The psychological assessment of children with learning difficulties

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Introduction
What are the cognitive characteristics of those children who appear to experience particular difficulty in school-based learning? At the most basic level, some struggle to understand exactly what is being asked of them which may be, predominately, a language-based problem in which the complexity of the language used, the vocabulary and the syntax are beyond the child’s grasp. Alternatively, limitations of the working memory may reduce children’s capacity to hold instructions in their minds while simultaneously undertaking problem solving. A child may experience problems in applying learning to new contexts (problems of transfer), the shifting from abstract to concrete formulations may prove challenging and the child may become overwhelmed by attempts at contextualisation, particularly where novel or superfluous information is concerned. Similarly, an attempt to move from concrete examples to the more abstract formulation of general rules or principles leaves many floundering. Possibly the nature of the problem is grasped but the child is uncertain of how to begin to generate possible strategies for problem resolution. Where a number of strategies are relevant, the child may encounter difficulties in selecting the most appropriate and subsequently in testing its effectiveness. He or she may demonstrate an inflexibility of response and an unwillingness to try alternative means of problem resolution and a tendency to be impulsive or impatient may exacerbate his or her limited powers of attention and concentration. When a correct solution is found, the child may fail to appreciate the importance of precision and accuracy in demonstrating it to others and poor strategies for committing knowledge to long-term memory may result in a failure to store information effectively. There may also be a number of non-intellectual factors that impact upon motivation and task persistence. Experience of repeated failure, for example, may result in limited expectations for future success with concomitant anxiety, withdrawal, avoidance and passivity. Many children do not recognise either the importance of reflecting upon their thinking and problem-solving (metacognition) or the interplay of their cognitions, their feelings and their beliefs upon their behaviour (self-regulation) (Zimmerman, 2000).

A second, and closely allied, element concerns the child’s ability to profit from adult guidance and encouragement and one may wish to ask many questions.

- Is the child eager for help when confronted by difficulty?
- Does he or she seek easy answers from others and become frustrated by adult attempts to provide scaffolded assistance (ie, the minimum necessary to take him or her forward)?
- What forms of assistance, and through which modalities (eg, figural, auditory, numerical, verbal), appear to be most helpful to the child?
- To what extent does the child adopt and utilise metacognitive strategies (eg, the use of self-talk to guide behaviour, the adoption of mnemonics or chunking to assist memorisation) suggested by the adult during the intervention?
- Does failure lead to task persistence or task avoidance?
- What mechanisms are employed to avoid challenging tasks?
- Is the projection of ‘learned helplessness’ practised by the child as a routine way of responding to challenge?
- How does the child respond to praise and other forms of reinforcement?
- Does adult help result in significant or limited improvement during the the course of the intervention and, subsequently, over time?

While teachers will routinely seek to explore underlying reasons for a child’s failure to make progress, it is difficult, given classroom pressures, to find opportunities to engage in the in-depth observation and assessment of individual children (Bennett, Desforges, Cockburn & Wilkinson, 1984; Boxer, Challen & McCarthy, 1991). Furthermore, in delivering the National Curriculum, the assessment focus of many teachers, particularly secondary school subject specialists, often tends to be related to curricular content rather than upon cognitive processes.

The contribution of the educational psychologist
For many teachers, skilled assessment by an educational psychologist offers the promise of a more detailed understanding of the learner’s strengths and weaknesses that can serve as the basis for subsequent intervention. To what extent, however, is this an important feature of teacher/psychologist exchanges or is the reality one in which the psychologist is perceived as a remote figure whose major function is to provide access to LEA resources? In the light of such questions, it is interesting to note the comments of an LEA Education Officer (Wood, 1998) who has raised a number of questions about the value of educational psychologists’ observations and recommendations:
‘Generally there seems to be a great deal of repetition, reporting what other people have said in their reports or acting as a voice for a parent or young people: Reports tend to be very descriptive, with little insight into, or diagnosis of children’s difficulty with learning: Targets for change are often incredibly banal, eg, “Jane needs to improve her literacy skills”, “Amit needs to socialise with his peers”, “Roseanne needs to remain on task for longer periods of time”; Proposals for action tend to be very generalised, eg, “Carlisle needs to be taught by teachers experienced in working with pupils who have a special educational need”, “Sara will benefit from an individual education plan.”’

