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SNAP – what it is and why we need it



Current difficulties with identifying specific learning difficulties

Specific Learning Difficulties (SpLDs) are not well understood. They affect large numbers of our young learners, and we need to be able to understand, identify and respond to them with optimal effectiveness and precision if these learners are to reach their potentials.

But our knowledge of SpLDs tends too often to be piecemeal and lacking coherence. It is an enormous, dynamic and complex area of study. It is not well mapped. As with medieval cartographers, information is gathered from different travellers who are coming at it from different starting points, and with different purposes – some nice pieces of accurate detail around the coast, but areas of hinterland still labelled ‘*Here be Dragons*’. . . .

Because of this, our SpLD interventions are neither as precise nor effective as they might be. SNAP allows us to make them more precise, more effective.

There are at least five potential sources of confusion when we set out to identify a specific learning difficulty:

1. **Overlap of characteristic features:** pupils who present in the same ways in the classroom may have underlying needs that are very different, and need different responses from the school.

For example, pupils who are dyslexic, or dyspraxic, or ADHD, or language-delayed, may all lack concentration, be restless and distracted, and be unable to sustain reading or writing tasks.

For one pupil, the difficulties may stem from inherent difficulties in attention – because of his or her poor attention, the other skills have not been learned, and poor literacy and underachievement is a *consequence* rather than a cause.

For another pupil, with a similar classroom profile, the difficulty may stem from a weakness in distinguishing the subtly different sounds that make up words. Here the poor literacy is the *cause*, and the distractibility and poor attention the consequence.

2. **Co-morbidity:** there is likely to be more than one SpLD present in the same pupil. SpLDs do not often occur in isolation. Co-morbidity is the norm, rather than the exception; so where there is evidence of one specific difficulty, it is reasonable to expect that there might be at least one other (see, for example, Gillberg *et al* 2006). For example, a pupil displaying characteristics of Asperger’s Syndrome may well show some evidence of dyspraxic difficulties, as well as significant attentional problems.

Rasmussen and Gillberg (1999) commented that ‘At present, the most common practice seems to be to diagnose only one syndrome. For instance, if a ten year old boy has a

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combination of multiple motor and vocal tics, pervasive attention-deficit problems, and dyslexia, it is quite common to diagnose only Tourette Syndrome, even though a case could be made for diagnosing ADHD and dyslexia also. This *failure of diagnosis* [our emphasis] should become less of a problem once there is a general acceptance that co-morbidity is common (perhaps the rule). . . .’

Whitmore and Bax (1999) make the same point: ‘. . . to be consistent one would . . . have to make multiple diagnoses to account for a variety of specific disorders, *though in practice only a single diagnosis is made, e.g. dyslexia or ADHD* [our emphasis]’

Gilger and Kaplan (2001) suggest there is a high probability that a child with a reading difficulty will present with a co-morbid difficulty of some kind.

The complexity all this implies is nicely captured in Figure 1, from www.portables1.ngfl.gov.uk/ssoames/dyspraxia.htm.

