my siblings; for all the encouragement and moral support.

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To my husband; you are the cornerstone of my life.

To Dev; for expanding my heart and extending my horizons – this is for you.

I certify that an Examination Committee met on 3rd March 2004 to conduct the final examination of Sheila Christine Devaraj on her Master of Science thesis entitled "The Identification of Primary School Students with Symptoms of Dyslexia, Their Academic Achievements and Discipline problems" in accordance with University Pertanian Malaysia (Higher Degree) Act 1980 and the University Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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## DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

_____

**SHEILA CHRISTINE DEVARAJ**

Date:

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