BRAINCHILD
The Official Publication of HKCNDP

The Hong Kong Society of Child Neurology and Developmental Paediatrics
香港兒童腦科及體智發展學會

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SPECIAL ISSUE ON SPECIFIC LEARNING DISABILITIES

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The Hong Kong Society of Child Neurology and Developmental Paediatrics
Editorial: October 2008 Issue of Brainchild
"SLD Update in Hong Kong 2008"

Chok-wan CHAN

The current issue of Brainchild published by The Hong Kong Society of Child Neurology and Developmental Paediatrics (HKCNDP) is devoted to Specific Learning Disabilities (SLD)/Dyslexia as an interim report of the good work on the subject by professionals in Hong Kong. It contains the important documents on SLD published by our Society namely, the HKCNDP Position Paper 1999 (both the English and Chinese versions), the HKCNDP Forum and Position Paper 2005, and The Use of Word Processing by Students with SLD as an Accommodation in Open Examination (newly prepared document by Dr. Catherine Lam to the Hong Kong Examination and Assessment Authority on request). Included inside are also Proceedings of the Hong Kong Summit on SLD 2007, Mathematic Disorder and Local Scene on SLD in Hong Kong 2008. Thanks to the dedicated effort of Dr. Catherine Lam and all authors, the articles covers important milestones of local work in SLD and offer invaluable reference for readers interested in SLD in the Chinese Speaking Region which renders this Issue of Brainchild a classical book for book shelves of all professionals.

Despite the terms Specific Learning Disabilities (SLD) and Dyslexia having been known to Hong Kong for over five decades, they remain a mystery to most professionals in the region, seeing this as a problem of letter mirror-reversal. Over the past ten years, through the enthusiastic efforts of the Hong Kong Society of Child Neurology and Developmental Paediatrics, a series of professional activities on the subject including the Workshop on "SLD: Setting the Scene in Hong Kong" in November 1998, the Workshop on "SLD 1999: The Way Ahead" in March 1999, the Annual Scientific Meeting on Developmental Dyslexia in December 2002 and others were organized through which professional attention was attracted to the subject. These resulted in significant local progress in the understanding of the problem: that SLD and Dyslexia do exist in Hong Kong in the Chinese race and language, that through "The Resolutions from the Workshop 1999" an agreed definition on SLD by all professionals from intersectoral and multidisciplinary sources was produced (an innovative achievement of Hong Kong professionals and the first of its kind in the world even up to this date), and that serious and responsible attitudes as well as a transdisciplinary approach are essential for tackling the disabilities. Professionals also started to accept SLD as a constitutional and heterogeneous group consisting of four major disabilities, namely developmental dyslexia (dyslexia), specific language impairment (SLI), specific disability in mathematics (Math-LD) and developmental coordination disorder (DCD). Dyslexia occurs in 80% of affected subjects and individuals with SLD can have one or more disabilities in combination. This obviously creates lots of confusion for the novice. Amongst all, dyslexia has been comprehensively studied with strong evidence showing this being a genetic disease with foci at the DYX1C1 on 15q21 (Wigg 2004) and KIAA0319 on 6p (Cope 2005); both are responsible for neuronal migration occurring before 20-week gestation. The disability is thus congenital in origin and occurs prenatally.

With advancement in our understanding of the neurobiological bases, clinical features and evidence-supported interventions for developmental dyslexia, it is imperative that services for and interests of affected individuals are informed accordingly. Rights are embodied under the United Nations Charter for Children's Rights in 1989 and the Disabilities Discrimination Ordinance (DDO) in Hong Kong since 1995. In order to achieve these, we need to have alignment of definitions among professionals, accurate identification and diagnosis through validated screening and assessment tools and the work of integrated transdisciplinary teams, as well as accountable management plans. In line with these, there must be parents who understand their children's condition and needs, school teachers who have appropriate preparation and ongoing in-service training, enlightened education administrators, as well as widespread public awareness and acceptance of the disabilities. Adverse complications associated with undiagnosed or improperly managed children with Dyslexia include school failure and drop out, eroded self esteem, juvenile delinquency, substance abuse, and a future life of unemployment and underachievement. Effective legislation and government policies, plus close partnerships among professionals, stakeholders and the public are foundations for success.

On looking back over the past decade, there were several significant milestones for success of work on SLD in Hong Kong. These include the formation of the Working Party on SLD by the HKCNDP in 1997 and the alignment of definition for SLD by multidisciplinary professionals in 1999. Coaching and guidance from visits contributed by world experts on the subject including Professor Leong Chi Kan (Educational Psychologist from Canada), Professor Drake Duane (Child Neurologist from USA) and Professor Albert Galaburda (Neurologist from Harvard Medical school, USA) over the period from 1999 to 2001 converted local professionals via knowledge, research, clinical experience and expertise through evidence-based approach. The International Conference on Dyslexia in Children using the Chinese Language 2002 for the first time affirmed beyond doubt that dyslexia does exist in the Chinese Language. The contemplated legal actions against the government by parents of children with SLD in 2003 provided momentum for actions. Furthermore, the inclusion of SLD as members of the Rehabilitation Programme Planning (RPP) under the Rehabilitation Advisory Council in 2006 represented official recognition of the Government of the existence of SLD as a disability. Such recognition enables children with these life-long constitutional disabilities to have access to orthodox management including remediation, compensation, accommodation and resources support at school, in the family and within the community. This also helps individuals with dyslexia to adapt to learning, socialization and career fulfillment during adulthood. The final catalysts for the nowadays achievements depends on the launching of the Position Paper for Future Direction of SLD in Hong Kong 2006 and the direct investigations of the Ombudsmen on assessment and services for SLD in Hong Kong in 2007.

Modern child health covers medical, educational and social sectors. Admittedly SLD especially dyslexia is a major educational problem. It however also involves domains in developmental paediatrics (developmental behavioural neurology) and public health. It thus behoves that paediatricians, being champion in child health and being specialized in the understanding of children's needs, are in the best position to play the vital roles as primary care health workers at community level for early identification, as members of the transdisciplinary team for assessment

and for formulation of the individualized educational programme (IEP), and as professionals in coordinating and evaluating the effectiveness of the IEP. Above all, the paediatricians should always play the key role as child advocates for our children and our children with special needs (which in this case is SLD). It is thus imperative that paediatricians of the 21st century should equip themselves with the most up-to-date knowledge and information on the subject so that they can provide timely and accurate counseling and support to individuals with SLD and their families.

Over the years we have successfully convinced professional in Hong Kong about magnitude of the problems for dyslexia. We are very encouraged to witness the Health and Food Bureau (HFB) and the Education Bureau (EdB) of the Hong Kong SAR Government have taken up enlightened attitude towards our children with dyslexia and are also impressed by their willingness to devote resources for this good cause. These come from the immense contributions of Dr. York Chow (Secretary for Health and Food), Mrs. Betty Ip (Deputy Permanent Secretary for the Education Bureau) and others. We applaud them for their benevolence to our children. We are also pleased to witness accommodation being currently provided for these children at high stake open examinations by the Hong Kong Examination and Assessment Authority (HKEAA). Despite these encouraging progresses, we are still facing problems of insufficient teacher expertise on the subject, education at tertiary institutions and job opportunities in the community as well as concept of "equality" amongst parents from non-SLD parents. While we need to provide appropriate measures and resources to help children with SLD overcoming their disabilities, it is even more important that we should focus on their strength which are well known in many areas such as fine arts, sports, mechanics, designs, creative and innovative domains as well as conceptual mathematics and endeavour to provide optimum opportunities for them to be trained in their talented areas. This will ultimately build up their future career in life!

In order to expedite good results for good accommodation we need to have effective, efficient and quality screening and assessment services as well formative accommodation data at school. At present the bottle-neck seems to occur at the levels of assessments and accommodation at school with good Individualized Educational Programmes (IEP). We should endeavour to find means to tackle these hurdles. The former might be partially solved by collateral quality assessment services accredited by Non-governmental Organizations (NGO) at cost affordable by parents and the latter by re-arrangement of school setups with small class teaching and resource support under the supervision of experienced educational psychologists. With the joint efforts of trans-sectoral and transdisciplianry professionals, the future for our children with SLD/dyslexia should be promising and we should be able to provide an optimal environment for them to grow, learn and adapt into adulthood so that they can be useful members of our future community. "Healthy children for healthy world"!

Dr. Chok-wan CHAN
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President, The HK Society of Child Neurology & Developmental Paediatrics (HKCNDP)

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Hong Kong Summit on Specific Learning Disabilities November 2007

The Hong Kong Society of Child Neurology & Developmental Paediatarics

Catherine CC LAM

SLD is a group of conditions, including developmental dyslexia, mathematics learning disorder, specific language impairment and developmental coordination disorder, that fall into the territories of multiple professions: the neurosciences, medicine, psychology, special education and educational administration, and allied health fields. The Hong Kong Society of Child Neurology and Developmental Paediatrics (HKCNDP) has been actively involved in the work on Specific Learning Disabilities (SLD) for over a decade. Activities ranged from local seminars and workshops, international conferences, direct involvement in, or advocacy for research projects, input on service delivery logistics, media activities for promoting public awareness, and participation in policy making processes.

Positive changes on the subject witnessed over the past decade have been nothing short of phenomenal. From an era when developmental dyslexia was all but unknown to the public, considered by many as dubious in its existence in the Chinese population, and seriously in need of specific services, to today's general awareness, numerous ongoing research projects and teacher training programmes, developments in examination access arrangements and post secondary learning opportunities, and related policy changes. Meanwhile, private organizations targeting children with SLD and their families have proliferated, where programmes offered range from evidence based to theoretically untenable and costly. Much has been achieved, yet much still needs to be done.

With the above developments noted and joint wisdom for future planning needed, a Summit on SLD was organized by HKCNDP in November 2007. Keyplayers and stakeholders on the subject in Hong Kong were invited to participate as speakers, respondents, exhibiters and conference delegates. A summary report of this milestone meeting has been produced by HKCNDP working group, to be published in this issue of the Brainchild. Additionally, an editorial and five full papers from this forum's speakers have been published in the Hong Kong Journal of Paediatrics earlier this year. It is hoped that paediatric and other colleagues will benefit from these publications. Through their understanding on the condition, and timely identification and appropriate management for these children in their practice, they could be making far reaching life differences.

The Hong Kong Society of

Child Neurology and Developmental Paediatrics

香港兒童腦科及體智發展學會

HKCNDP Specific Learning Disabilities Summit

19 November 2007

Queen Eilzabeth Hospital,M Ground Lecture Theatre

9:00 p.m. **Registration**

9:15 a.m. **Developments in services for Specific Learning Disabilities in Hong Kong**

9:15 – 9: 30	CHAN Chok Wan	President, HKCNDP	Overview of SLD developments in last decade in HK
9:30 – 9:50	Doris J. JOHNSON	Professor Emeritus, Department of Communication Sciences and Disorders, Northwesterny, U.S.A.	Dyslexia and related Disorders in the U.S.: Issues in assessment and intervention.
9:50 –10:10	Fanny Kit Fong, LAM	PAS(SAS)School Administration and Support Division, Education Bureau	School systems to support students with SLD
10:10 – 10:30	Shirley Sze Lee, LEUNG	Principal dical Officer, Family Health Service, Department of Health	Developmental surveillance scheme for preschool children
10:30 – 10:50	Annie HO	Senior Assistant Executive Director, Vocational Training Council	Vocational education and training opportunities for students with SLD
11:20 – 11:40	CHEUNG Wing Ming	Deputy Secretary General, Hong Kong Examinations and Assessment Authority	Public examinations for students with SLD
11:40 – 12:00	Ferrick Chung Man CHU	Head, Policy and Research, Equal Opportunities Commission	Implications of inclusion of SLD as category of disability in Hong Kong rehabilitation policy
12:00 – 12:20	Bonny WONG	Head of Charities, The Hong Kong Jockey Club	The Hong Kong Jockey Club's support of SLD development in Hong Kong
12:20 – 12:35	Iris KEUNG	Chairperson, Hong Kong Association for Specific Learning Disabilities	Public awareness, community services and parent support

12:35 p.m. **Open Discussion**

2:00 p.m. **Academic and applied perspectives**

2:00 – 2:20	Doris J. JOHNSON	Professor Emeritus, Department of Communication Sciences and Disorders, Northwestern University, U.S.A.	Future directions in research on developmental dyslexia and related learning disorders
2:20 – 2:50	LEONG Che Kan HO Man Koon	Professor Emeritus, Dept of Educational Psychology and Special Education, University of Saskachewan, Canada & Hon. Professor, Dept. of Educational Psychology, The Chinese University of Hong Kong Associate Professor, Faculty of Education, The Chinese University of Hong Kong	Secondary school screening for Chinese written language impairment: Theoretical underpinnings and application
2:50 – 3:10	CHENG Pui Wan	Associate Professor, Department of Educational Psychology, The Chinese University of Hong Kong	Teacher preparation

3:30 p.m. **Academic and applied perspectives**

3:30 – 3:50	May Ching King CHAN	Educational Psychologist, Society of Boys' Centres	Curriculum issues
3:50 – 4:10	LEE Suk Han	Educational Psychologist, Society of Boys' Centres	Assessment and school support
4:10 – 4:30	Connie Suk Han HO	Professor, Department of Psychology, The University of Hong Kong	Understanding reading disability in Chinese: From basic research to intervention

4:30 - 5:30 p.m **Forum discussion**

Invited Participants

Speakers and guests from respective organizations
HKCNDP members
Non-government organizations providing services for children with SLD in Hong Kong
Academic and professional colleagues in related fields
Officials from government and public bodies
Parent group representatives
Legislative council members

Report on the Hong Kong Specific Learning Disabilities Summit 2007

Organized by The Hong Kong Society of Child Neurology and Developmental Paediatrics

Date: 19 November 2007,

Time: 08:45-17.30

Venue: Lecture Theatre, G/F, Block M, Queen Elizabeth Hospital

Introduction

The long awaited Hong Kong Specific Learning Disabilities(SLD) Summit 2007 has fully realized the concept of multidisciplinary collaboration through fifteen lectures, given by prominent overseas speakers, Professor Doris Johnson and Professor Leong Che Kan, senior government officials heads of Hong Kong's statutory bodies, local academics, as well as heads of charities, non-government organizations and parent support groups. The Summit attracted such overwhelming demand on registration that it had to be simultaneously teleconferenced to a satellite room in M Block of Queen Elizabeth Hospital and the Lecture Theatre of Tseung Kwan O Hospital to accommodate all delegates.