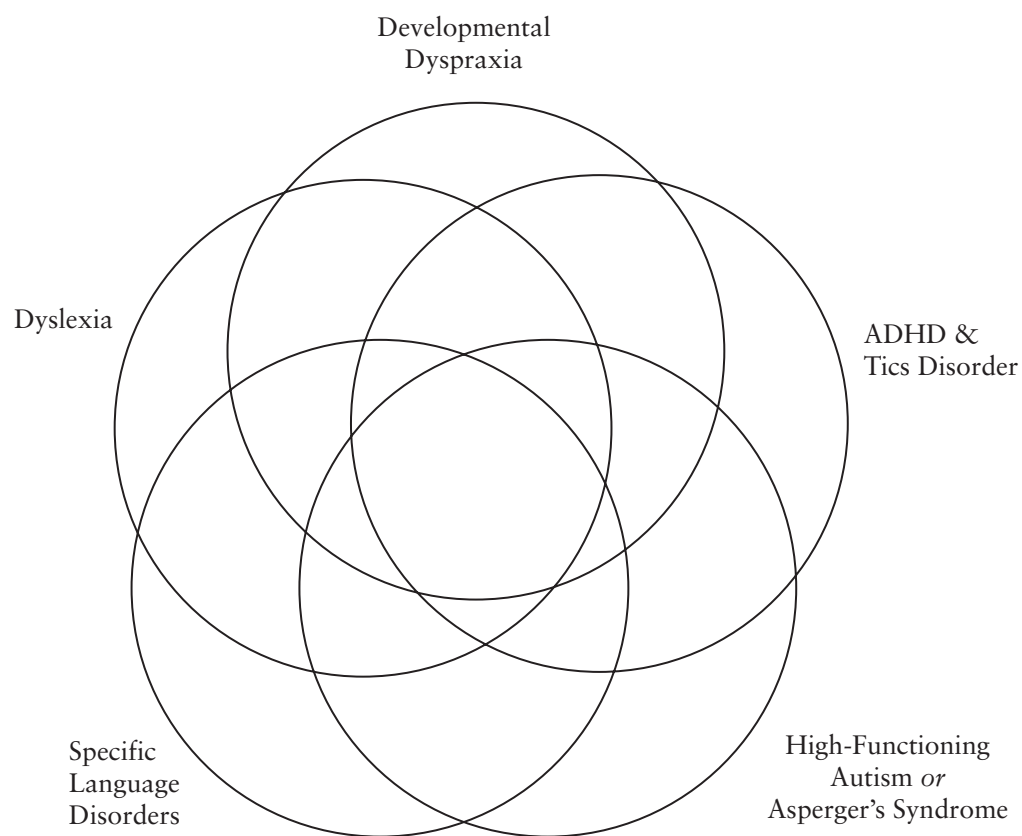


Figure 1: The typical overlap of specific learning difficulties (after Dr Sidney Chu, 2000)

3. **Meanings attached to labels:** even when we decide upon a label, it may mean quite different things to different people. There is a continuing lack of consensus about definitions. The same words and labels may be used in quite different ways by different people.

For example, does *dyslexia* mean:

- a discrepancy between apparent academic potential and current levels of literacy?
- or is it best defined as a ‘syndrome’, a cluster of characteristic features regardless of intellectual potential – for example, poor organisational skills, delayed motor development, left/right confusions, poor balance, weak working memory, poor sequencing, etc?
- or is it just a label for *anyone* for whom reading and spelling does not develop with normal ease?

In practice, it appears that it can be all or any of these things – and while issues surrounding the definitions of dyslexia have received a lot of attention, there is equal lack of consensus over many of the other labels that we use for other specific difficulties.

4. **Different professional perspectives:** the difficulties are compounded still further by the range of different professionals who may be involved with an SpLD child. Portwood (2000) speaks of ‘. . .the difficulties and frustrations experienced by children and their families who move between professionals in an attempt to obtain a diagnosis’.

Each professional approaches the child from the standpoint of his or her own professional perspective. This is natural and proper – but it sometimes leads to specific deficits being identified and treated that are only part of the picture. Sometimes the identified deficits may self-evidently not be the core deficits – but in the absence of an overview of the child, they may, at least for a while, dominate our responses.

5. **A description, not a diagnosis:** lastly, there is a spurious precision in our use of these labels. Affixing a label implies some kind of certainty about just what causes the difficulty, what it stems from. Yet the most rigorously derived label for a specific learning difficulty may still be no more than ‘a description dignified as a diagnosis’ (Whitmore and Bax 1999).

What SNAP does – and what’s new in Version 3

SNAP addresses the first four of these problems, at least in part. It does not resolve the fifth: we are left still with only a description, not a diagnosis – but it is an incomparably more precise, useful and effective description.

SNAP provides a systematic and comprehensive overview of a pupil’s SpLDs: it allows schools and parents to take the first steps towards an understanding that would otherwise require a significant and expensive multi-agency input. It is available in school. It is available for any pupil.

SNAP is a ‘wide-angle’ and an ‘in-depth’ diagnostic resource, in that it scans the widest realistic range of SpLDs and conditions (see below), at the same time as probing as deeply as possible to identify their underlying bases.

