DEVELOPMENTAL LEARNING HISTORY FORM (DLHF)©
'THE HOW & WHY'
DLHF USER'S MANUAL ©

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A. WHAT IS THE DLHF?

The DLHF is a qualitative descriptive checklist intended for routine use as part of the psycho - educational assessment of children aged 5 to 12. It is designed to gather vital background information, developmental history, and a broad range of behavioural ratings from an adult familiar with the child's life. It also elicits the reasons and concerns over why the assessment is being sought.

B. HOW DOES THE DLHF FUNCTION?

The DLHF is designed to assist in the diagnosis of learning and behaviour difficulties that have been identified by the parent, teacher and/or medical practitioner. Part of it may also serve as a brief screening tool for pre-schoolers. The DLHF can be posted or emailed in advance or handed to the parent/carer at the time of assessment. Its content should be synthesised with testing results, observation and other checklist sources to facilitate diagnosis or case formulation. It can be cited as a source in the report's bibliography. Occasionally completion is warranted in tandem by a second party such as father or grandparent, enabling different perspectives to be reconciled. The DLHF is not intended for teacher use; other targeted tools are more appropriate.

It may be necessary for the parent/carer to also complete other standardised rating scales for particular diagnostic purposes. These might include adaptive behaviour (eg ABAS 3, Harrison and Oakland, 2015), communication skills (eg CCC-2, Bishop,2003), executive function (eg BRIEF, Gioia,2000; ADHD symptom list, Amen,1995), autism and its phenotypes (eg ASSQ-REV, Kopp and

Gillberg,2011; CAST, Williams et al,2005,2006; PDDBI, Cohen and Sudhalter,2005; HSQ-ASD, Chowdhury et al, 2016).

The DLHF may obviate the need for other expensive and possibly over- inclusive generic commercial checklists. These include the ASEBA (Achenbach and Rescorla,2008), the CBRS (Connors,2015) and the BASC system (Reynolds and Kamphaus, 1992) among others, as used widely elsewhere. These all rely on Likert scaling leading to composite standardised scores, whilst the DLHF utilises bipolar ratings in a qualitative manner. The psychometric scaling benefits of this approach are explained subsequently.

C. RATINGS VERSUS SELF REPORT

Checklists completed by adults sometimes need to be complemented by self-report checklists completed by the child directly, during the assessment session, particularly for matters such as Anxiety. Items are generally read directly by the child, or else may need to be read aloud to the child, while he/she responds non-verbally by standing on cards or pointing to cards bearing the alternative choices. Validity and reliability of the differing forms of administration appear to be comparable. The most effective self-report checklists for Anxiety issues utilise a broad-spectrum format that covers sub scales of social anxiety and shyness, separation anxiety, physical fears, generalised anxiety symptoms and obsessive-compulsive tendencies (eg Birmaher et al. 1999; Spence,1998).

The Spence Children's Anxiety Scale(SCAS) was standardised on 8 to 12-year old's but is useful beyond that range. An updated version is now available with more rapid and convenient scoring, called the CASC (Children's Anxiety Spectrum Checklist, Schultz,2018).The core question used in CASC has also been changed from one based on perceived frequency ("How often does this happen to you?") to one based on "goodness of fit" ("How well do each of the following describe you?").This was regarded as more developmentally appropriate and valid. It has not been possible so far to examine the effect of this subtle change on response patterns. The CASC will be available later as a download.

The SCAS and CASC measure developmental /familial aspects of Anxiety, to be distinguished from reactive, transitory Anxiety, Depression and Stress, as commonly measured by the DASS (Lovibond and Lovibond, 1996). DASS has been widely used in Australia with adults and provides approximate indicators of severity independent of age. However, DASS can be useful with adolescents and older children, although some distressed adolescents give extreme responses requiring measured interpretation.

Self-report measures of coping can also be useful with some adolescents. Conversely, self-report measures of self-esteem for any age have been found to have dubious clinical utility for either diagnosis or monitoring purposes.