Programme

Developments in Services for Specific Learning Disabilities in Hong Kong

Session 1: Chairperson: Professor Leong Che-kan

Overview of SLD Developments in the Last Decade in Hong Kong

Chan Chok Wan (President, HKCNDP)

Dr Chan welcomed all speakers and delegates to the second Summit of Specific Learning Disabilities and reminded us on the first summit on 26 October 2002. To set the stage, objectives of this summit were defined. These included identifying areas for improvement in service and research on SLD in Hong Kong and to seek effective measures for collaborative actions ahead..

Dr Chan highlighted the evolution of SLD in Hong Kong in the past decades. In the early 1990's, SLD was a largely unknown condition with paucity of local statistics and public awareness. Remarkable promotion of the subject was gained through formation of the HKCNDP working group on SLD in 1996, with its organization of scientific meetings and official forums, culminating with the 2002 International Conference on Dyslexia. The inauguration of the Hong Kong Association of Specific Learning Disabilities in 1998 also provided essential momentum to public education and policy changes. In 2006, HKCNDP produced a Position Paper on SLD through a meeting with invited experts in the field, and the Paper was circulated to relevant government

bureau and organization heads for their reference. In 2007 with the 2007 Programme Plan Review and the support of The Secretary of Health, Welfare and Food Bureau Dr York Chow, SLD was officially included in the 2007 Rehabilitation Programme Plan as a category of disability.

The Working Party on SLD in Hong Kong was anchored on the essential academic advice and support of the Chairman of Scientific Committee Professor Leong Che Kan, to whom Dr Chan presented a plaque of certification of appreciation on this occasion. Professor Connie Ho and the Education Bureau were also appreciated for their contribution to research on SLD in Hong Kong. Over the years, HKCNDP also promoted public awareness through advocacy, in collaboration with parent groups, legislators, the Department of Health, Education Bureau, and other non-government organizations.

Dr Chan summarized other major milestones in development of SLD in Hong Kong, including the inclusion of SLD in 2000 Code of Practice on Education of the Equal Opportunity Committee, under the Disabilities Discrimination Ordinance (DDO), research data on local prevalence of SLD, the Read and Write Project sponsored by Jockey Club and the recognition of SLD by higher education institutions.

However, development of SLD is still confronted by problems including inadequate teacher expertise due to lack of training, suboptimal system for access arrangements in high stakes open examinations, limited resource support at school and inappropriate use of funding at schools with lack of transparency. Hong Kong is still deficient in public awareness, public concept of the meaning of equality for individuals with disabilities and lack of specific legislation related to education and employment,, identification of strengths of SLD students, and tertiary education and career opportunities.

Dyslexia and Related Disorders in the United States: Issues in Assessment and Intervention

Doris Johnson (Professor Emeritus, Department of Communication Sciences and Disorders, Northwestern University, USA)

Professor Johnson presented the historical perspectives of Learning Disabilities with reference to the USA Legal definition in 1977, the working definition by the Orton Dyslexia Society research committee in 1994, and the DSM IV criteria in 1994 which focused on decoding, accuracy, reading comprehension and interference with academic achievement or activities of daily living.

The dictionary has two basic definitions for reading. The first states that "reading is the process of converting print to speech" whereas the second is "apprehending meaning from print." Thus, one's definition of reading influences the selection of tests, the interpretation of results, and plans for intervention. The first definition is related primarily to word recognition and decoding, much like the research definition of dyslexia, whereas the second focuses on meaning which should be the goal of all reading. While word recognition is often the best predictor of reading comprehension in the early grades, this is not the case across the age range. Chall, Jacobs, and Baldwin (1990) reported that children in the fifth and sixth grades (about 10-12 years of age) use context and background knowledge to predict words in context. Thus, their reading of single

words is sometimes lower than contextual reading. Many adolescents and adults have significant reading comprehension problems without word recognition difficulty. Both should be considered in the evaluation and intervention.

Dyslexia should be evaluated in the context of the breadth of the problem, the number of symbol systems being involved such as mathematics and music, and the integration of multiple rules of oral language, justifying dyslexia as a communication disorder. Professor Johnson shared with participants the flow of diagnostic intervention process at Northwestern University. It starts from screening and/or referral, which is immediately followed by pre-referral procedures while the child is waiting for a comprehensive study. Meanwhile, diagnostic teaching, accommodation and remediation take place at school, proceeding in parallel with the referral processes.

Finally Professor Johnson suggested plasticity of the brain as a direction for future research on dyslexia.

School systems to support students with SLD

Mrs. Fanny LAM (PAS(SAS), School Administration and Support Division, Education Bureau)

Mrs. Lam summarized the needs of students with SLD, which included good teaching in multisensory approach; experience of success; special exam arrangement and acceptance by teachers, parents and peers. In response to these needs, EDB supports the school to build up an infrastructure to deliver intervention through a whole school approach. In terms of teacher training, EDB has implemented a 3-level teacher professional development framework, which includes a 30-hour basic course, 90-hour advanced course and thematic courses on SLD. In five years' time, 10% of teachers per school are anticipated to have completed level 1, at least three teachers per school will complete level 2 and at least one teacher of Chinese and English subject each will have completed level 3.

For professional development, EDB provides resources for construction of assessment tools including various diagnostic tools and behavioural checklists. EDB also supports schools with additional resources through the New Funding Mode, Intensive Remedial Teaching Program and employing additional teachers for special programs. In terms of professional support to schools, designated Special Education Support Officers (SESO) are assigned to each school, while specialists including Educational Psychologists and Speech Therapists deliver school-based support. EDB also promotes networking of schools for sharing of good practices.

To conclude, Mrs. Lam emphasized the importance of multidisciplinary collaboration. She reiterated that SLD should be perceived as a learning difference rather than a disability, and schools should focus on inclusion, differentiation, and learning to meet these students' different needs.

Developmental Surveillance Scheme for Preschool Children

Shirley Leung (Principal Medical Officer, Family Health Service, Department of Health)

Dr Leung introduced the Developmental Surveillance Scheme (DSS), a component of the Integrated Child Health and Development Programme (0-5y). Early identification of health and developmental problems facilitates early intervention, which might improve the child and family outcome. The DSS aimed at enhancing parental awareness, empowering them and addressing their concerns, achieving timely identification of problems as well as tracking developmental profiles of children. To ensure a good outcome, quality assurance through training of doctors and nurses and maintenance programmes were crucial.

Service statistics in 2006 from eighteen Maternal and Child Health Centres (MCHCs), including referral reasons to the Child Assessment Service for comprehensive assessment and diagnosis after referral were presented. In order to fill in the service gaps and enhance coverage of the older age group (preschool children), the Family Health Service also participated in the Comprehensive Child Development Service (CCDS) of the HWFB (subsequently moved to LWB). The CCDS enlisted preschool as a platform to identify and refer young children with developmental problems to MCHCs.

Dr Leung reflected that preschool workers found a lack of support to handle preschool children with SLD/learning problems. She urged for more resources by the education authorities to support children with learning and early reading problems in preschools.

Vocational Education and Training Opportunities for students with SLD

Ms Annie Ho (Senior Assistant Executive Director, Vocational Training Council)

Ms Ho shared that the Vocational Training Council (VTC), a major vocational education and training provider in Hong Kong, was currently at the initial stage of understanding SLD and expressed concern on Hong Kong's lack of support for students with SLD to pursue tertiary education. Whilst VTC provides a wide variety of potential courses for students with SLD to select from, a large number of teachers need to be equipped with good knowledge of SLD and related training to effectively support these students if admitted to the course, and this is a big challenge for the VTC.

At VTC, support service for students with SLD started as special admission procedures for applicants with special education needs (SEN). Instead of going through competitive entry, students with SEN could choose to be interviewed by a special panel, which may give direct offers to these students if minimum entry requirements are met and that the panel are satisfied that the student is likely to complete the course successfully. After admission, students are provided with technical aid if needed, counseling by Student Affairs Office, and learning support by subject teachers as far as possible.

The VTC is dedicated to providing training on SLD to staff and to promote sharing of good practices. Currently there are 27 full time students with SLD scattered in different institutions under the VTC. This "scattering" presents another challenge to VTC.

The obstacles in supporting students with SLD include a steep learning curve for VTC staff in understanding the needs of students; difficulty in verifying SLD during admission, and uncertainty in number of SLD students to be admitted in the future. Despite the challenges, Ms Ho was positive that the VTC would continue to make improvements in helping realize the potential of every student.

Open Audience Discussion

The Chairman acknowledged the continuous support from Legislator, Mr Cheung Chiu Hung, and welcomed him to this meeting. Mr Cheung expressed his concern in the implementation of theoretical models of tiered-systems on intervention, as in reality a child's difficulty can hardly be clearly stratified into tiers, especially at the beginning. He warned against complacency on the inclusion of dyslexia and ADHD into the Rehabilitation Program Plan as he doubted the tangible support that government could provide to support children with Special Educational Needs (SEN). He also demanded a close monitoring on the effect of the upcoming 334-curriculum for secondary students with SEN.

Session II- Chairperson: Dr Chan Chok Wan

Public examinations for students with SLD

Francis Cheung Wing Ming (Secretary General, Hong Kong Examinations and Assessment Authority)

The HKEAA strives to provide a fair assessment for all so that individual students' attainment could be appropriately certified. In order for Hong Kong's qualifications to be international recognised, procedures and regulations have to be clearly stipulated to ensure fairness and maintenance of reasonable standards. Currently special accommodations available to candidates with SLD include but not limited to extended examination time, special format of question papers and the usage of computers for candidates with illegible handwriting or extremely slow handwriting.

In providing these accommodations, major difficulties encountered by HKEAA were the handling of students with marginal dyslexia and of candidates without a definitive diagnosis, implying lack of accommodation in school internal examinations all along. There is often lack of awareness of schools/ parents on SLD, resulting in delayed reporting of SLD to school until close to the date of the public examinations.

The HKEAA also encountered practical problems during application processing, including insufficient supporting documents from schools and insufficient information from psychologists, which may stem from inadequacies of instruments to diagnose dyslexia at higher grades and adulthood.

Dr Cheung anticipated a huge number of undiagnosed students, given the reported research incidence versus the fact that there were only 48 applicants for accommodations in public examinations for SLD in 2007. The expected increase in number of students who will apply for accommodations in the future will impose big resource implications for the HKEAA.

To conclude, Dr Cheung urged for better communication with stakeholders, especially with parents, in order that examination accommodations may match international practices. He also suggested that research be done on stakeholders' view on existing accommodations and respective effectiveness for SLD candidates.

 # Feedback by the Chairman

The chairman concurred with Dr Cheung's comments on the problems of uncertain diagnoses, due in part to insensitive tools, in part to professionals who did not have the confidence to make definitive diagnosis, and in part to unclear management plans for these students by various parties. He urged for improvement in these areas.

Implications of inclusion of SLD as category of disability in Hong Kong Rehabilitation Policy

Ferrick Chu (Head, Policy and Research, Equal Opportunities Commission)

Dr Chu introduced relevant instruments for enforcing anti-discrimination, namely the Disability Discrimination Ordinance in Hong Kong and Convention on the Rights of the Child (1989) and Convention on the Rights of Persons with Disabilities. Under the DDO, it is unlawful to vilify a person with a disability in public, or discriminate against or harass a person on the ground of disability in areas of activities, including education

The EOC's obligations for students with SLD include elimination of discrimination, harassment and vilification, and assurance of provision of reasonable accommodations and individual support.

The EOC consolidated the obligations through inclusion of SLD as category of disability. Thereafter, in the field of education, it advocates for provision of integrated education program, involvement of stakeholders in the formulation of relevant public policies in education, and resource allocation. In the field of rehabilitation, it advocates for preschool training and vocational rehabilitation. The EOC is active in staff training and public education on understanding of SLD.

However the EOC is of the opinion that Hong Kong faces challenges in this area, including the exceedingly large number of students being unidentified, the need for high quality specialized instruction in a regular school, timely decision regarding eligibility and service need for individual student, and inadequate awareness in government bodies. Dr Chu envisioned that further efforts should be devoted on early identification by further research into screening tools; comprehensive assessment achieved by interdisciplinary collaboration; pre- and in-service training for teacher on evidence based practices and intervention techniques. He was concerned that SLD students were underrepresented in tertiary education and therefore future direction

should focus on higher standard examination accommodations to allow SLD students to explore higher education opportunities. Finally he recommended inclusion of stakeholders' involvement in devising policy and service provisions for SLD in Hong Kong.