(p.12)

Although the first criticism is, in my opinion, misplaced (a key skill of any professional assessor involves framing questions that elicit valuable information from key informants and articulating their responses in a helpful and synthesised fashion), the other three points have a certain validity. If Wood’s experiences are accurate and not unique to his own professional context, it would appear that many educational psychologists place an over-emphasis on observable behaviours and ignore underlying processes; describe curricular difficulties but not the reasons underpinning them; and offer administrative resource-led recommendations rather than provide guidance on how to engage the child in more meaningful and productive learning.

**IQ testing**

When one thinks of psychological assessment, the notion of the IQ test springs readily to mind. Most teachers working with educational psychologists will have come across tests such as the *Wechsler Intelligence Scales for Children* or the *British Ability Scales*. These measures incorporate standardised means of testing general intellectual ability on the basis of a number of sub-scales that examine such areas as memory, vocabulary, numerical ability, verbal reasoning and spatial ability. The product of an IQ test is a score that permits comparison of a child’s performance with the population upon which the test has been standardised. Thus its main contribution rests in its ability to determine where the child’s functioning (as measured by the test items) lies in comparison with others in the population. While IQ should not be seen as a synonym for intelligence, its power and influence upon the lives of children has been substantial, not least in its use to determine decisions about special schooling.

It is something of a paradox that, despite the repeated attacks upon IQ testing, its use by educational psychologists in the UK and the United States (Haney & Evans, 1999) appears to be little diminished. Criticisms centre upon the absence of theoretical frameworks for many of the most popular tests (Flanagan & McGrew, 1997); concerns that IQ tests may be biased against culturally and linguistically diverse populations (Lopez, 1997); the failure of such measures to address ‘real-life’ attainments (Ceci, 1990); and their apparent inability to inform teachers and parents on how best to address learning difficulties (Reschly, 1997).

A key issue relates to the appropriate functions of psychological assessment. When the educational psychologist’s role was perceived principally as one in which tests were conducted in order that children with the greatest needs could be identified and, if necessary, provided with some form of special education, norm-referenced tests of intelligence appeared to many to be particularly appropriate. Such reasoning underpins the rationale for the continued use of psychometrics by many LEAs (eg, Hart, 1997). While the contribution of psychometric assessment as a key element in LEA decision-making continues to be a topic of some debate (Williams & Mallon, 1997; Gersch & Gersch, 1997), its use must also be considered in relation to the perceived needs of teachers. The delegation of resources (and power) to schools from LEAs, together with the introduction of more inclusive practices, have resulted in a greater expectation that, in addition to describing the child’s current functioning and acting as a gatekeeper to special education resources, educational psychologists should provide increasing guidance to teachers and parents on how best to help the child with learning difficulties. In the latter respect, the limited value of psychometric testing is widely accepted. Not only are there doubts about the meaningfulness of IQ tests, particularly in a multicultural society, but also, even if such measures were valid, they would still provide little useful information to guide intervention. Attempts to use IQ sub-test profiles, rather than a single score, to gain greater understanding of a child’s needs have similarly proven unsatisfactory (McDermott, Fantuzzo & Glutting, 1990). Neither has their use to examine intelligence-attainment discrepancies proven diagnostically helpful; the employment of IQ/reading discrepancies to determine the presence of dyslexia, for example, has not proven to be scientifically valid despite its continuing and widespread practice (Elliott & Place, 1998).

While a number of new intelligence tests based upon neuropsychological theories have been embraced by some US psychologists (eg, the *Kaufman Assessment Battery for Children* and the *Das-Naglieri Cognitive Assessment System*), they have made little impact to date in the UK. While there is some suggestion that they may be of greater value in informing intervention (Naglieri, in press) than traditional IQ tests, their potential has yet to be adequately evaluated.

**Behavioural and curricular approaches to assessment**

During the 1980s, many educational psychologists, perceiving that existing psychometric tests lacked utility, turned to behavioural psychology (White & Haring, 1980; Ainscow & Tweddle, 1979) as a more valuable tool for linking the assessment of children with learning difficulties to classroom intervention. Hence core areas of any given curriculum were broken down into hierarchically ordered...
behavioural objectives; children were assessed on the basis of whether they demonstrated specific skills and competencies; and instruction involved teaching each objective in an ordered sequence with feedback provided by ongoing criterion-referenced assessment (CRA) and detailed record-keeping (Gardner & Judson, 1983). With regard to basic skill areas of literacy and numeracy, a number of assessment and intervention programmes were published for school (Ainscow & Tweddle, 1984) and pre-school settings (Cameron, 1982).