D. A MULTIPLE METHOD APPROACH

In practice it is necessary to mix commercial and research-based tools downloaded from the internet or from refereed journals. This multi method approach triangulates and synthesises all relevant sources within the limitations of their known reliability and validity. Such integration of varied test and ecological sources is strongly recommended by multinational/ multidisciplinary consensus study reviews (Bishop, Snowling, Thompson and Greenhalgh 2016).

The DLHF will most commonly be utilised in relation to neuro developmental disorders as per DSM 5 (or ICD 10). Of these the most common presentation is Specific Learning Disorder (SLD, sub types Dyslexia/Dyscalculia, F 81.0). Less prevalent is Speech Sound Disorder (F 80.0) and Borderline or Mild

Intellectual Disability(R41.83). There are also various forms of co-morbidity within this cluster, including between High Functioning Autism (F 84.0), SLD, ADHD/ADD (F90.0, F90.1, F90.2), Specific Language Impairment(F80.2), Speech Sound Disorder(F80.0), and Social Pragmatic Communication Disorder (F 80.8) (Norbury 2014, Whitehouse et al 2009, Bishop 2016). One also needs to be wary of differing labels used in different countries, especially UK versus US.

The DLHF may help alert the practitioner to these overlapping features, leading to the inclusion of further targeted instruments. The DLHF may also draw attention to other developmental problems that are independent of a neuro developmental framework but are equally important to effective diagnosis and intervention. These include:

- generalised immaturity in the early school years,
- the effects of missed schooling or inappropriate/inadequate teaching,
- the role of family disruption factors, inadequate parenting, or chronic neglect.

E. DESIGN OF DLHF

All ratings in the DLHF are bipolar in format, not dichotomous (yes/no) or Likert scales of severity or frequency, typically with 0/1/2 or 0/1/2/3 scaling metric. Likert scales have long been adopted in commercial checklist systems used here and in the USA. The rationale for the bipolar format was enunciated by Rowe and Rowe (1997,2004), who questioned the validity of psychometric assumptions in Likert scaling generally. This included the questionable validity of composite scores, most problematic in the domain of Attention/Inattention issues and contributing to misdiagnosis/overdiagnosis of ADHD/ADD. The bipolar format has also been characterised as a semantic differential rating scale, originally developed by Charles Osgood. The arguments about the merits of these two kinds of scaling have not been addressed in the wider research literature and appear to have been overlooked or ignored by commercial test publishers.

Rowe and Rowe employed 5-point scaling; each item having a positive and negative side and neutral mid-point. This reduced the scaling effects evident in other procedures. The bipolar format was adopted in their RBRI checklists for both parents and teachers (Rowe and Rowe 2004) for epidemiological research and as standardised clinical tools (N=25 ,000). This format has been employed in the DHF with permission and employed only in a descriptive or qualitative manner. Items from RBRI have been deleted or modified, and new items added, to better characterise SLD and associated problems, based on face validity and discriminant utility demonstrated in clinical practice.

F. CONTENT OF THE DLHF

The seven-page form is set out under the following headings to elicit a holistic, subjective and ecological profile of the child and the family based on the parent's unique knowledge.

Neo Natal History. This encourages open description of early birth difficulties or prematurity and any other developmental concerns in the first six months. Written answers occasionally need to be elaborated by questioning. A statement indicating that neo natal issues did not contribute to current concerns is the most common outcome; other causal concerns are identified as needed.

Early Development 1-4 years. This consists of descriptive bipolar items covering carer's recall of early language, preschool literacy skills, the role of early ear infections, early executive skills, and general social adjustment. This section may also be used by itself as a screener.

Family History. This section elicits recall by biological parents of their own academic skill difficulties whilst at school, as well as recollection of delayed language development, immature speech, or other behavioural concerns. There is further space for recollection of similar problems in the wider biological family, including grandparents, uncles/aunties, and cousins. This information is helpful given the prevalence of familial factors in many of the neuro developmental disorders. Persons diagnosed with ASD are also more likely to have extended family members who display sub-thresh hold phenotype signs. These associated family problems may be included in the report, albeit in a discretionary manner, although the validity of the labelling is often not able to be verified.