The Hong Kong Jockey Club's support of SLD development in HK

Ms Bonny Wong (Head of charities, The Hong Kong Jockey Club)

The Hong Kong Jockey Club is a non-profit organization. It supports a diverse range of projects, programmes and recipients with the mission to improve the quality of life of the people of Hong Kong. Ms Wong shared her personal inspiration and reflections in understanding SLD. She expressed that much more public education and awareness are needed. In this regard, she informed that Mr Lo Kwun-ting, noted singer and song-writer, had composed a song for the Read and Write Project. Ms Wong took the opportunity to thank Prof Connie Ho for her involvement in the Read and Write Project.

Public awareness, community services & parents support

Ms Iris Keung (Chairperson, Hong Kong Association for Specific Learning Disabilities)

The Hong Kong Association for Specific Learning Disabilities (HKASLD) emerged as a parent sharing group in Tuen Mun in the late -1900's, and was officially inaugurated HKASLD in 1998. It had its first office space at the shared Self Help Development Centre in 2002, and its own office with the opening of Wong Tai Sin centre in 2005. Through years of hard work, the HKASLD contributed to many major breakthroughs in the field of SLD, including inclusion of SLD in the EOC's Code of Practice in Education, specific attention to accommodations by HK's exam and assessment authority in 2002/2003, production of teaching materials by EDB, and support and assessment guidelines to primary school in 2002-2004, and inclusion of SLD in the Rehabilitation Program Plan in 2007.

The HKASLD aims at facilitating self help and mutual aid among parents while promoting understanding and acceptance of SLD among general public. They also encourage research, and advocate for a better learning environment in Hong Kong. These are achieved through public education activities, collaboration with legislators, governmental departments and mass media.

Ms Keung also highlighted results of the recent SLD family research : parents are concerned about long waiting time for assessment, and the significant psychological stress of parents, where half suffered from insomnia or depression and one third had received professional counseling. Parental expectations from services on SLD include effective teaching, accommodation for daily school work and during examination, psychological counseling and financial subsidies for supporting these children's special needs.

Moreover Ms Keung felt that the current problems in service provision of SLDs stemmed from the misunderstanding that money could solve all problems. For example, out-sourced education psychology service could not replace support from school teachers. The HKASLD was also concerned about quality assurance of interventions provided by NGOs. There was

also a lack of support for behavioral problems in secondary school students with SLD.

For future directions, extension of support and attention to secondary schools, vocational training institutes universities and employment should be made. Parents strongly demanded the development of systematic and effective Chinese teaching methods and improvement in professional training for teachers, social workers and psychologists, especially on the standard of assessment.

 # Feedback by the Chairman

The message brought out by Ms Keung was powerful. First, inclusion of SLD in RPP is not just a rosy picture but it signifies the beginning of a battle. Second, funding allocation should be more transparent and ought to be audited. Finally, advocacy should involve both a top-down and bottom-up approach and incorporate consumers' needs.

Discussion

Dr Chan invited dignitaries who have been instrumental in the work of SLD in Hong Kong for further discussion.

1. Mr Raymond Tang, Chairman, EOC

SLD is a relatively new topic in the study of societal justice. There is information gap in the society and the privacy issues may lead to disruptions in flow of students' information in education setting.

2. Ms Alice Tai, Ombudsman

Numerous complaints were received from parents on coordination and adequacy of policy and service for students with SLD, which inspired her to start a direct investigation on SLD service. The Ombudsman's Report on SLD will serve to educate the public on SLD and they will continue to work on this subject.

3. Dr Henrietta Ip, Paediatrician, Chairman, Hong Kong Childhealth Foundation

Dyslexics are talented in different ways. Assessment for SLD in adults should be developed. It is important to ascertain the prevalence of dyslexia in inmates of prisons.

Academic & Applied Perspectives

Session III-Chairperson: Dr Catherine Lam

Future directions in research on developmental dyslexia and related learning disorders

Doris Johnson (Professor Emeritus, Department of Communication Sciences and Disorders, Northwestern University, USA)

Professor Johnson conceptualized dyslexia as a condition across the life span. In early childhood, early identification may be targeted at the lower socioeconomic class, and efforts should be made to differentiate between poor decoders and poor comprehenders. According to evidence from longitudinal studies, effective intervention has to fulfill the criteria of being intensive, early and explicit. Intensive programs must also last long enough to make a difference. Research has yet to be done on the most effective mode of teaching, and to perform outcome evaluations of inclusion education versus special school placement for students with dyslexia. Professor Johnson remarked that the acquisition of content knowledge in an older child, who missed the chance to learn through print, should not be overlooked. Finally the functional impairment in striving for independence for adults with dyslexia should also be considered.

In provision of service, the issues of who and what degree of severity need special intervention need to be addressed. Intervention should be appraised in the context of the breadth of domains affected and the depth of the severity of problem in each domain, as a problem can be specific or global. In the U.S., intervention includes accommodation, remediation, and tutoring in content areas. However, effectiveness, duration, and long term consequences of the available accommodation are yet to be evaluated.

Professor Johnson elaborated on the cognitive underpinnings of learning, which include perception, working memory, memory, processing speed and linguistic processing. Higher level processes like reasoning, hypothesis testing, inferencing and monitoring are also involved. Furthermore nonlinguistic factors including motivation, self-efficacy, goal setting, risk taking and resilience also contribute to effective learning.

Professor Johnson advised that teacher effectiveness in intervention should be enhanced by pre-professional preparation and mentoring/coaching. Research on intervention should focus on theoretical background; content and curriculum; translation of findings for teacher and ethical issues. Therefore she proposed multi-disciplinary research on etiology, cross-culture studies, bilingualism, teacher-child interaction, brain-behaviour correlation, subgrouping (with or without oral language impairment) of dyslexia, neural plasticity and gender effect. She specifically advocated for collaboration with parent groups and that between professionals from the fields of medicine, psychology and education, academics, private agencies, foundations and philantropic groups.

Secondary school screening for Chinese written language impairment: theoretical underpinnings & application

Developing a battery of test of Chinese reading and writing for secondary one to secondary five students

HO Man Koon (Associate Professor, Faculty of Education, The Chinese University of Hong Kong)

Professor Ho introduced the test tool for Chinese reading and writing for Hong Kong secondary school students, with the objective of differentiating Chinese language ability of students from Form 1 to Form 5. The theoretical background of language comprehension (decoding, meaning accessing, sentence integration) and writing (planning, organizing, translating, reviewing) was explained.

He elaborated on the content of the Instrument which is now known as the Hong Kong Chinese Language Abilities Assessment for Secondary School Students (CLAAS). There are nine tasks, each with its sub-parts:

1. Essay writing,
2. Morphological processing,
3. Character and word correction,
4. Segmentation of text,
5. Text comprehension,
6. Fluency in text reading,
7. Copying of words and texts,
8. Dictation,
9. Reading aloud.

The test is favorably user-friendly as the same set of test materials can be used on students in Form 1 through Form 5. The test was introduced to secondary Chinese teachers in two seminars, one in November, 2007 and the other in April, 2008. For details of the battery please contact Ms. Lee Suk Han of the Education Bureau. The papers by Leong and Ho (2008a, 2008b) provide the theoretical framework and initial results.

Professor Ho concluded that the test is a scientific and simple way to screen the students with low achievement in Chinese language. He suggested that secondary teachers should refer students scoring one standard deviation below the mean of specific tasks or the battery as whole for further assessment.

Professor LEONG Che Kan (Professor Emeritus, Department of Educational Psychology & Special Education, University of Saskatchewan, Canada)

Dyslexia should be studied in the context of components, including text comprehension and lexical knowledge. Professor Leong referred to Perfetti's Blueprint of the Reader as a framework of reading and its difficulties. He explained the cross-linguistic differences between morphological processing and related domains in Chinese and English.

Professor Leong addressed the theoretical basis underlying each task in the screening test with reference to specific domains of Chinese language. He summarized the results of the Promax oblique factor analysis to show the structure of the battery and hierarchical multiple regression analyses to indicate its predictive power of overall internal school Chinese language performance.

Professor Leong recapitulated the changing situation of SLD in HK and commented on the way ahead. He referred to "The Hong Kong Developmental Screening System (0-5)", co-authored by Dr Chan Chok Wan, published in 1982, while congratulating the success of the developmental surveillance program of the Family Health Service. Professor Leong suggested to explore the strengths of children with SLD, especially their artistic talents, and to promote early reading, dialogic reading, aided reading, bedtime dialogic reading and life-long reading. Finally, he commended on the enthusiasm of the involved professionals in the field of SLD in Hong Kong.

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Teacher development for students with SpLD

Cheng Pui-wan (Associate Professor, Department of Educational Psychology, The Chinese University of Hong Kong)

Professor Cheng demonstrated the Teacher Development Program as a component of READ and WRITE Project, which aimed at training 5,000 teachers in 5 years, with 30 hours of professional development for Primary school Chinese teachers. Details of the program can be found in the website: http://www.fed.cuhk.edu.hk/~tdspld/content/index_e.phpProfessor Cheng explained the theoretical background of the training program from the perspectives of the developing child, specific cognitive impairments in language and reading development, and counseling. She is training teachers to provide intervention in three tiers: tier 1 refers to high quality classroom instruction and tier 2&3 refer to specialized instruction. She commented that intervention was only possible in schools with a culture of acceptance and collaboration.

The connection between oral language and reading should be introduced to teachers. Development of reading involves a child to getting from speech to print and acquisition of knowledge with print, which includes writing, reading comprehension, word decoding and reading fluency. As a child normally acquires vocabulary from speech development, metalinguistic awareness is needed for efficient reading. Children with dyslexia typically have problem with metalinguistic awareness and decoding. Therefore meaning and phonology serve as the link between orthography and speech, and good teaching should provide children with a robust foundation in speech and metalinguistic awareness, through increasing morphological and phonological awareness, before print is introduced.

Professor Cheng suggested a direction for future research: focusing on systematic evaluation of SLD at different developing stages of childhood, and the underlying deficits. Teachers definitely need more scaffolding and good examples, on top of the 30 hours of training. The training program is just the beginning of the story.

Session IV- Chairperson: Dr Philomena Tse

Curriculum issues

Ms May Chan (Educational Psychologist, Society of Boys' Centres)

Ms Chan presented a paradigm shift from remediation to response to intervention (RTI) in the field of learning disabilities. RTI is an approach used to identify SLD on the basis of student's response to instruction. Thus, early screening of the at-risks, effective instruction and progress monitoring are deemed important. She then presented the 3-Tier intervention model. In Tier 1, primary prevention is offered in terms of good quality class-wide teaching. Teachers should be proactive in screening out the 15-20% of children who are predisposed to dyslexia and need extra help to catch up with academic performance. Tier 2 intervention, with supplemental instruction (add-on) and small group teaching will then be provided to those at-risk students. Their learning progress is closely monitored. For those do not respond well to the Tier 2 intervention will further be provided a more intensive, add on and individualized support, that is Tier 3 intervention. Weekly or daily progress monitoring is needed to inform the effective of instructions, as well as the needs of the students.

To provide intervention, teachers should be equipped with basic skills of teaching English and Chinese and knowledge on the differences between the two languages. They also need to know that effective instructions for poor readers need to be explicit, cumulative, multisensory, sequential and incremental, systematic and evidence based. The big five in English literacy elements consist of phonemic awareness, phonic and word recognition, reading fluency, vocabulary building and reading comprehension. On the other hand, the important basic skills in Chinese language may include morphological awareness in oral language, vocabulary acquisition, syntax, reading comprehension, fluency and simple writing.

Ms Chan shared the Society of Boys' Centres' experience in July 2003-2005 using Supplemental Curriculum and Resource CD-ROM. She explained the curriculum framework at word, sentence, paragraph levels, and demonstrated some effective strategies in teaching Chinese Language essentials for Primary school dyslexic students. As part of the READ and WRITE Project, the Society of Boys' Centres will focus on designing a supplemental training package on Chinese Language for Junior Secondary school students. In addition, Ms Chan also emphasized the importance of progress monitoring, and suggested to develop more curriculum based measurements to better inform the student's response to instruction.

To conclude, Ms Chan appealed for better collaboration among professionals to establish a comprehensive and evidence-based curriculum.

Assessment and School support

Ms Lee Suk-han (Educational Psychologist, Education Bureau)

Ms Lee shared her experience on the importance of a holistic assessment rather than just focusing on scores. The new funding mode for schools is flexible and funding allocation is based on students' special needs rather than on diagnostic labels. To improve the quality of assessment, she advocated using the responsiveness to intervention approach, and linking assessment to school based support measures. Assessment should take into account the child's learning characteristics, the match between learning and teaching styles, and the learning environment.

Ms Lee shared that Educational Psychologists employ the Hong Kong Test of Specific Learning Difficulties- Primary (HKT-P) to assess students with SLD, and they combine information on areas of cognitive weakness to collateral evidence reported by the child, teacher, parents and the HKSpLD checklist to devise support measure. Support should be tailor made to solicit children's strengths when remediating their deficits.

Ms Lee illustrated multisensory intervention with videos of case example. She emphasized that school and home collaboration is important to eliminate stress and minimize difficulties, and to focus on strengths. To be successful in intervention, teachers should give student adequate time, provide scaffolding for children in learning new tasks, explicitly teach organizational skills and study skills, and give students experience of success.

Miss Lee explained the key components of the Whole School Approach in creating a supportive environment for students with special needs at school.

Understanding reading disability in Chinese: from basic research to intervention

Connie Ho (Professor, Department of Psychology, The University of Hong Kong)

Professor Ho advocated combining expertise in basic and applied research to accomplish evidence-based intervention. She addressed the characteristics of Chinese language and a model of Chinese word recognition. Her research in the field of SLD was highlighted, including the cognitive profile of Chinese dyslexia in HK, cross-regional comparison between the cognitive profiles of children in Beijing and Hong Kong, and research on the Specific Learning Disabilities Behaviour Checklist for preschool, primary school and adults. She is currently performing a research to develop a behavioural checklist for secondary school students. According to her research, prevalence rate of dyslexia in HK is around 10% of the school population, with 1.4% being severely affected.