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For Version 3, the two core questionnaires have both been extensively revised. The *Pupil Assessment Questionnaire* has 101 (previously 118) questions for completion by teachers and/or classroom assistants, while the *Information from the Family* questionnaire now has 32 questions for the parents/carers. Both questionnaires are provided in booklet form in the **Pupil Assessment Pack**, although it is also possible for the *Pupil Assessment Questionnaire* to be answered directly on-screen. The answers to all of these questions, or as many as possible, are keyed into the computer. The addition of a ‘don’t know’ option for each question means that ‘don’t knows’ are now differentiated in the analysis from ‘no apparent problem/not noticeably’-type answers.

As before, fifteen supplementary ‘diagnostic probes’ are available to help to provide answers if specific information is not known or is uncertain – probing, for example, word-finding, visual memory, balance, sequential memory, visual control, or phonological awareness.

Insight into a pupil’s self-image, both socially and as a learner, provides potentially valuable further understanding of how that pupil functions in the classroom. An optional and separate 20-questionnaire, *What I Feel*, is therefore also available to profile self-esteem via two sub-strands: Social Self-esteem and Educational Self-esteem. This is included in booklet form with the *Information from the Family* and *Pupil Assessment Questionnaires* in the **Pupil Assessment Pack**, but Version 3 also offers the facility for older pupils to answer the *What I Feel* questions directly on-screen, if preferred.

The underlying principle of the package is essentially very simple: the computer program simply matches this matrix of data against checklists for the twenty-four specific difficulties and conditions assessed by Version 3, to identify those apparently most prominent. This process allows the ‘centre of gravity’ of any difficulties to be identified, from the often overlapping presenting features.

SNAP Version 3 reorganises, groups and refines the range of factors that might contribute to a pupil’s learning, and now profiles 24 (previously 18) specific learning difficulties and related factors, including self-esteem. Some areas have been subdivided into distinct sub-strands, as shown in Table 1 and Figure 2. For example, **SNAP** Version 3 looks at attentional and hyperactivity difficulties as three potentially separable strands: attention deficit, hyperactivity and impulsivity. Similarly for visual processing, it differentiates the more purely neuro-physiological factors such as Meares-Irlen Syndrome and ocular dyspraxias from the more perceptual and cognitive difficulties involved in *using* and manipulating visual information, however effectively, or not, it has been received.

The results of a **SNAP** assessment can now be viewed as a ‘core’ profile (showing the eleven main strands) and ‘expanded’ to show the sub-strands, providing a much more detailed picture. As indicated in Table 1, some sub-strands appear more than once in the expanded profile – for example, dysgraphia is as relevant to DCD/Dyspraxia as it is to literacy difficulties.

Table 1: SpLDs and conditions profiled by SNAP

<p>Attentional and hyperactivity difficulties Attention deficit disorder (ADD) Hyperactivity Impulsivity</p> <p>Developmental coordination disorder (DCD)/dyspraxia Movement, balance, coordination and planning difficulties Sensory integration and sensory sensitivity difficulties Involuntary speech/motor difficulties (Dysgraphia)</p> <p>Dyscalculia</p> <p>Literacy difficulties Reading Spelling Dysgraphia Hyperlexia/specific comprehension deficit (Phonological difficulties)</p> <p>Working memory difficulties Auditory working memory difficulties Visual working memory difficulties</p>	<p>Processing speed difficulties</p> <p>Social awareness and communicative difficulties</p> <p>Spoken language difficulties Phonological difficulties Expressive/receptive language difficulties Auditory processing difficulties (Auditory working memory)</p> <p>Visual and visual processing difficulties Visual tracking and ocular control difficulties Meares-Irlen Syndrome Visual-perceptual/nonverbal difficulties (Visual working memory)</p> <p>Deficiency of essential fatty acid</p> <p>Lack of self-esteem Social self-esteem Educational self-esteem</p>
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The level of detail provided by Version 3's core and expanded Profiles clearly allows for even more effective identification and tracking of progress and change. Figure 2 (below) makes very apparent just how complex the factors may be that combine at any one time to affect an individual learner. The heightened awareness provided by the Version 3 profile should also allow a more sensitive understanding of exactly how a learner may have *changed* between consecutive SNAP assessments.