There is further space to record second language use at home by custodial parents and immediate family. This section is to be used as needed. It can be difficult to determine for some groups, including Indigenous children in remote communities. The role of English as a second or even third language in delaying school literacy learning can be easily overlooked. This is often due to the extent children display superficially appropriate spoken language from peer group exposure. It is helpful to ask when the child was first exposed to English as a second language and explore how this has impacted on literacy learning.

Motor Skills. This set of bipolar items surveys parental impressions of fine and gross motor skills. These include general gross coordination, sense of balance, handedness, proficiency in running and ball skills, and general practical aptitude. There are also fine motor items on cutting, tracing, pencil grip, control of writing, and letter formation. These are not intended to identify Dyspraxia as a comorbid condition but do act as a screen for common motor clumsiness problems. Prevalence of significant difficulties tends to be low.

These items will often confirm that messy, poorly developed handwriting, frequently associated with SLD, is a function of lack of practice or explicit teaching, and not a psycho-motor problem as such. The items may also direct attention to limited family efforts to promote foundation skills, preoccupation with electronic gadgetry, as well as lack of explicit teaching. Any problem usually needs to be addressed by practice and teaching by the teacher rather than an OT referral.

Executive skills. This set of bipolar items covers a range of indicators that assist in corroborating SLD and other concerns. They include listening comprehension, short term auditory memory (verbal and numerical sequences), attentiveness, distractibility, restlessness, and capacity to remain on task, and general attitude towards literacy. They are not clustered thematically. Children with SLD are frequently characterised as having executive difficulties by parents or teacher. These observations usually reflect the child's primary struggle with literacy and numeracy, and are used as an additional indicator of SLD. Such ratings do not by themselves indicate significant underlying attentional or associated executive difficulties.

Social – Emotional. This set of bipolar items covers personal adjustment at home and at school, peer relationships, and relations with the teacher from a home perspective. They give a holistic sense of general adjustment and coping issues that may possibly be connected to the learning and communication difficulties identified.

Physical Health. This set of bipolar items covers sleep pattern, diet, and possible psychosomatic symptoms. Such health issues are often an indirect consequence of significant academic delay and/or communication difficulties, although this link may sometimes not be recognised for what it is by the parent, the teacher or the GP. A holistic synthesis of problems and possible links is invariably useful. A description of known Medical conditions and prescribed Medication is also sought. Current medications are included in the report, but other medical history is dependent on the circumstances.

A description of previous illnesses or stressors identified by the caretaker is typically not necessary, except for forensic purposes.

Outcomes. A descriptive listing by the parent/caretaker of a child's perceived strengths and personal qualities is often very revealing, and yields information not picked up elsewhere. The same applies to descriptive listing of major concerns about the child. The caretaker's personal

expectations that prompted the referral are usually known in advance, but this provides confirmation.

G. SUGGESTED FORMAT FOR A PSYCHO EDUCATIONAL REPORT

PERSONAL This includes all personal details of the child and parent/carers, address, DOB, school, grade and teacher, contact phone numbers and email addresses where appropriate, and details of who referred, when and why.

BIBLIOGRAPHY Provide a bibliography of tests and checklists employed, and list resources cited, (eg a letter from a teacher or medical practitioner or other prior assessment reports). Note name, date and position wherever possible. The bibliography may be located at the start of the report or placed in an appendix.

BACKGROUND Provide a summary of pertinent family and developmental information. Include records of prior screening of vision or hearing, need for spectacles and any impact on diagnosis. Background details relevant to a holistic profile but not pertinent to the diagnosis are included on a discretionary basis. Use of dot points is often preferable and convenient for disparate material.

ASSESSMENT Standardized test scores and composite scores for checklist subscales, together with percentiles, Z scores or age equivalents, are better summarised in an appendix. This also facilitates ready access by a health or education professional. In the report it may be more appropriate to cite percentiles as a convenient common indicator whilst disparate findings are synthesised. A report is a permanent record for later reference, so full standardised test results are obligatory under professional standards and useful.