Professor Ho also presented the major components of effective reading instruction in Chinese with reference to her own and others' research findings in Chinese. There was evidence to support effectiveness of tiered intervention program, including positive gain in words, in student performance in experimental and standardized literacy-related measures, and better placement outcome.

Concerning evidence-based intervention, the READ & WRITE Project was started in 2006 and had been focusing on development of Tier 1 curriculum in last year. Professor Ho shared her experience from studying three schools that joined the program in which Tier 1 was focused on oral language, word level and passage level processing in text. She demonstrated a video showing class observation of school-based curriculum support through the Tiered Intervention Model. Preliminary results showed that the three schools had significant increase in word reading in first term with more pervasive improvement in all components of outcome after second term.

Finally Professor Ho introduced her new research on twin studies in SLD and announced the recruitment of participants.

Discussion

Dr Chan concluded that the Summit is powerful and representative, being a result of contribution from all areas of disciplines in SLD management. Important messages from the Summit were summarized as follows:

1. SLD is a global problem for a child and therefore a multi-sectoral involvement is indicated and is critical for holistic management.
2. Development of assessment tool for older students after Form 3 should be pursued. Evaluation of inmates in prison for SLD could be considered.
3. Early diagnosis and early intervention should be consolidated as every minute in a child counts, especially in the first years of reading. Specific Language Impairment, as an early indicator of SLD, should be identified in preschool children.
4. Quality assurance of intervention programs implemented by NGOs and private sectors should be performed to ensure evidence based practice.
5. As an obligation to utilize resource judiciously and effectively, professionals must seek to promote the standard of research.

Specific Learning Disabilities and Dyslexia in Hong Kong
Position Paper on Future Directions

This paper is based on the Forum on Specific Learning Disabilities (SLD) organized by the Hong Kong Society of Child Neurology & Developmental Paediatrics on 28th July 2005 to arrive at a position paper on future directions for Specific Learning Disabilities and Dyslexia in Hong Kong

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I. Background

Specific Learning Disabilities (SLD)(特殊學習障礙) is often referred to as the hidden handicap, with dyslexia(讀寫障礙)being present in the great majority of individuals in this group of disorders. Persons with dyslexia are characterized by severe deficits in reading, spelling and writing to dictation. The condition is disabling in that affected individuals' deficiencies in literacy, if not habilitated early and effectively, will lead directly and through secondary effects and emotional complications to severe impairments in learning, daily activities and contribution to society. It is today widely considered as a public health issue with marked educational and social dimensions, requiring multi-disciplinary and cross-sectoral attention.

SLD and dyslexia have received increasing professional and public awareness in Hong Kong over the past decade. Systematic measures to identify, assess and support affected individuals in education and the community are being continually developed. At the 2005-06 review of the Rehabilitation Programme Plan (RPP), the RPP Working Group and Rehabilitation Advisory Committee resolved that SLD is a disabling condition that should be added into RPP as a category of disability.

II. Definition

SLD is a term that refers to a group of disorders manifested as significant difficulties in the acquisition and use of listening, speaking, reading, writing or mathematical abilities, despite access to conventional teaching. These disorders are intrinsic to the individual and neurobiological in origin, with onset in childhood and extending beyond it. Language processing difficulties distinguish SLD as a group.

SLD is not the direct result of sensory impairment, mental retardation, social and emotional disturbance or environmentalinfluences (e.g. cultural differences or insufficient / inappropriate instruction). Accompanying weaknesses may be identified in areas of speed of processing, working memory, phonological recoding, fine-grained auditory and/or visual processing, sequencing, organization, and motor coordination. Some individuals with SLD have outstanding skills. Some may have skills that are masked by their SLD, while other individuals may have strengths in aspects not affected by their SLD.

Developmental Dyslexia is one of the specific learning disabilities, characterized by difficulties with accurate and fluent word recognition, word reading and writing to dictation or spelling. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and further acquisition of knowledge through print. Unexpected discrepancy exists between learning aptitude and achievement in school in one or more basic subject areas.

1. This operational definition was drafted jointly at the HK Society of Child Neurology & Developmental Paediatrics Forum on SLD on 28 July 2005, with academic and practicing representatives from medicine and allied health, education, psychology, social work, parent groups and administration (Appendix A). It is based on current knowledge of these conditions.

It is acknowledged that SLD may co-occur with other developmental disorders. Attention deficit / hyperactivity disorder (ADHD), with its own different neurological basis, diagnosis and treatment, is not a form of SLD, but may also occur in individuals with SLD.

Corresponding terminology for SLD in the International Statistical Classification of Diseases and Related Health Problems – Tenth Revision (ICD-10) is under the group "Specific Developmental Disorders of Scholastic Skills", as listed in Appendix A.

III. Prevalence

Data reported by the Hong Kong Specific Learning Difficulties Research Team (Chan, Ho, Tsang, Lee & Chung (under review))1 indicated that, based on a study at 27 schools in Hong Kong, Kowloon and the New Territories with the use of the Hong Kong Test of Specific Learning Difficulties in Reading and Writing (HKT-SpLD) (Ho CSH, Chan DWO, Tsang SM & Lee SH, 2000)2, the prevalence rate of specific learning difficulties in reading and writing (dyslexia) in Hong Kong is 9.7% to 12.6% with 6.2% to 8.7% mild cases, 2.2% to 2.3% moderate cases and 1.3% to 1.6% severe cases.

Figures on SLD cases reported by the Education & Manpower Bureau (EMB) were 461 in 2000-01, 948 in 2001-02, 980 in 2002-03, 922 in 2003-04 and 1,065 in 2004-05 respectively. A total of 4,376 students with SLD in all primary and secondary schools were identified within these past five years. While these figures may reflect the workload presented to EMB, they do not reflect how serious the Hong Kong situation is. Their distribution within schools of different academic achievement also varies significantly.

IV. Types of Services

Early Identification

With the aim of achieving early identification of varied needs of children so that appropriate services can be made available to them in a timely manner, an inter-sectoral community-based programme, the Comprehensive Child Development Service (0-5 years) will be launched (2005 Policy Address of the HKSAR Government)3. Needs of children at risk for SLD are expected to be included.

The Hong Kong Learning Behaviour Checklist for Preschool Children (Parent Version), a tool for parents to identify preschool children at risk for SLD, was introduced at the end of 2005 (Hong Kong SLD Research Team 2006)4. A screening instrument for preschool teachers to identify at risk children for follow up still needs to be developed. A teacher's checklist for identifying SLD students in secondary schools is being considered, and should be completed as soon as possible.

In 2000, The Hong Kong Specific Learning Difficulties Behaviour Checklist for Primary School Pupils (Hong Kong SLD Research Team 2000)5 was made available to schools to assist teachers in identifying students suspected to have specific learning disabilities; and from 2004 September, a new Primary One Checklist screening for Learning Abilities (EMB, 2004)6 was

launched, where Chinese, English, mathematics, social adaptation, verbal language and motor abilities of Primary One students can be checked to identify any learning problems and further educational needs. Teachers are expected to provide additional support to those identified as at risk, and to refer out those who are identified as having significant difficulties.

Assessment

Assessment of suspected SLD cases generally takes place within the educational setting after learning problems are noticed. EMB and outsourced educational psychology services help to provide diagnosis. Assessment for diagnosis is made by educational psychologists with standardized tools. Timely response to request for assessment is needed, with parents informed of the results and plans in order to maximize school-family cooperation.

Sometimes, cases may present to the health care sector, such as those where the underlying SLD is masked by other problems, like behavioural, emotional or other developmental and health problems. These children will be assessed by relevant professional disciplines, including clinical psychologists, from child assessment centres, certain hospital teams, non-government organisations (NGOs) and private settings. Follow up management of dyslexia itself remains within the school system, while other conditions diagnosed, such as attention deficit, motor coordination, hearing, visual and emotional problems, will be referred to respective service providers for treatment.

In Hong Kong, the HKT-SpLD was developed in 2000 for assessing primary school children up to ages 10½ years2. Further norming of three subtests of this HKT-SpLD for Primary 5 and Primary 6 students is being done, for these data to be included in the 2nd edition of the HKT-SpLD in 20067. A tool for assessing dyslexia in Secondary 1 to 3 is being developed by the Hong Kong Specific Learning Difficulties Research Team, and is expected to be published around the end of 20067. Reading achievement levels for grade and age are needed in Hong Kong to document baselines and monitor progress.

Education

Remediation and Accommodations

Students with SLD are educated in mainstream schools. Both direct remediation for dyslexia and accommodations in schools and examinations should be provided for these students.

Direct evidence-based remediation for dyslexia in adequate amount and with outcome measures is important. Promoting oral language skills and phonological / orthographic awareness skills through heightened reading and literacy programmes for at risk children is valuable. Teachers delivering these programmes should have a relevant language background, with training in dyslexia remediation for Chinese, English, and English as a Second Language (ESL). For secondary schools, the availability of special education needs coordinators (SENCO) with a strong language background is desirable. A differentiated curriculum may be required for some children. Strength discovery and development outside of the formal curriculum as well as portfolio building should be emphasized for these children.

The format for delivering the above curriculum and programmes may include pull-out teaching, co-teaching within the classroom and Individualised Education Plans (IEP). After school support programmes will also be valuable for those without adequate support at home.

Examination Accommodations

Many schools and parents are still unaware of the availability of accommodations for eligible students with dyslexia (at schools' internal examinations during Primary 5 and 6 for secondary school entrance placement, at the Hong Kong Certificate of Education Examination (HKCEE) and the Hong Kong Advanced Level Examination (HKALE). Applications by secondary schools on behalf of these students for open examination accommodations are still minimal compared with actual need. Effort is needed from EMB and the Hong Kong Examination and Assessment Authority (HKEAA) to promote awareness of such examination accommodations to school administrators, parents and students, and to ascertain compliance within schools. The range of accommodation measures that can be provided forstudents with SLD needs to be widened as indicated, including the use of computers or having questions read out and answers given orally.

School Support

Teachers' knowledge and skills in managing SLD are necessary prerequisites. At least one teacher with a special education background should be available in each school to support students with special education needs (SEN). EMB recommends an explicit school policy for delivering and monitoring quality, timeliness and outcome of services for all SEN students. Small classes are essential if adequate frontline teachers' participation in identification and remediation is to be provided. It is also felt that the Government could encourage and reward dyslexia-friendly schools through a set of outcome indicators, where good support for students with SLD and a genuinely inclusive atmosphere are ensured.

EMB is currently providing support to children with a variety of SENs in primary schools either through its ongoing intensive remedial support programme or its New Funding Model where $10,000 to $20,000 per annum is provided to a student with SEN. Secondary schools with high intake of bottom 10% of junior secondary students are supported by the School-based Remedial Support Programme (SBRSP), which provides remedial teaching to students in basic subjects of Chinese, English and Mathematics; while all secondary schools are supported by school social work service which aims to identify and help students with academic, social and emotional problems. For SLD, it is proposed that earmarked resources within the school to support students with SLD at different stages of education be considered. Adequate access to computer use and related SLD software in schools is necessary.

Motivational factors are important in helping students with SLD in schools. Although some of these students may not be able to achieve much concrete progress in terms of standard school achievement results at this juncture, the attention and understanding given to them by good school-parent-child teamwork are valuable in rejuvenating their interest in learning and self-esteem. Parent-school collaboration in helping these children is considered critical for success.

Studies at Hong Kong's Special Schools for Social Development (special schools set up for students with serious emotional and behavioural problems) have shown that over 50% of students universally tested upon admission to primary school have been positively diagnosed with SLD8, demonstrating a marked over-representation of SLD within groups of young people with serious emotional and behavioural problems. Such psychological problems are believed to be significantly related to the negative experience that students with SLD go through in regular schools, where their condition is either unidentified or not appropriately supported. Intensive psychosocial remediation through collaboration of school, family and community is needed for these young persons, before it is possible to redirectthem into a positive academic learning path.

A special school for some students with SLD who need intensive and specialist attention (full time, part time or temporary enrolment), should actively considered.

Higher Education

Due to the relatively limited flexibility of today's curriculum and open examination systems, students with SLD in Hong Kong today usually can only manage to access tertiary education through vocational training and sub-degree programmes. With the proposed New Academic Structure for Senior Secondary Education and Higher Education (EMB, 2005)[9], where whole-person development approach and liberal studies as a core subject are highlighted, the time is ripe for considering a wider curriculum selection and credit based system for secondary students, particularly those with SLD. This would allow development and maximization of these students' areas of strength and enhance opportunities for them to access tertiary education in their areas of competence and special talents.

Concessions on language requirements at university entrance should be considered for students with dyslexia who demonstrate adequate standards for the subject applied, in order to remove undue barriers for access to tertiary education.

Learning disabilities support centres in tertiary institutions need to strengthen their resources and support for students with SLD, who comprise the large majority of students with special needs within tertiary institutions of developed countries.

Adults with SLD

Issues relating to adults with dyslexia, including adult literacy education, remedial training, accommodations in professional licence examinations and in the workplace, need to be addressed.

Community Support and Development of Self-help Groups

Public education to increase understanding of SLD, reduce misconceptions, and foster an inclusive atmosphere towards SLD is important.

Public organisations and NGOs are currently providing a number of parent support programmes for families of children with SLD. However, a system to ascertain the quality of such programmes is needed. More promotion is still needed to introduce these services to families. Peer support groups such as the Hong Kong Association for Specific Learning Disabilities (HKASLD) parent group provide valuable platforms for families of children with SLD in HK to share resources, experience and aspirations.