The SNAP profile is generated by computer analysis of the interacting factors – the 'blend' of SpLDs – that appear to make up each pupil's particular specific learning difficulty, and this in turn generates 'self-help' and information sheets which can be shared with class teachers and with parents. These are provided for all of the profile SpLD strands and sub-strands, and also now offer the facility to make the personalisation more age-appropriate to the individual pupil.

Another new feature in Version 3 is the facility to select and *compare* any two SNAP profiles, in order to review a pupil's progress and evaluate the effectiveness of any intervention programme.

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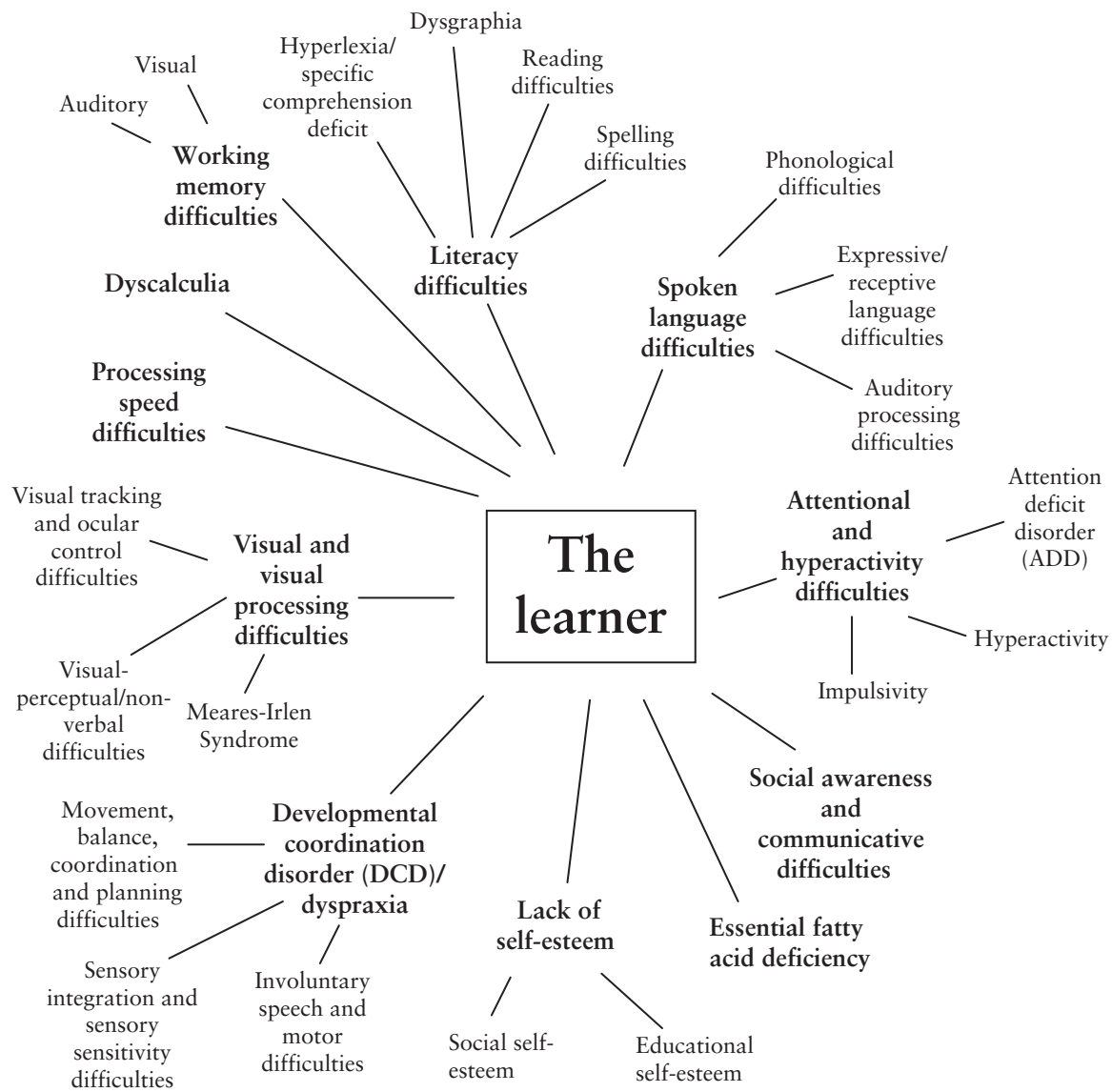