SUMMARY It is necessary to provide an explicit, detailed diagnosis in the report with any co-morbidities. It is equally appropriate to note when findings are still tentative or of dubious reliability, not uncommon with younger children. Nothing is achieved by disguising or "watering down" information that may be distressing for the parent/carer.

Broader implications and longer-term prognosis are often not addressed explicitly in a report with short term goals. However, they do need to be addressed and discussed subsequently, in a manner appropriate to the adult responsible. Parents have a right to be fully informed, even if they do not articulate their need. How and when the child is engaged about the outcome is also problematic and dependent on maturity. A range of significant adjustment issues is triggered by young people and adults who are not informed nor counselled about their neuro developmental diagnosis and prognosis. There is emergent literature that problems evident in childhood may be quite different in adulthood (Whitehouse et al,2009,2009; Bishop et al,2016).

It is usually preferable to set out information within separate domain headings, such as reading and writing skills, motor skills, etc. Various sources, for example standardised test results, Informal error analyses, checklist scores and informal ratings need to be synthesised within each domain. Use dot point layout as much as possible.

Recommendations should be pragmatic, realistic and based on available resources. Extra staffing will typically be limited, and greater use of age peers, siblings, cross age tutors or mentors will need to be considered. Children with SLD typically need to read and write more frequently and be exposed to literacy activities closely matched to their current level of functioning. This may include reading/teaching to younger peers, and rapid recall of number facts with a peer partner using flash cards or number games. Gains are typically incremental, and change is more likely if goals are limited**. Record if it is desirable to conduct a follow up review of progress.**

Appendix List standardised scores with available percentiles, age equivalents, Z scores etc. Likewise provide composite scores for all tests and checklists, but only when they are a valid and consistent reflection of the parts. Always record where reliability is suspect or incomplete. It is helpful to add a routine paragraph length description of means and SDs for each standardised instrument utilised to assist the reader not familiar with their technical features. Some adults struggle to comprehend the normal distribution curve underpinning many instruments, and few are comfortable with technical detail.

H. MARKERS OF SLD

The core indicators of SLD will be evident in depressed standardised score measures of graded Word Reading, Spelling, and Number Skills. A diagnosis based on sub test scatter from a cognitive battery has long been shown to be inappropriate (Gnys, Willis and Faust, 1995), yet this approach continues to be promoted by commercial testing interests as “best practice”. The core role of information from literacy and numeracy assessment in determining diagnosis of SLD has now been reemphasised in DSM 5.

Numerous academic skill batteries are available; no single instrument is recommended. A co normed battery rather than disparate tests is preferable but not indispensable. Greater precision and time efficiency is achieved using tests subjected to formal Item response analysis such as Rasch scaling (Elliott,2011; Klein,1993, p68)). The model works best when there is a clear latent trait, as in measures of academic achievement and most cognitive functions Elliott ,2011; Klein,1993). This also enables effective, quantified retest measurement of later improvement if required. Most major batteries now have Rasch scaling, although the Wechsler scales (Wechsler et al 2015) inexplicably still do not. The TRMA tests of speeded recall of mental arithmetic skills (Childs 2018) should be included routinely in the testing session from year two, as core diagnostic information.

Ability to write a descriptive sentence or narrative account of some familiar theme should be added from year two (eg “What did you do for me today? “What do you want to be when you grow up?). This should be inspected subjectively for capacity to write in sentences, use of grammar, including tense, capitals and punctuation, spelling errors, fluency of ideas, and clarity/evenness of handwriting. Certain achievement batteries feature a standardised measure of writing capacity; yet informal assessment is more than adequate, and equally reliable.

A Speed of Handwriting Test should be included routinely from year three. Several options are available on line. The Handwriting Speed Test (Wallen. Bonney and Lennox ,1996) is recommended, with grade based, gender specific Australian norms for sentence copying. In practice this test can be timed over one minute instead of the three recommended, without loss of reliability. It also provides additional sampling of hand writing skill.