Professional Training

Because of the high prevalence of students with SLD within mainstream schools, all teachers and school administrators need to have a basic understanding and awareness of SLD. Modules in SLD for undergraduate teachers should be compulsory, and in-service training for all existing teachers and school administrators on SLD is recommended. It is proposed that the Advisory Committee on Teacher Education and Qualifications (ACTEQ) study the demands placed on teachers by students with SLD, and include the subject in pre-service teacher education, as well as promoting teachers' and principals' continuing professional development in this area.

In 2005, EMB commissioned a 30-hour basic course for in-service teachers on SLD in Chinese and English. The first batch of training commenced in the 2005 September school year. More advanced courses focusing on SLD are recommended in future. Specific functional posts with positive career paths are recommended for these specially trained teachers.

Because courses today mainly provide basic awareness of the condition and the whole process of teacher empowerment is expected to take a number of years, Hong Kong teachers at this time rely strongly on specialist support, especially by educational psychologists, to provide timely diagnosis and delivery of effective remediation programmes. A system to ascertain the quality of such support is needed.

V. Issues of Special Concern

The following areas for research and development in Hong Kong are identified:

(a) Studies on emerging literacy milestones in Chinese for identifying at risk preschool children;

(b) Identification instruments for parents and teachers for preschool and all school levels;

(c) Diagnostic assessment instruments at different ages;

(d) Reading achievement levels for grade and age in Hong Kong to document baselines and monitor progress;

(e) Development of validated intervention methods for step-wise reading remediation in Chinese and in English as a second language;

(f) Teaching approach for language and other content subjects for students with SLD, especially in higher grades;

(g) Stock-taking of higher education opportunities for students with dyslexia in Hong Kong;

(h) Development of counselling and social remediation programmes for students with dyslexia with significant and prolonged school failure;

(i) Parents' role in supporting the child at home and as a team member within the school;

(j) Effects of dyslexia-friendly teaching on students with and without dyslexia.

The following SLD related concerns in public education should be addressed:

(a) Public awareness of the presence and nature of SLD to be promoted;

(b) Concept of equal opportunity and rights from the perspectives of both affected and unaffected individuals and families, to be made understood to the public;

(c) A supportive community for adults with SLD to be developed and enhanced.

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January 2006

International Statistical Classification of Diseases and Related Health Problems

Tenth Revision

F81 **Specific developmental disorders of scholastic skills**

Disorders in which the normal patterns of skill acquisition are disturbed from the early stages of development. This is not simply a consequence of a lack of opportunity to learn, it is not solely a result of mental retardation, and it is not due to any form of acquired brain trauma or disease.

F81.0 **Specific reading disorder**

The main feature is a specific and significant impairment in the development of reading skills that is not solely accounted for by mental age, visual acuity problems, or inadequate schooling. Reading comprehension skill, reading word recognition, oral reading, skill and performance of tasks requiring reading may all be affected. Spelling difficulties are frequently associated with specific reading disorder and often remain into adolescence even after some progress in reading has been made. Specific developmental disorders of reading are commonly preceded by a history of disorders in speech or language development. Associated emotional and behavioural disturbances are common during the school age period.
"Backward reading"
Developmental dyslexia
Specific reading retardation
Excludes: alexia NOS (R48.0)
dyslexia NOS (R48.0)
reading difficulties secondary to emotional disorders (F93.-)

F81.1 **Specific spelling disorder**

The main feature is a specific and significant impairment in the development of spelling skills in the absence of a history of specific reading disorder, which is not solely accounted for by low mental age, visual acuity problems, or inadequate schooling. The ability to spell orally and to write out words correctly are both affected.
Specific spelling retardation (without reading disorder)
Excludes:agraphia NOS (R48.8)
spelling difficulties:
associated with a reading disorder (F81.0)
due to inadequate teaching (Z55.8)

F81.2 **Specific disorder of arithmetical skills**

Involves a specific impairment in arithmetical skills that is not solely explicable on the basis of general mental retardation or of inadequate schooling. The deficit concerns mastery of basic computational skills of addition, subtraction, multiplication, and division rather than of the more abstract mathematical skills involved in algebra, trigonometry, geometry, or calculus.
Developmental:
acalculia
arithmetical disorder
Gerstmann's syndrome
Excludes: acalculia NOS (R48.8)
arithmetical difficulties:
associated with a reading or spelling disorder (F81.3)
due to inadequate teaching (Z55.8)

The use of word processors by students with Specific Learning Disabilities as an accommodation in open examinations

Catherine CC LAM

Background

It is the view of the Hong Kong Society of Child Neurology & Developmental Paediatrics (HKCNDP) that students with Specific Learning Disabilities (SLD), as for all other students with disabilities, should be provided with fair opportunity to demonstrate their knowledge and skills under appropriate test conditions, including at high stakes examinations.

In Hong Kong, as over the world, SLD is a condition that is plagued by differences among stakeholders on its definition, underlying pathophysiology, varying symptomatology between affected individuals, and most perplexing of all, by being called different names. "Specific learning disabilities (SLD)", used by HKCNDP and the medical sector, is also referred in Hong Kong as "Specific learning difficulties (SpLD)" – for most in education sector, "Learning Disabilities"- for those using North American terminology, and "Dyslexia", by others. The span of professional fields it legitimately involves is wide: medical and neurosciences with doctors and basic scientists, educators, clinical and educational psychologists, policy makers. The differences in knowledge base and culture among these disciplines are significant, leading to differences in viewing management, research and policies.

Against this background, the issue of access arrangements (accommodations) for students with SLD in open examinations is fraught with challenges. With the complicated issues involved in diagnosis and justification for access arrangements, members of the public also have difficulty understanding the justification for accommodations for this "invisible" disability. The sentiment for many policy makers is to err on the side of conservatism. We feel that Hong Kong can take advantage of experience overseas in its roll-out of measures that are theoretically sound and fair for these students and the rest of the tested population. Access arrangements / accommodations for students with special needs, including those with SLD, falls within several main categories:

Setting: including administering test in small groups, or providing special furniture (larger tables when enlarged question papers are provided)

Presentation: including providing colour paper or highlighted key words or provision of readers

Timing : including extended time allotted to take the test, and frequent breaks

Scheduling: including administration of test in several sessions

Response: including allowing making answers in test booklet, use of tape recorded responses, providing scribes, use of word processors

In this paper, we refer to the following documents, policy papers and organizations.

1. **HKCNDP SLD Forum and Position Paper 2005.**
2. **Joint Council for Qualifications** on access arrangements
   http://www.jcq.org.uk/exams_office/access_arrangements/regulationsandguidance/
3. **The American Council on Education, General Educational Development (GED) Test and commodations for persons with SLD**
   http://www.acenet.edu/AM/Template.cfm?Section=TestTakersInfo&Template=/CMContentDisplay.cfm&ContentID=11512
   Request for Testing Accommodations Form-assessment items to be documented listed in this form:
   http://www.acenet.edu/Content/ContentGroups/ProgramsandServices/GED/PODDisabilities/ACC-4RequestforTestingAccommodationRev1-LD.pdf
4. **Patoss** (The Professional Association of Teachers of Students with SpecificLearning Difficulties)
   Dyslexia: Assessing the need for access arrangements during examinations:
   http://www.patoss-dyslexia.org/Publications19.html
   Final Report: SpLD Working Group 2005/DfES Guidelines:
   http://www.texticweb.com/patoss/downloads/SpLD%20Working%20Group%20200520%20DfES%20Guidelines.pdf
   For "Handwriting speed assessment"
   http://www.patoss-dyslexia.org/Publications19.html
5. **The International Dyslexia Association**
   Perspectives Vol. 27, No. 4: Students with Dyslexia and High Stakes Testing
6. **College Board**
   Eligibility Guidelines for Computer Accommodations on College Board Tests:
   http://www.collegeboard.com/ssd/student/guidelines.html
   Diagnosis and Functional Limitations;
   http://www.collegeboard.com/ssd/student/limitations.html
7. **ETS (Education Testing Service)**
   Resources for Test Takers with Disabilities:
   http://www.ets.org/portal/site/ets/menuitem.435c0b5cc7bd0ae7015d9510c3921509/?vgnextoid=feb7be3a864f4010VgnVCM10000022f95190RCRD
   A Documentation Update For LD or LD/ADHD:
   http://www.ets.org/portal/site/ets/menuitem.c988ba0e5dd572bada20bc47c3921509?vgnextoid=57cdb7d086b49010VgnVCM10000022f95190RCRD&vgnextchannel=fbc7be3 a864f4010VgnVCM10000022f95190RCRD

Discussion

Reviewing of current state of understanding SLD and practices, several key considerations are brought up in relation to the use of word processors in examinations.

1. Updating of functioning for justifying need for requested accommodations :
   although SLD is lifelong, the impact they have on functioning changes over time. Typically for SLD, a shelf-life of not more than 5 years is required.
2. The documentation update should include:
   i. a restatement of the diagnosis, including date(s) for all prior diagnoses and data that were used to establish the diagnosis.
   ii. an update that verifies the continuing weakness in those areas identified as weak in prior evaluation(s)
   iii. current functional limitations due to the disability, including information regarding its duration, severity, and impact on academic performance in general and test taking in particular observational data, gathered during the evaluation, of behavior such as affect, concentration, attentional fatigue, executive functioning and fluency
   iv. history and types of accommodations received and used, consistency and circumstances of use (e.g., the type of test in which accommodations were most helpful), or an explanation of why no accommodations have been used prior to the current request
   v. discussion of the appropriateness of the requested accommodations for the examinations, including objective evidence confirming that performance would be negatively affected without the requested accommodations.
3. Rate and accuracy in writing are crucial to success in examinations. For the purpose of requesting the use of word processors as an accommodation, the following aspects of writinskills should be considered:
   i. Accuracy and legibility
      a. Spelling *(here used broadly for both English words spelling and Chinese word dictation)* should be assessed at word level. The point of interest here is whether the spelling errors are minor, which do not reduce readability of the words, or bizarre spellings, where it is extremely difficult to guess what each word might have been.
      The latter is of interest in this context, and the assessor is asked to state the "percentage of errors unrecognizable as target word".
      b. Handwriting legibility is also considered in the same manner, where atrocious handwriting which makes guessing of the target word very difficult, is counted together in "percentage of errors unrecognizable as target word".

ii. Continuous free writing skills

a. Students with SLD have difficulties in continuous writing at sentence and text level.

i. When doing free writing, these students cannot sustain the same level of accuracy or legibility when their attention is focused on composition rather than spelling, especially under time constraints.

ii. Their severe difficulties with composition often renders their text incomprehensible.

iii. Comprehensibility of spelling, handwriting and text composition should be viewed not only from the perspectives of "special education teachers", but also for examiners in science, geography, biology and other subjects.

b. Writing speed

i. Mechanical aspect of handwriting is one of the components contributing to written output problems.

ii. It is noted that students with handwriting problems are distracted from higher order process like planning and evaluation.

iii. Students with SLD have language and information processing difficulties that impact on output speed. For severe SLD, the severity of impairment in organization, organization, presentation of ideas, richness of language, complex sentence structure need to be documented, noting that "severity in writing" here does not include measurement of the mechanics of language - e.g. spelling.

c. Speed of writing are typically measured through copying tasks. In view of the above discussion, copying speed does not take into consideration the context of free writing in an examination. Tests of free writing may be collected for 15-20 minutes, under normal and controlled conditions (such as with school term examination papers). The number of words per minute as well as the percentage of illegible words due to poor handwriting and bizarre spelling is counted. These should be obtained for both hand-written and word-processed samples.

d. Increased speed provided by use of a word processor will allow the student to proof-read and edit his/her text.

e. The eligibility for being provided with word processor depends on whether it was the normal method of working in class, whether it will improve both from perspective of target word recognition (because of poor handwriting and/or bizarre spelling), "slow speed" that is not compensated even by extra time, and severity of language processing difficulties (as in above(b)ii).

4. It may be noted that for many examination boards and testing services, while the applicationby students with SLD for a reader or a scribe or voice-activators are standard items, word processors are only applied as an item under "Others". Following the discussion in item (3), we view that **only when a students' free-writing using a computer** is still incomprehensible (for reasons discussed above) and/or so slow that extra time makes little difference, that a scribe or voice-activated word-processing might be indicated. **The point here is therefore to distinguish between speeds and comprehensibility of handwritten**

and typed expression (using word processors), and that of oral and written expression (using scribes and voice-activators). Until and unless word processing has been tried, which may be the way most of these students function in daily life in future, and proven to be non-rewarding for the student involved, it is our view that the consideration of "readers", "scribes" and "voice-activators" should be **secondary** to recommendation of word processors.