Figure 2: SpLDs and conditions profiled by SNAP

SNAP is not a ‘test’ – that is, it is *not* primarily a psychometric instrument. Instead, it is a means by which we can draw together and organise all that is known about a learner – from family, teachers, SENCO, classroom assistant – supplemented, where needed, with further information from the diagnostic probes. While some of these are quantitative measures, they are not standardised tests in the normal sense: they do not rank and discriminate with precision. Instead, they seek only to offer a bare clinical insight into whether there is a problem, whether modest or obvious, with a particular skill.

When should SNAP be used, and by whom?

SNAP is aimed at the 5–14 age range (the range within which the diagnostic probes were developed). It can also be used with older students if the diagnostic probes are not required to be used and if information from the family is available.

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SNAP is intended principally for use by the SENCO or Support for Learning staff, or person with equivalent responsibility, at school or local authority level, including peripatetic advisory teachers. It may, however, still be very useful in small schools where there may be no such designated person. Equally, it may be useful to educational psychologists, or health service practitioners involved in assessing or responding to learning difficulties.

At the school level, it will have particular value at the point at which a school is considering seeking support from beyond the school. In England and Wales, for example, this implies use by a SENCO or Learning Support staff at the ‘School Action’ stage, and informing subsequent support from external agencies, if/as ‘School Action Plus’ is implemented. **SNAP** will help you provide for these pupils whose difficulties are well established and already reflected in their Individual Education Plans (IEPs). With **SNAP**, those IEPs will become significantly more focused, directed and effective. In addition, **SNAP** will help inform decisions about *which* specialist would be most appropriate for onward referral.

SNAP may be equally – or even more – useful for pupils with subtler and less severe difficulties, who may not yet have an IEP, or need one. These pupils are unlikely to be the subject of an interdisciplinary case conference, or to be considered for direct assessment by such professionals as psychologists, paediatricians, speech and language therapists, or occupational therapists. The profile derived from **SNAP** should allow, to some extent, a much wider range of pupils to benefit from the insights derived from the full range of specialist professional perspectives. It will facilitate, too, well-informed communication with parents.

What is in the package, and how does it work?

Step-by-step instructions on how to use **SNAP** are given in Section 2. Its essential core comprises 133 questions, grouped together into eleven sections (twelve if the optional self-esteem instrument is used):

- | | |
|----------------------------------|----------------------------------|
| ■ Reading and spelling | ■ Attention and hyperactivity |
| ■ Handwriting and layout of work | ■ Memory |
| ■ Number work/Maths skills | ■ Posture, gait and coordination |
| ■ Speaking and listening | ■ Visual and perceptual ability |
| ■ Style of working | ■ Information from the family |
| ■ Social skills and behaviour | |

Most of these have a scaled choice of five answers, with guideline descriptors in the middle and at the two extremes, plus a ‘*don’t know*’ option – for example:

Visual discomfort when reading: is there evidence of excessive blinking, eye rubbing or grimacing?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
very evident		to some extent		not noticeably		don't know

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Most of the questions can be answered very quickly.

You should use the ‘*don’t know*’ option for each question only when none of the other options is appropriate, and you are simply unable to comment upon the extent to which that behaviour is or is not present. **SNAP** does not have to be exhaustive: it is primarily a means of bringing together, organising and analysing what is often already known about a pupil. When you choose the ‘*don’t know*’ option, then that question will no longer contribute to the pupil’s profile – but, obviously, the more data that *does* contribute to the final profile, the more useful, accurate and valid that profile should be.

As noted above, all of the questions are presented ‘on-screen’, but are also available in questionnaire booklets, one for use by parents (or carer/guardian) and another by class teachers and others in school who know the pupil well. Information from these differing sources would not necessarily be entered directly into the computer, or all at the same time. Completion of **SNAP** might involve you answering some questions directly on-screen, while entering answers to others from questionnaires completed by the family, class teacher or classroom assistant.