Standardised scores will typically indicate severity in the 10 to 15-percentile range for most childhood SLD. Any variability reflects the interactive role of Intellectual ability, verbal skills, and

teaching/learning effects; there is no recognised algorithm to interpret or inform this. Most children are quite consistent in their degree of delay across all literacy and numeracy areas, although handwriting speed is more noticeably depressed.

Diagnostic separation into Dyslexia (reading/writing delay) and Dyscalculia (numeracy delay) is still problematic and contentious (see TRMA Manual), even though widespread in the UK and in Australia. A generic diagnosis of SLD is possible in nearly all cases, consistent with DSM 5, versus the need to specify a Dyslexia/Dyscalculia duality. Pure Dyscalculia (i.e. without Dyslexia) is rare in clinical practice, if indeed it exists.

The criteria of poor standardised scores for Word Reading and Spelling need to be juxtaposed with qualitative error analysis. For younger children this will be evident in letter and number reversals, confusion of b/d/p/q, faulty discrimination of vowel sounds or other digraphs (blends of two letters), addition or deletion of sounds in the way words are spelt or read, and other idiosyncratic problems of phonological awareness and word segmentation. For adults and adolescents difficulties will usually be evident in decoding difficulties with longer multi-syllabic words, words with irregular spelling rules, and associated comprehension difficulties. This subjective error analysis is vitally important to a full diagnosis and to any advice offered. Stimulus cards for these are available as downloads and may be laminated for regular clinical use.

Additional diagnostic testing of separate contributory skills, if required, will depend on how much is revealed by core academic skills testing. There is no agreed nor accepted algorithm for what is critical for diagnosis or delineation of remediation needs. Over testing remains commonplace.
The common diagnostic measures involve auditory discrimination skills (Wepman, 1998), non-word reading (Snowling et al, 1996; Crumpler and McCarty, 2004; Gibbs and Bodman, 2014), rapid naming speed (Wolf and Denkla,2005; Korkman et al,2007; Gibbs and Bodman,2014), phonological awareness (Korkman et al,2007; Neilson,2005; Gibbs and Bodman,2014), sentence repetition (Korkman et al, 2007), and word generation by initial letter sound (Korkman et al, 2007). Other sub-categories of these skills are also utilised, too many to describe here.

Detailed cognitive testing leading to one or more indices of General Conceptual Ability (IQ) is often not prerequisite for a diagnosis of SLD or other communication difficulties. It is however helpful to include a standardised measure of vocabulary such as naming vocabulary or word definitions. A test of ability to recall sentences of increasing length is often revealing too, as is digit span testing (forward and backward) of short term memory.

More extended measures of verbal or nonverbal ability are sometimes needed when it is suspected that the child is especially bright or advanced verbally. This can lead to enhanced literacy skills, especially in word reading, despite underlying SLD difficulties, and can disguise the disability because the child is seen to be managing.
. It is equally important to conduct further cognitive testing if the child is suspected of especially poor conceptual ability in the borderline to mild disability range, which may be evident from parental ratings in the DLHF. It is unfortunate that commercial cognitive batteries now have consumables that assume, and virtually pre-emt extensive cognitive testing in every case. This is contrary to the spirit of the original British psycho educational battery (BAS) with co-normed achievement measures (Elliott,1983; Elliott, Murray and Pearson,1979). The BAS had separate score sheet consumables for each scale, which was far more efficient and effective.

A passage reading test of comprehension skills is preferred by some psychologists. This is typically in addition to a graded word reading test, although some prefer a dual word reading/comprehension format. Passage reading has very high concurrent validity with word reading skills (Neale, McKay and Childs,1986), and is typically ancillary to a diagnosis of SLD. However, it may provide useful profiling for children with ESL difficulties or other language impairments. Use is a matter of diagnostic decision making within the limited time constraints. It is not typically warranted for younger children; a word reading test has greater predictive validity for SLD. Widely used Australian instruments available are the York batteries and its predecessor the Neale Analysis, available from ACER or GL Assessment.