Summary

The examination process involves successful tapping of students' subject knowledge and understanding, which in turn depends on their

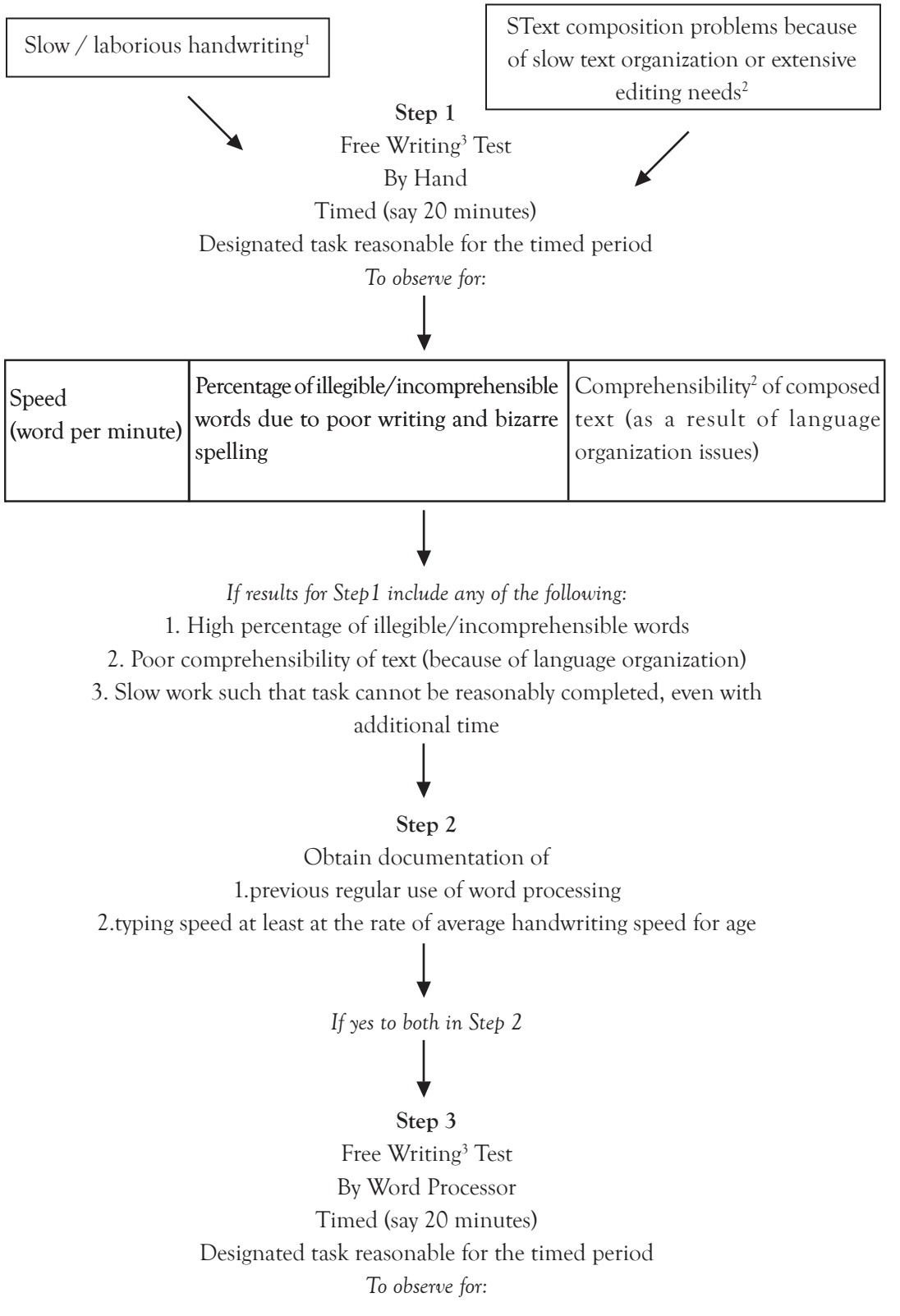
1. ability to read and interpret the questions correctly in a limited time, and
2. ability to produce written evidence to prove the candidates' subject knowledge and understanding.

For those with difficulty in producing the written evidence through traditional means of handwriting on answer papers, the use of word processors, scribes or speech recognition technology may need to be considered, to allow this demonstration of knowledge.

Our discussion shows that:

1. **Writing to express what one knows depends on multiple factors, including**
   i. mechanical aspects of writing,
   ii. recognisability of written words because of form and spelling
   iii. speed of writing (as a result of mechanical, spelling and written language organization issues)
   iv. comprehensibility of written text
2. **Word processors, readers and scribes can contribute to allowing the student express what he/ she knows in a fair manner.**
3. **Functional assessment, which discerns between different deficits contributing to inability to fully express** what one knows is the cornerstone for making recommendations.
4. **Word-processors can help to:**
   i. Improve legibility resulting from poor mechanical handwriting
   ii. Reduce cognitive resources in handwriting and allowing more resources in higher mental functions
   iii. Improve speed of output, allow time for student to proof-read and edit his/her expressive text
   iv. In assessment of speed, bench-marks for speed of handwriting and typing should be the same. Only if the student can type faster than writing by hand should this accommodation be considered.
5. **If it is documented that oral presentation is superior to writing expression, scribes or voice activators may be considered.**

Process Diagram proposed for reviewing need and eligibility of applicants to use word processors*.



Speed (word per minute)	Percentage of incomprehensible words due to bizarre spelling (that the WP will not be used to correct)	Comprehensibility[2] of composed text (as a result of language organization issues)

↓

Observe in Step 3:

1. Percentage of incomprehensible words
2. Comprehensibility of composed text (because of language organization)
3. Speed of work and reasonable ability to complete task with/without additional time

[The understanding is that with a word processor, the student might improve because he/she is able to:

1. eliminate illegibility due to mechanical handwriting problems
2. increase written output because of higher efficiency / less fatigue with WP
3. have additional time and greater ease to edit his/her text
4. have time to complete more of the task.]

↓ ↓

If difficulties in Step 1 can be satisfactorily improved through the use of WP	If difficulties of Step 1 still significant, even with the use of WP
↓	↓
Use word processor[4] in examination recommended	Consider use of scribe or recording-to-tape or use of speech recognition technology[5,6]

* Students with SLD who have serious spelling problems that render their written text incomprehensible, but who DO NOT have handwriting problems, should directly consider the use of scribe or recording-to-tape or use of speech recognition technology (see bottom of process diagram). This is because the use of word processors are not intended for spell check, and furthermore spelling concerns would distract from higher order thinking and answers on the subject.

1. Aspects of handwriting to be noted include speed, legibility, endurance (onset of fatigue)

2. Applicant with text composition problem requesting use of word processor should supply samples of handwritten text, and improvement in language organization and comprehensibility shown through text written with word processor. Need for extra time should also be documented. Comprehensibility should be judged by subject teachers and not only by language teachers of these students.

3. Examples of free writing speed:
   http://www.patoss-dyslexia.org/Handwriting_speedtest.html
   http://www.texticweb.com/patoss/downloads/project2.htm

4. Guidelines for use of word processors at examinations may be found in JCQ 2006, Section 2.5.

5. Evidence should be available from candidate's school that there is significant difference between effectiveness of oral and written language for expressing what he/she knows on the subject content.

6. On effectiveness of use of oral response in students with SLD and students without SLD: MacArthur, Charles A.; Cavalier, Albert R. (2004) Dictation and speech recognition technology as test accommodations. Exceptional Children, 71, (1) 43.

Conclusion

Some centres prefer to first recommend the use of scribes for all students with serious SLD problems. A key rationale is that with scribes, the student will be able to use mental resources on higher order thinking and organization of the subject itself, rather than struggle with writing/typing tasks. On the other hand, other centres may prefer candidates to work independently and use word processors than rely to on scribes, unless spelling problems render their written text incomprehensible (see * at bottom of process diagram), in which instance verbal responses as above will be recommended.

Finally, many of our students of SLD have high levels of achievement or intelligence. The practice of denying accommodations to individuals with well-documented dyslexia has been ongoing, based solely on the individuals' satisfactory performance at school. This practice arises from common misconceptions about SLD, where students with SLD are considered to be "normal", or reversedly that they are expected to "do poorly". Hong Kong should be beyond such misunderstandings. Individuals with SLD who are "making do" should still be given accommodations to learn and perform at their best potential. This concept was recently aptly demonstrated at a judicial ruling in a groundbreaking decision on October 31 2006 that "individuals with ... Dyslexia .... are entitled to extra testing time and/or other accommodations on the Medical College Admission Test ("MCAT") as defined by existing ....law". By allowing more individuals to receive the accommodations that they need, students and individuals with SLD will have an equal opportunity to demonstrate their knowledge and skills on open examinations at high school graduation, college entry and college graduation, and a fair chance to pursue their dreams in society.

Specific Language Impairment: the local scene 2008

Lesley Yip

Overview

The term specific language impairment (SLI) refers to a significant impairment in spoken language ability when there is no obvious accompanying condition such as mental retardation, neurological damage or hearing impairment (Leonard, 1998). The prevalence rate is estimated to be around 7.4% in kindergarten children in the United States (Tomblin, 1997). From the studies of genetics and cognitive processing, there is strong evidence that SLI has a constitutional basis. Some children with SLI had a history of language delay. Apart from the late onset of first word, they also have restricted vocabulary. They often use nonspecific words and naming errors are frequently noted. There may have long pause in speech and circumlocution is common. Their expression tends to be simple, unclear and poorly organized. They fail to understand complicated language structures. They are unable to follow instructions in classroom and daily activities. In fact, they have significant impairment in all aspects of spoken and written language functioning (Stothard, 1998). The academic performance and social life are greatly affected. In the English speaking world, the subject is studied for over 30 years. The language characteristics, risk factors and outcome are well described. SLI children are systemically identified and supported in the education system.

Hong Kong Scenario

1. Research

In Hong Kong, services for SLI children are provided by different sectors. The universities focus mainly on research, but due to their limitation in accessing potential subjects, studies have been of a smaller scale. Reports so far suggest that local SLI children use shorter utterances and fewer different words during conversations (Klee, 2004). They also showed problems in using certain grammatical categories such as aspect markers (Fletcher, 2005) and understanding certain question types such as who-object questions (Wong, 2004). Sentence repetition was more sensitive than nonword repetition in discriminating SLI children from typically developed age matched peers (Stokes, 2006). Today, there is as yet no comprehensive description on the language characteristics, underlying cognitive deficits or longitudinal study on outcome of Cantonese speaking population. There is also no local epidemiological data regarding the prevalence which is important for service planning.

2. Clinical services

Clinical services are provided by Department of Health, Hospital Authority and Education Bureau. Preschool children with speech and language problems are identified by the Developmental Surveillance Scheme of Family Health Service. Children with significant or persistent problems are referred to Child Assessment Service for diagnostic confirmation, and may be subsequently referred for speech therapy at the Hospital Authority for preschoolers and Education Bureau for school aged children. Preschool children with pure SLI are not eligible

for rehabilitation services under the subvention of Social Welfare Services such as those in early education and training centres, child care centres with integrated programme and special child care centres. Long waiting time and inadequate support in the public service pose serious problems. As a result, some children with SLI approach the private sector for therapy, although these are unaffordable for the majority of families.

3. Assessment

Because of a lack of standardized instruments in the past and a lack of awareness on the part of parents and teachers, many children with SLI remain undetected until school age when other problems, particularly in academic achievement and social adjustment, arise.

2006 opened a new era for the subject of SLI when the Hong Kong Cantonese Oral Language Assessment Scale (HKCOLAS) was launched. This is the first standardized instrument for assessing Cantonese oral ability (including both production and comprehension) by speech therapists. It was developed jointly by the Child Assessment Service of the Department of Health of the Government of the HKSAR and Language Information Sciences Research Centre of City University of Hong Kong. The whole project, from data collection, design of assessment instruments and norms specification took five years to complete. With the test, Hong Kong children aged between five and twelve with and without SLI can be discriminated through local normed references, and their language profile delineated for detailed understanding of their impairment and remediation needs. Through this research, different aspects of oral Cantonese language in Hong Kong's school aged students were studied, and much insight was gained into underlying linguistic components and their deficits in SLI. It is hoped that a monograph will be produced by the research team presently, discussing these new findings, and the specific deficits that were observed in school aged children with SLI.

Around the same time, the Education Bureau launched the Cantonese Expressive Language Scales (CELS) to assist both teachers and speech therapists in identifying and diagnosing the speech and language problems of Primary One to Primary Six pupils. The assessment tool consists of a full version for speech therapists and a simplified version for teachers.

4. Remediation services

Starting from 2003/4, under the New Funding Mode (NFM), ordinary government and aided primary schools are provided with an Intensive Learning Support Grant (ILSG) and requested to adopt the whole-school approach to support students with learning difficulties including SLI. From 2006/07 school year, an Enhanced Speech Therapy Grant (ESTG) is added to schools in stages, for employing speech therapists or purchasing school-based speech therapy services. With the ESTG, more intensive and timely school-based support will be provided to students with SLI. Through these speech therapists' individualized training, collaboration with teachers to provide effective learning environment and parental guidance, the students' learning and communication skills should be enhanced.

However, this is only a start. School based speech therapy and collaboration works are new to our speech therapists and school personnel. A variety of training courses are being hosted

by the Education Bureau (EDB) and HKU School of Professional and Continuing Edudation (HKU SPACE) for therapists and educators, to enhance professional standards in this area.

At present, a well developed, evidence based programmes to support SLI children in school are not yet in place. Time constraints and low awareness of needs of these students by school teachers and administrators are also limiting factors on the success of such kinds of programme.

5. Conclusion

From the publication of Position Statement and Papers on Specific Learning Disabilities by the HKCNDP in 1999, there has been significant advancement in Hong Kong on the subject of specific language impairment. However, much needs to be done. Looking ahead, collaboration among university and clinical units is necessary for larger scale studies, especially on the underlying cognitive deficits, comorbidity, intervention measures and longitudinal outcome. We need to identify risk factors to allow early detection. Effective intervention programmes and service models should be developed to enable students with SLI to learn and participate in society. The subject of SLI including identification and intervention should be incorporated in the undergraduate curriculum for speech therapists. Close monitoring on the efficacy of the service provision by the Education Bureau is very important. Last but not least there is the urgent need to improve the serious shortage of speech therapists in HA, NGOs and schools for these children. Up till now, SLI in children receives low priority in various service sectors, because of their problems' invisibility and parents' limited channels to reflect their need. To achieve the goal, public and professional education through the team work of academic and clinical experts are essential.