Where answers from different sources differ, you will need to make a professional judgement – but the nature of such differences may itself be informative.

SNAP is a powerful tool even where answers are not known or sought for all the questions – but obviously, the more thorough and well informed the input, the higher the likely quality of the output.

Where it is decided to include an analysis of a pupil’s self-esteem, the twenty further questions are given in the *What I Feel* booklet, as well as on-screen. Self-esteem can arguably only be reported upon by the individual himself or herself, and the *What I Feel* questions are phrased in the first person, for completion by the pupil concerned. But a pupil may be too young to undertake this validly, and you may decide that the questions should be answered by an adult or adults who know the pupil well. Alternatively, it may be completed by the pupil, but with the help and support of a suitable adult.

Self-esteem is shown separately from the SpLDs and other related conditions in the **SNAP** profile.

The SNAP diagnostic probes

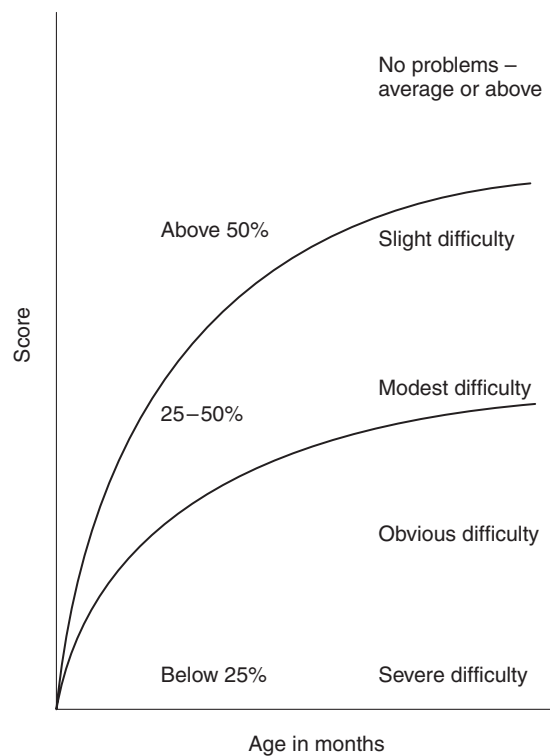
Fifteen supplementary diagnostic probes are included as photocopy masters at the end of this **User’s Handbook** to allow further insight for those questions where the information is not already known or easily accessed. Their availability is announced on-screen (from which they can also be accessed and printed directly), and in the questionnaire booklet, as the user reaches the relevant questions.

These probes are short and simple to use. Instructions on how to administer and interpret them are included in Section 6. None should take more than a few minutes to use. None is essential. They are:

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- | | |
|----------------------------------|---|
| 1. Timed Reading | 9. Visual Memory |
| 2. Phonological Awareness | 10. Common Sequences & Counting Backwards |
| 3. Non-word Reading | 11. Balancing Task |
| 4. Timed Spelling | 12. Bilateral Integration |
| 5. Figure Copying | 13. Picture Naming |
| 6. Timed Text Copying | 14. Visual Discrimination |
| 7. Word Finding & Verbal Fluency | 15. Vergence & Visual Tracking |
| 8. Backward Span | |

The probes should *not* be seen as providing anything more than approximate clinical insights – they do not aim to rank or make fine discriminations between levels of performance, and have not been standardised with this in mind. The graphs you use to interpret probe scores show shaded areas to indicate, from the trials, which scores were above 50% (i.e. no difficulties), between 25% and 50% (modest difficulties), and below 25% (significant difficulties). You use the position on each graph to identify the most appropriate option to tick for that skill.