Number skills testing likewise requires qualitative observation and error analysis in addition to standardised testing. A score sheet on which the child/adult records their responses and "working out" is crucial for displaying errors in setting out, use of marks for counting on, or other inappropriate strategies. It is vital to identify number reversals, confusion over number recognition for 2, 3 or 4-digit numbers, confusion between processes (adding versus taking versus multiplying), uncertainty over computation rules (eg subtracting smaller from larger value), and erroneous layout for long multiplication and division. It is also vital to be alert to ongoing reliance on "counting on "in any calculation, by using fingers, by score marks on paper, or sub-vocally. Observation of sub vocal counting as an indicator of SLD is sometimes hard to identify in action. Describe these error strategies fully in the report. The TRMA indicates, in addition, that slower mental arithmetic processing and higher frequency of simple errors are important markers of SLD throughout primary grades and into adulthood. Subtests involving switching are especially indicative of SLD difficulties in deciding which arithmetic process applies.

I. USE OF THE DLHF IN DIAGNOSIS

Observations provided by the parent/carer should be added to standardised test and qualitative error analysis to provide the basis of a triangulated, multi method synthesis for diagnosis.

1) **Family History Details.** There is unequivocal evidence of a familial basis for SLD and other language/communication difficulties, including ASD comorbidity (Bishop et al,2016; Norbury,2014;Whitehouse et al, 2009) Most parents readily recall signs that are consistent with having SLD themselves or recognising indicators in other family members (it can sometimes skip a generation).It is seldom necessary or appropriate to employ additional direct testing of parent(s) with suspected SLD to verify this unless it is still impacting significantly on their own vocational prospects or mental health.

2) **Post Natal Development** These issues are not commonly associated with SLD. Inclusion is discretionary.

3) **Development 0-5 years** Signs of early language delay and/or immature speech precede SLD in some children, although other parents report no concerns until the child engages in formal schooling. A child's struggle with reading, writing and number is usually evident within 12 months of beginning formal schooling, and SLD can usually be diagnosed at that time. Useful markers of later SLD are:

    I. Early confusion of sounds
    II. Early difficulty learning alphabet
    III. Difficulty remembering telephone numbers
    IV. Difficulty with recall of days of week

V. Preschool executive difficulties are not usually predictive of SLD, but parent or teacher ratings of executive problems do become important pointers once the child attends school
VI. Early confusion of numbers
VII. Letter and number reversals are commonplace early but do assume an indicative role after a few months at school.

4) **Motor Skills** Previous UK research suggested comorbidity between SLD and motor difficulties, including Dyspraxia (Kirby,1999; Ott,2007; Portwood,1999). Elsewhere this link was not found and had no utility in planning the child's progress (Kaplan et al,1989,2001; Silva and Ross,1980). Most children with SLD display messy and /or slow handwriting but otherwise have normal fine and gross motor skills. There is rarely justification for a targeted sensory motor programme and referral to an OT is unwarranted. Early screening of clumsy children is certainly possible, and intervention has real benefit for social confidence and self-esteem (Short and Crawford,1984, 1991), but has little direct impact on academic learning.

5) **Executive Skills** Items in this section cover language use, executive skills, listening skills and task approach behaviours at home and at school. Children with SLD are typically described as having executive difficulties in attention, concentration, distractibility and perseverance etc by parents and usually teachers. These descriptors should certainly be regarded as corroborative evidence of SLD, but not of ADHD or ADD. Significant academic delay is occasionally not even identified by the teacher due to lack of diagnostic skills testing in some schools; over reliance on NAPLAN multiple choice testing may contribute.

6) **Social-Emotional** This section considers a spectrum of issues that may be linked to poor coping occasioned by the SLD.A synthesis of problematic behaviours can be very useful; it alerts parent, teacher and sometimes GP to the wider impact of learning difficulties.

7) **Physical Health** This section provides a spectrum of issues pertaining to possible psychosomatic responses by the child such as evident sleep problems, poor diet, headache, stomach ache, scratching or picking skin and the like .A full synthesis is invariably helpful.

Contact by email with feedback or queries about the use of
'HOW & WHY' DLHF MANUAL©.

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