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BRAINCHILD
The Official Publication of HKCNDP

Mathematics Disorder

Fanny Lam, Catherine Lam, Becky Chan

Introduction

While mathematics is an important cognitive ability in daily functioning in our civilized world, specific difficulty in arithmetic and or geometry also presents as complex and intriguing topic in areas of education, psychology and neuroscience. Mathematical abilities are correlated with other psychological processes including verbal, visuo-perceptual, memory, executive and attentive abilities (Clark and Campbell, 1991). Therefore mathematics disorder is a heterogeneous clinical condition, within the Specific Learning Disabilities spectrum. Combinations of difficulties in language processing problems, visual spatial confusion, memory and sequence difficulties may contribute to mathematical learning difficulties. Its etiology is equally heterogeneous including genetic influence (Rourke, 1989) and acquired cerebral pathology. While acquired acalculia due to well known cerebral lesions better defined by historical studies (Henschen, 1925; Berger, 1926(in Ardila 2002); Gerstmann, 1940; Boller and Grafman, 1983), developmental dyscalculia is rather novel and research is very limited, despite the significance of quantitative representation and calculation ability in our daily lives.

It is estimated that about 6% of school age children in USA have significant mathematical deficits (Badian, 1983; Gross-Tsur, Manor, and Shalev, 1996) and similar prevalence rate was also reported across the world in Czechoslovak and India (Kosc, 1974; Ramaa, 2002).However, Mathematics Disorder (MD) is quite often neglected especially when weakness in arithemtics is erroneously assumed to be normal variants, especially in girls, in society. It is obviously under-diagnosed because mathematical difficulty is less apparent than reading disability and diagnosis is difficult. Diagnostic problem is partly due to the lack of normative studies in the general population as well as the limited number of standardized and valid diagnostic tests for the disorder population. Often, diagnosis of MD is further impeded by the clinical heterogeneity, the common occurrence of other developmental disorders as comorbidity and the consideration of psychological and developmental factors. However, early identification may have positive implication on educational strategies for teachers and vocational prospects for the seriously affected individuals.

Definitions and diagnostic criteria

To date, there are no universally agreed diagnostic criteria for MD. In many cases, children with underachievement in mathematics are considered as having MD. In fact, some of the reasons of low achievement are related to home, community and school factors. According to Russell and Ginsburg (1984), poor schooling accounts for the most significant contribution to low achievement in mathematics. Therefore, it is important to understand that definitions of specific learning disabilities rest on assumptions of average or better ability to learn, normal sensory function, adequate educational opportunity, and absence of severe emotional disturbance. Before attributing an individual's underachievement in mathematics to a learning disability, these other conditions need to be excluded.

In the *Diagnostic and Statistical Manual of Mental Disorders* (Fourth Edition-Text Revision) (DSM-IV-TR), MD is within the section on Learning Disorder, including Reading Disorder, Mathematics Disorder, Disorder of Written Expression and Learning Disorder Not Otherwise Specified. MD is diagnosed when one's mathematical ability as measured by individually administered test, is substantially below age expectation, education and intelligence. In addition, the disturbance interferes significantly with his/her academic achievements and daily life activities. Mathematics Disorders also correspond to both developmental dyscalculia and acquired dyscalculia.

In the *International Statistical Classification of Diseases* and *Related Health Problems* (*Tenth Revision*) (ICD-10), Specific Disorder of arithmetical skills is categorized under the topic of Specific developmental disorders of scholastic skills. Three categories in the developmental disorder related to arithmetical skills are included here, namely Acalculia, Arithmetical Disorder and Gerstmann's syndrome.

The working definition of the United Kingdom Department of Education and Skills states that "Dyscalculia is a condition that affects the ability to acquire arithmetical skills. Dyscalculic learners may have difficulty understanding simple number concepts, lack an intuitive grasp of numbers, and have problems learning number facts and procedures. Even if they produce a correct answer or use a correct method,they may do so mechanically and without confidence". This definition provides a practical description of mathematics learning difficulty in education setting and a simplified approach to explain the topic to parents and teachers.

The term *Developmental dyscalculia* was first defined by Kosc as "a structural disorder of mathematical abilities, which has its origin in a genetic or congenital disorder of those parts of the brain, that are the direct anatomico-physiological substrates of the maturation mathematical abilities adequate to age without a simultaneous disorder of general mental functions."(Kosc, 1974). Developmental dyscalculia refers to a cognitive disorder of childhood, impairing the normal acquisition of arithmetical skills (American Psychiatric Association, 1987). The term Developmental dyscalculia was changed to Mathematics Disorder in the DSM-IV in 1994 (American Psychiatric Association, 1994) but it is still used in some neuropsychological literature.

Genetics

The genetic basis of developmental dyscalculia was ascertained by behavioral studies using twin study or family studies. Shalev, after studying 39 families with an index case of developmental dyscalculia, demonstrated that 40-66% of first degree relatives and 44% of second degree relatives had the same condition in contrast to the 6% prevalence rate of general population. (Shalev, 2001). Moreover, dyscalculia was a known and not uncommon neuropsychological deficit in genetic syndromes such as Turner syndrome, Fragile X syndrome, Neurofibromatosis type I and Velocardiofacial syndrome. However the molecular basis and the chromosomal mapping of the gene underlying arithmetic ability is still largely unknown, probably due to the vastly heterogeneous cognitive attributes involved.

On the other hand, Geary argued that in some children with coexisting reading and mathematical disability, common cognitive and genetic factors may underlie individual difficulties, namely semantic memory skills, leading to fact-retrieval problem. He also pointed out that different forms of mathematics disorder (eg fact-retrieval vs visuospatial) are differentially inherited (Geary, 1993).

Neurological and Neuropsychological correlates

The deficits of MD may represent a combination of environmental, genetics and neurodevelopmental problems. Even when children with MD demonstrated the same cognitive deficit as the brain-injured individuals, it does not imply that they have overt brain insult. Rather, it represents the asynchrony between the maturation of the supportive neural system and the feedback from early experience. The problem in maturation of the specific neural system may be due to genetics or other not yet identified factors.

In studies of MD, the neurological approach is concerned with localizing the particular component processes of arithmetic by correlating focal brain lesions such as tumor and stroke, with particular numerical deficits or types of errors. The resulting dysfunction of cognitive processes is correlated to well known cerebral lesion in deficit models. For example, Gerstmann's syndrome was an intriguing but rare neurological condition(acquired or developmental) , encompassing a tetrad of symptoms: left-right confusion, finger agnosia, dyscalculia, and dysgraphia, with constructional dyspraxia often included as a fifth symptom. These deficits were related to damages to a specific area of the brain - the left parietal lobe in the region of the angular gyrus. (Gerstmann, 1940; Miller and Hynd, 2004)

Historical neuroanatomical and neuropsychological correlation studies demonstrated that the left hemisphere mediates the numerical symbols system and retrieval of number facts from semantic memory e.g. multiplication tables. On the other hand, the right hemisphere is responsible for the processing of nonverbal especially novel stimuli, integration of different modes of stimuli, spatial representation of quantity and dealing of complex information like adaptation to novel situations. Therefore, in mathematics, the integrative, complex and novel dimensions of early mathematical learning and concept formation are more often a right hemispheric function (Goldberg and Costa 1981 ; Rourke 1982, 1989). The right hemisphere is also responsible for mathematical performance that requires adaptive/conceptual reasoning and/or visual-perceptual interpretation or visuomotor coordination, such as decimal places and calculations involving "carrying" or "borrowing" (Ardila and Roselli, 1990). Only after successful initial learning would number facts and basic arithmetic procedures become sufficiently routinized to be executed primarily by left hemispheric systems. Right-sided damage results in deficits in dealing with the visual-spatial dimension of calculation and mathematical reasoning. Patients with prefrontal injuries and acquired frontal lobe lesions frequently develop calculation difficulties that are not easily detected. As a result of impairment in executive function, patients display serious difficulties in mental operations and solving problems that have many steps or successive operations.

The role of language and visuo-representation in mathematical performance and the unique "arithmetic pathways" of the brain could now be better delineated by advanced neuroimaging and neurophysiological techniques. Replicable evidence demonstrated support the presence of domain specific brain areas in arithmetic representation in the parietal lobe. The horizontal segment of the intraparietal sulcus (HIPS) region represents an amodal and language independent semantic pathway in numerical quantity, which can be assessed through various symbolic (eg Arabic notation) or non-symbolic codes, (Piazza, Mechelli, Butterworth, Price, 2002, Dehaene, Molko, Cohen and Wilson, 2004), while other areas of the parietal lobe are involved in calculation including the left angular gyrus which serves as support for language skills and the posterior parietal regions which provides as visuo-perceptual and visual attention support. The prefrontal cortex was sometimes activated in calculation especially in multi-step processes to contribute in domain nonspecific planning and working memory.

Cognitive Components involved in Mathematics Performance

Neuropsychological studies have demonstrated that calculation abilities are associated with a diversity of other cognitive abilities, including verbal, visuo-perceptual, visuo-spatial, memory, and executive function abilities. MD is a clinically heterogeneous condition, in which, children with MD can fail in a whole array of numerical tasks, including performing arithmetical operation, solving arithmetical problems, number manipulations, and using numerical reasoning; as well as geometry. The cognitive deficits of children with MD potentially involve the following components: number processing skills, number and counting conceptual understanding, arithmetical procedural skills, fact retrieval efficiency, working memory, speed of processing, strategy choice effectiveness, and spatial and perceptual abilities.

Developmental Course

The manifestation of MD children may result from a combination of cognitive deficits with various degrees. For children whose problems are specifically related to retrieval deficits, their deficits tend to be persistent in nature with little improvement over time even with remediation. For children whose problems are largely related to the use of arithmetical procedures, they may follow a developmental delay model, in which, their mathematics performance show some improvements with training and maturation. Adding to this, MD children's developmental course and outcomes may also be altered by their learning styles, education support, anxiety towards mathematics, attributional styles, and their cognitive abilities.

Intervention

Very little research has been done on remediation in this area. Part of the difficulty stems from the fact that, except for the various areas that were described, little is really known about the nature and course of mathematics disabilities. An accurate and comprehensive evaluation of the children's specific learning disabilities in literacy, learning style and history of arithmetic skills learning should be the first step of effective management. Identifying children's learning styles can is helpful. For children with difficulties with visual memory and in copying, they may interpret geometric designs in verbal terms. For children who have difficulty with auditory memory for information, they may write down or record the pertinent information and they

can refer to their written records in their processing. Self-verbalization methods, and physical and visual representations of number concepts or problems situations may be beneficial. Individualization is also needed to help addressing the impact of each individual's unique learning characteristics in association difficulties. Special resources are necessary for these intervention and individualized attention. Children with MD benefit from programs that build on and around what they do understand and know, while arbitrary changes in teaching may add to their confusions. In other words, structure and organization of the information and ideas they have learnt are important (Chinn and Ashcroft, 2007). Accommodation or modifications in texts, materials, assignments, teaching methods, tests, and homework could be helpful. Using of aids, such as computer, calculator or abacus may be considered. Traditional mathematics teaching method of repeating rehearsal of similar math problems without verbal elaboration may not be an effective way in teaching math.

Psychological counselling

Continuous academic failure in mathematics and the negative attribute of mathematics may contribute to "math anxiety". Eliminate the anxiety and enhance children's positive attitude to mathematics is necessary. Cognitive therapies may help to increase children's sense of control and minimize the feeling of "failure" due to mathematics anxiety. Furthermore, allowing different learning styles, creating a variety of testing environments, designing positive experiences in mathematics classes, emphasising the importance of original quality thinking rather than rote manipulation formulas are all probable ways in reducing "math anxiety".

Progress and prognosis

Children manifest different types of disabilities in mathematics (Badian, 1983; Kosc 1974, Strang and Rourke, 1985) and when mathematics difficulties are present, their range of difficulties varies. For children with MD mostly due to procedural deficits, the mathematics competence of these children progresses about one year for every two years in school (Cawley & Miller, 1989). For children with fact-retrieval deficits predominantly, their deficits tended to be persistent over time. The mathematics progress of children with MD eventually reaches a plateau, with little evidence of growth between the ages of 10-12 (Cawley, Parmar, Yan, & Miller, 1998). Interestingly, some of the children with MD may be remedial mathematics students during the elementary years when computational accuracy is heavily stressed, but can go on to join honours classes in higher mathematics where their conceptual prowess is called for. While they may continuously demonstrate careless errors and inconsistent computational skills, they should not be denied access to higher-level mathematics of which they are capable (Garnett, 1998).

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The Hong Kong Society of Child Neurology & Developmental Paediatrics
Working Party on Specific Learning Disabilities

Seminar on

Specific Learning Disabilities from Multidisciplinary Perspectives: From Theory to Practice

4 December 1999

2008

Scientific Committee Speakers

Dr. CHAN Chok Wan	Child Neurology
Dr. CHENG Pui Wai	Neuroradiology
Prof. Susanna CHOW	Occupational Therapy
Prof. Susan EFFGEN	Special Education Policy, Physical Therapy
Prof. Paul FLETCHER	Speech & Hearing Sciences
Dr. Catherine LAM	Developmental Paediatrics
Prof. LEONG Che Kan	Educational Psychology, Special Education

Guest Speakers

Ms. LEE Suk Han	Special Education
Dr. Leslie LO	Education Research, Education Policy

Summary of Scientific Committee Presentations

This Seminar is the most widely represented in the Society's series of Scientific Meetings for addressing Specific Learning Disabilities, being presented by academics and clinicians active in the fields of neurology, developmental medicine, psychology, speech and language pathology, psycholinguistics, neuroimaging, rehabilitation sciences, education and education policy. The purpose of the seminar was to promote multidisciplinary communication in addressing scientific findings on the causes and manifestations of these conditions, on effective and scientifically well founded methods for their diagnoses and remediation, as well as for addressing local practice, policies and research priorities. It is also the aim of the Society's Working Party on SLD to spread information that bears directly on the understanding and practice for specific learning disabilities and to provide a platform for effective transdisciplinary interactions between professionals from many different fields. The following are summary points from presentations by Scientific Committee at the Seminar.