**What SNAP gives you**

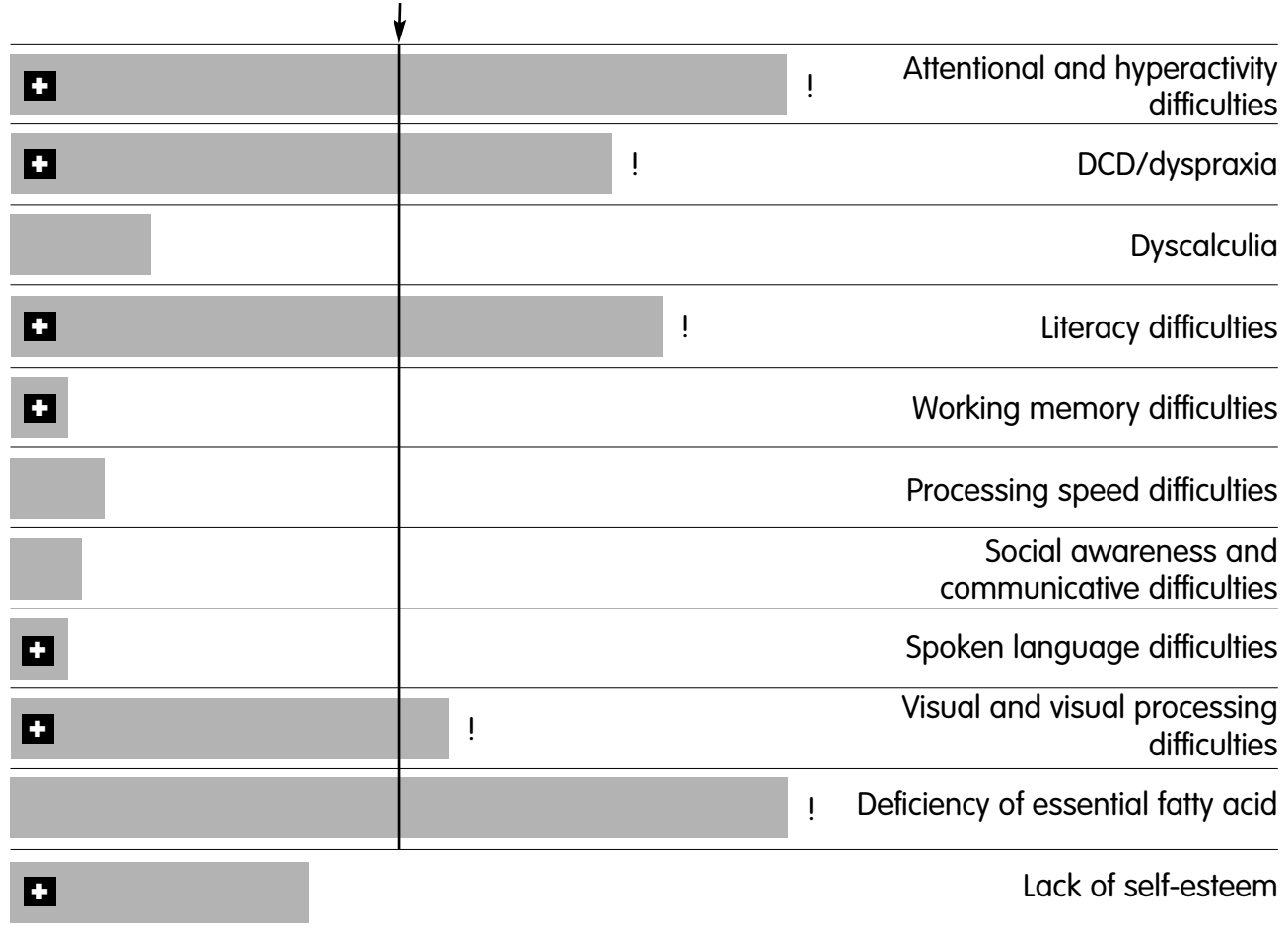
Once answers have been entered into the computer, the underlying matrix of responses will be analysed to yield the relative weightings of the difficulties and conditions detected.

SNAP then generates an on-screen profile (which can be printed) of the learner's apparent difficulties, based upon the answers to the questions. The initial **Core Profile** might look like this:

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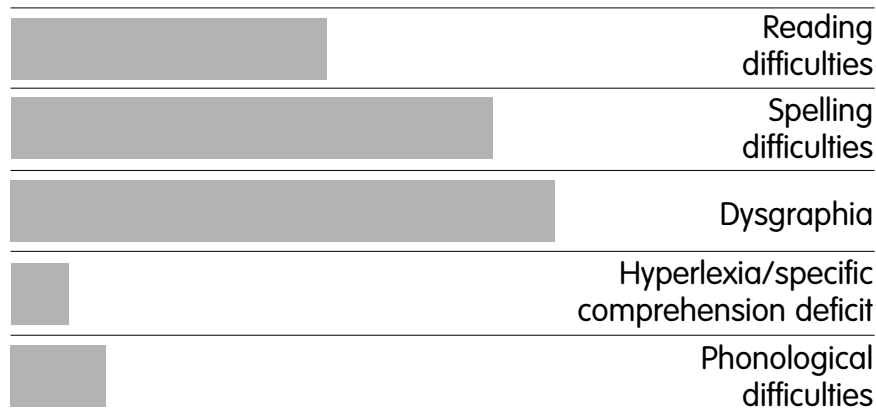
Jenny B's Core Profile

Baseline for Jenny – prominent stands are likely to be those to the right of this line



Having first identified the main problem areas in the 'core' profile, you can then click on the + sign shown beside most of the bars, to obtain an 'expanded' profile showing the sub-strands underpinning each area of difficulty and giving you a more detailed picture. For example, Jenny's 'expanded' profile for Literacy Difficulties, below, suggests that Jenny's reading is less of a problem than her spelling, and that presentation and page layout is perhaps her greatest literacy problem:

Jenny's expanded Literacy profile



More detailed guidelines for interpreting the **SNAP** profile are given in Section 3 (*Interpreting and Using the Results*).

If you then click on the appropriate profile bars on the screen, for the core profile or any of its individual sub-strands, you can access, edit and then print out information sheets about each SpLD for use in the school and to share with parents. These sheets are automatically ‘personalised’ for the individual pupil, and contain practical advice upon how to respond at home and at school. They can also now be made *age-appropriate* to the individual pupil. Section 3 includes some examples of these information sheets.

There is, too, the option of seeing *all* of the strands on a single profile, by clicking to view the **Full Profile**. Like the core and expanded profiles, the Full Profile can be printed, but it does not offer the ‘compare’ facility for reviewing progress, described below.

Reviewing progress

SNAP Version 3 allows you to *compare* any two **SNAP** assessments, to evaluate progress and the effectiveness of any intervention. This facility is available for both the core and expanded profiles: simply select the two assessments you wish to compare, and the more recent assessment will be shown superimposed on the earlier assessment.

Using the Matrix, it is also possible to see how responses to *individual questions* have changed over time. Again, first select the two assessments you wish to compare: those question responses which have changed are highlighted in colour, enabling you to pinpoint quite specific areas in which the pupil has displayed noticeable improvement or deterioration.

For further details, see Section 2.

References

- Gilger, J. and Kaplan, B. (2001) ‘Atypical brain development: a conceptual framework for understanding developmental learning disabilities’, *Developmental Neuropsychology*, 20, 2, 465–81.
- Gillberg C, Harrington R, Steinhausen H. (2006) *A Clinician’s Handbook of Child and Adolescent Psychiatry* (Cambridge University Press).
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- Whitmore, K. and Bax, M. (1999) ‘What do we mean by SLD? A historical perspective’, in Whitmore, K., Hart, H. and Williams, G. (eds) *A Neurodevelopmental Approach to Specific Learning Disorders* (MacKeith Press).

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In summary, **SNAP** seeks:

- to organise and analyse what is already known about a pupil from a broad range of perspectives (often, indeed, adding to what is known, where the supplementary diagnostic probes have been used);
- to provide insight into the extent to which different difficulties are impacting simultaneously upon a learner;
- to identify which seem the most prominent difficulties;
- to indicate what other difficulties are contributing, and to what extent;
- to provide a school-based overview of a pupil's difficulties that is not otherwise available;
- to provide a basis for reviewing progress: reassessment and comparison of successive **SNAP** profiles can allow valuable insights about progress and the effectiveness of any interventions.

This should:

- allow a much improved understanding of a pupil's difficulties;
- allow earlier and better focused intervention;
- where further assessment is indicated, provide it with baseline information and a context that should enhance and improve it.

SNAP does *not* seek:

- to make a definitive statement about the exact aetiology and nature of a pupil's difficulties; or
- to provide a complete alternative to assessment or diagnosis by other professionals.