Problems which Hong Kong faces in the field of SLD include poor general awareness of scientific progress, fragmentation in the field with each group focusing on different aspects of SLD, a plethora of less than rigorous intervention methods being offered, and the reluctance to give diagnoses for fear of labeling. The last factor also leads to lowered requirements for stringent professional practice and alleviates from responsibilities towards public education.

A position statement on the definition of Specific Learning Disabilities was made in a monograph launched by the Scientific Committee on the day of this Seminar, where SLD is defined as a general term that refers to a mixed group of disorders that cover reading, spoken and written languages, mathematics and perceptual motor skills. These conditions can co-occur with each other, and are inherent in the individual and developmental in nature. Although they may occur concomitantly with other handicapping conditions, they are not a result of them. These other conditions may however adversely affect the academic performance and lives of the individuals with SLD. Unless given appropriate systematic and intensive intervention and treatment, children with SLD may continue to show disabilities in adulthood. SLD needs to be studied, and children with SLD need to be helped from multidisciplinary perspectives.

There is ample evidence from studies in a number of languages other than Chinese that children with specific language impairment (SLI) in the preschool years are at risk for literacy problems at school. Children who talk late, and have oral communication difficulties, will have problems learning to read and hence inevitable educational difficulties. A recent authoritative US study estimates that around seven percent of kindergarten age children present with SLI (language learning problems in the context of normal intellectual abilities). Evidence was presented to show that pre-school children referred to Child Assessment centres in Hong Kong for language impairment show a very similar symptomatology in Cantonese to that displayed in their counterparts speaking English, Swedish, Italian, Japanese etc: demonstrating late onset of speech, slow vocabulary development, limited comprehension and/or expression when compared to normally developing children of the same age. Early intervention is critical.

In the area of reading disorders (developmental dyslexia), evidence was presented to show that reading and writing (to dictation) all come from the same underlying representation. Diagnosis should emphasize the analysis of reading/writing error patterns and underlying processes in order to facilitate effective remediation. Review of local experience with children who presented during preschool years with early signs of specific reading and writing difficulties demonstrated the critical need for early identification and intervention for developmental dyslexia, and for timely prevention of secondary learning and emotional problems.

Developmental coordination disorders (DCD) were reviewed and it was noted that DCD impact on academic achievement and daily living in about 10% of all children. Although children do not grow out of DCD, it was emphasized that appropriate intervention can be effective for improving the condition and for providing compensation strategies for difficulties which may contribute to a disabling condition during school years.

Modern neuroimaging techniques help in establishing both the structural and functional signatures of SLD. Given research and technical development, individuals with SLD could be more accurately subcategorized to facilitate tailoring of interventions for their specific deficits and capabilities.

The underlying philosophies for inclusive education were discussed. Current trends in inclusive education for children with SLD call for appropriate services within ordinary schools where classroom teachers must have the supports necessary to provide effective educational strategies for children with SLD. A continuum of placements, services and supports should be made available within the community for these children.

It was the view of the Scientific Committee that the following work and issues in SLD warrant urgent attention in Hong Kong:

1. For clinicians, practitioners and academic professionals: further work is needed, through collaborative efforts, to review local practice and data, collect local statistics and norms, formulate guidelines on early warning signs, and develop scientifically sound and validated screening, assessment and intervention tools.

2. For professionals in teacher preparation: to pursue the need for all pre-service teacher preparation programmes to include a mandatory course on "Introduction to Children with Special Needs", to organize compulsory workshops at regular intervals for practicing teachers and heads of schools to update their knowledge and skills on adapting curriculum materials, including the use of assistive technology to help these individuals, and on working with these children.

3. For parents: to promote public education, and to strengthen parent group organization for peer support and advocacy.

4. For administrators and policy makers: to understand the needs of children with SLD and to provide the necessary leadership in reviewing existing practice in specific remedial education and in formulating policies for the necessary educational provisions.

The Working Party appealed to professionals in the field to refrain from further divisive referrals to "Educational versus medical models" or "U.K. versus North American models", but instead focus on information which is based on all data which is scientifically robust and replicable. With the multidisciplinary position statement on definitions of SLD and keynote papers of the Working Party members, and with rapidly increasing numbers of meetings and activities in Hong Kong on the subject, it is hoped that there will be no further claims by local practitioners that this topic is uncommon or little known in Hong Kong. With clients necessarily being common to multiple professionals, it is imperative that there are common goals and effective team collaboration.

HKCNDP Working Party on Specific Learning Disabilities

Mission

To review Hong Kong's current professional and administrative practices and governmental policies for children with Specific Learning Disabilities, to take measures for bringing about the necessary and appropriate changes therein, and to present a final report to the Council of HKCNDP at the end of this project.

Terms of Reference

a. To convene experienced members from Hong Kong's relevant professional disciplines involved in SLD to allow a comprehensive team approach.

b. To review current theories, research findings and clinical and educational priorities.

c. To promote better understanding of SLD amongst professional and lay people.

d. To undertake research on SLD with particular reference to Chinese children and to Hong Kong.

e. To bring about appropriate changes to effect more effective and efficient provisions for children with SLD.

In order that the Working Party may more effectively carry out its objectives for scientific, professional, public educational as well as policy related advancements in the topic, invitation is made to all members in the field who are concerned with these issues to join in its upcoming activities. Interested colleagues are requested to contact the Chairman of the Working Party Dr. CW Chan at Fax (852) 2577 1989.

BRAINCHILD
The Official Publication of HKCNDP

香港兒童腦科及體智發展學會

特殊學習障礙專責小組

研討會

從多元化學術領域探討特殊學習障礙的問題：由理論到實踐

一九九九年十二月四日

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學術小組講者論文摘要

是次研討會，是本會一系列有關特殊學習障礙的學術會議中，最多不同界別代表參與的一個。在研討會上發表演說的學者和臨床工作者，來自多個不同專業的專科：腦神經學、兒童體智發展學、心理學、語言病理學、心理語言學、腦部神經系統素描科、復康治療學、教育及教育政策科。是次活動的目的是推動跨科際的學術交流，促進不同專業人士對特殊學習障礙的討論，藉以增加與會者對以下各方面的關注：特殊學習障礙的成因及徵狀的研究進展，有效而又有科學根據的診斷和補救方法，香港在處理特殊學習障礙問題的措施、政策及研究取向等。本會專責小組致力推廣公眾對特殊學習障礙的認識，並為各界專業人士提供跨學科交流的機會。以下是本會學術小組成員於研討會上所發表論述的摘要。

香港在面對及處理特殊學習障礙的問題時，通常遇到下列種種的困難：公眾對特殊學習障礙的研究進展缺乏認識，各專業人員因針對面不同而各自朝不同的方向研究及處理特殊學習障礙問題，坊間存在著的花樣繁多但未經確認補救及治療方法，專業人員因害怕「特殊學習障礙」一詞所帶來的標籤效應而不願作出診斷等等。部份專業人員諱疾忌醫的心態更導致他們降低對專業實踐的嚴謹要求，同時亦逃避了教育公眾的責任。

本會學術小組於是次研討會所派發的論文集中，發表了小組對「特殊學習障礙」定義的聲明。聲明中指出，「特殊學習障礙」是一個概括的名稱，涵蓋不同類別的學習障礙，包括閱讀、口語、書寫、數學和感知動作協調等。這些障礙基本上是與生俱來及具發展性的，也可能在個體內同時並存。雖然，這些學習障礙可能與其他殘疾（例如：失明、失聰和弱智）或各種不利環境因素同時出現，但特殊學習障礙並不是這些因素所引發出來的結果。但如果這些情況與特殊學習障礙同時出現，則會對特殊學習障礙者的學習表現和日常生活產生更加不利的影響。對大部份沒有獲得適當、有系統和緊密的輔導和治療的兒童來說，他們到成人階段都未能克服學習上的困難。畢竟，特殊學習障礙問題仍有待學者們深入研究，而有特殊學習障礙的兒童更需要多方面專業人員的幫助。

在特殊語言障礙方面，因語言障礙而被轉介至兒童體能智力測驗中心的學前兒童，和其他國家（如英國、瑞典、意大利、日本等等）類似的兒童,在學習母語時所表現出來的困難極為相似：和同齡發展正常的兒童相比，他們較遲才開始學習說話，而在語言學習方面，其中較為明顯的現象，是他們的詞彙增長速度較緩慢，理解能力或表達能力亦非常有限。此外，多種語言的研究提供了充足的數據，證明在就學前已有特殊語言障礙的兒童，在學時出現讀寫能力問題的機會比較大。較遲學會說話和語言溝通上有困難的兒童，在閱讀、默寫方面若同時出現問題，學習就因而面對雙重困擾。美國最近發表的一項權威性的研究顯示，估計約有百分之七的學前兒童有特殊語言障礙（指在正常智力的情況下出現的語言學習問題）。及早為他們提供矯正與治療，實在相當重要。

在讀寫障礙方面，現有證據顯示，閱讀和書寫（以及默寫）困難的「病源」是一致的。診斷學童在這方面的問題時，應著重分析他們的讀寫錯誤模式和其心智活動過程，然後能夠作出有效的矯正。從處理本地在學前已開始表現有特殊讀寫困難的個案資料顯示，及早識別及矯治讀寫障礙是非常重要的，而通過及早作出介入治療，基本上可以避免學生出現繼發性的學習困難和情緒問題。

在發展性協調障礙方面，綜合有關研究顯示，約有百分之十的兒童由於有發展性協調障礙，在學業及日常生活方面都受到影響。雖然發展性協調障礙不會隨著兒童逐漸的成長而消失，但有關研究指出，適當的治療可以有效地改善情況，而及時的適調方法更可協助他們處理在求學時期可能面對的困難。

現代腦部神經系統素描技術，有助確認特殊學習障礙在腦部結構和機能方面的特徵。透過研究和科技的發展，我們能夠更正確地將特殊學習障礙者分門別類，以便根據他們的具體癥結和能力，設定合適的矯正方法。

研討會中，學者們對融合教育背後的哲學理念曾加以討論。在處理特殊學習障礙兒童的問題上，現今的趨勢是希望普通學校能為他們提供適當的服務。為特殊學習障礙兒童為提供有效的教學方法，授課老師必須得到恰當的支援。有關當局更應該為這些兒童提供一系列不同程度介入的教育安排、服務和支援。

本會的學術小組認為，香港在面對兒童特殊學習障礙的問題時，以下的工作範疇及論題極待關注：

1. 臨床工作者、前線工作人員、以及學術界人士，必須通過各方的努力，進一步檢討本地現時處理兒童殊學習障礙的方法及搜集有關的資料，收集本地數據及常模，發佈明確指引，以便有關人員識別早期徵兆。同時，製訂具科學性而又效度高的測試工具，作為初步檢核、深入評估及提供輔助之用。

2. 負責教師培訓的專業人士，必須爭取“殊需要兒童導論”作為所有職前教師培訓練課程的必修科目。在職教師及校長亦必須定期參加工作坊，使他們有機會更新自己在調適課程方面的知識與技巧，包括如何應用輔助科技幫助及教導有特殊學習障礙的兒童。

3. 家長必須提倡推廣公眾教育，加強家長組織網絡，互相支持，為特殊學習障礙兒童爭取應有的權益。

4. 行政人員及政策策劃者，必須增加對特殊學習障礙兒童的各種需要的了解，在檢討現存的補救教育方向帶起領導作用，並釐訂為特殊學習障礙兒童提供必要而又適切的教育的政策。

專責小組呼籲有關專業人士，減少對「模式」和意見上的爭論和分歧（例如：“教育模式與醫學模式的對立”或“英國模式與北美模式的對立”），轉而集中討論有研究支持而經得 反覆驗證的客觀資料。關於特殊學習障礙的定義，本會學術小組已發表了綜合多個界別專業意見的立場聲明，而專責小組成員亦發表了多篇主要文章。我們期望這些聲明及文章，加上有關特殊學習障礙的會議及活動，會令香港的前線工作者，不再對「特殊學習障礙」感到陌生 ，也不再聲稱「特殊學習障礙」在香港是一個鮮為人知的課題。既然特殊學習障礙的兒童需要的是多方面專業人員的幫助，為他們建立一個有共同目標而且有效率的協作隊伍，看來是刻不容緩的事。

The Hong Kong Society of Child Neurology & Developmental Paediatrics
Working Party on Specific Learning Disabilities

香港兒童腦科及體智發展學會
特殊學習障礙專責小組

Mission

To review Hong Kong's current professional and administrative practices and governmental policies for children with Specific Learning Disabilities, to take measures for bringing about the necessary and appropriate changes therein, and to present a final report to the Council of HKCNDP at the end of this project.

Terms of Reference

a. To convene experienced members from Hong Kong's relevant professional disciplines involved in SLD to allow a comprehensive team approach.

b. To review current theories, research findings and clinical and educational priorities.

c. To promote better understanding of SLD amongst professional and lay people.

d. To undertake research on SLD with particular reference to Chinese children and to Hong Kong.

e. To bring about appropriate changes to effect more effective and efficient provisions for children with SLD.

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