While such approaches had their origins in work with those with learning difficulties, the introduction of the National Curriculum resulted in the deployment of criterion-referenced assessment for all children via a multitude of statements of attainment that were embedded in each curricular area. However, the statements were not couched as observable behaviours but included ‘fuzzy’ terms (Mager, 1972) such as ‘understand’ and ‘know’. Such verbs were subject to differential interpretation and operationalisation and thus reduced the reliability of judgements (Elliott, 1990). Given the difficulties of measurement and the need to break down tasks into smaller units when working with children with learning difficulties, educational psychologists, with their existing CRA expertise, had much to offer both to the struggling teacher and to those LEA officers whose task it was to draw up Statements of Special Educational Needs.

As teachers have become increasingly skilled at criterion-referenced/curriculum-based assessment over the past decade, the nature of the unique contribution of the educational psychologist in undertaking assessment has become problematic. The shift of emphasis from questioning ‘why’ a specific behaviour was not making progress (eg, because of a low IQ) to ‘what’ he or she could or could not do in curricular terms has resulted in the potential for a high degree of overlap in teacher and psychologist assessment of children with mild or moderate learning difficulties. While this may not be unduly problematic for the purposes of statutory assessment (where close correspondence of professional judgements may be highly desirable), such duality may prove to be of less value to teachers seeking guidance from their psychologist on how to address a particular child’s problems. Although a degree of disenchantment with behavioural approaches has resulted in a retreat to psychometrics on the part of some psychologists (Lokke, Gersch, M’gadzah & Frederickson, 1997), for others, the consequence has been role uncertainty and concern about what constitutes the role of an applied, professional psychologist (Stringer, Elliott & Lauchlan, 1997; Lunt & Majors, 2000).

The question often uppermost in the mind of the teacher is ‘how’ can the child be best helped which highlights a major limitation of both IQ testing and curriculum-based assessment. Neither approach offers significant information about the specific nature of a child’s learning difficulties nor do they guide the teacher in determining ways to modify instruction in the light of such knowledge. Lidz (1997) argues that curriculum-based assessment provides little information other than outcome measures for showing the effects of instruction; data which, although valuable, are more geared to the question ‘what’ rather than ‘how’ to teach. In a similar vein, Simpson (1990) noted, in an empirical investigation, that despite claims that criterion-referenced assessment could assist in diagnosis and remediation, in practice it led merely to the repetition of content and exhortations to try harder.

**Dynamic assessment**

One might expect that a measure that directly assesses the process of learning, by means of adult-child scaffolded interaction, and examines the child’s potential to learn (given appropriate intervention) might be valuable in helping us understand the nature of a child’s difficulties and to devise ways of overcoming them. Approaches of this kind, often subsumed under the rubric of dynamic assessment, are increasingly coming to the notice of mainstream educational psychologists although, despite their inherent attraction, they remain relatively underused (Elliott, 2000).

A difficulty in discussing dynamic assessment or learning potential assessment (the term largely preferred in mainland Europe) (Hamers, Sijtsma & Ruijssenaars, 1993) is that it is an umbrella term that encompasses a variety of theories, methodologies, functions and goals (Lidz & Elliott, 2000). Despite such diversity, the general approach is underpinned by the writings of Vygotsky (1978) who emphasised that learning is primarily a social process in which a novice is guided by a more expert other (often, but not necessarily, the parent or teacher). According to Vygotsky, teaching should focus upon the child’s zone of proximal development (ZPD), that area where the child can achieve with guidance from others but will not fail when unassisted. The task of the assessor, therefore, is to ascertain what the child can achieve unaided and then to determine the gains that can be made when assistance is provided; thus the focus of the assessment is upon the actual process of learning.

The impact of assistance is usually examined by means of a pre-test, teach, post-test approach which enables the tester to observe not only the gains that the child makes once help is provided, but also to ascertain whether this learning is maintained when the task is once again tackled unaided. Vygotsky argued that psychologists and teachers should not merely consider the child’s existing skills, but also those that are in the process of development (i.e., are in the ZPD), and that may be most amenable to skilled teaching. As the Russian psychologist Leontjew noted (Bronfenbrenner, 1977):

> ‘American researchers are constantly seeking to discover how the child came to be what it is; we in the USSR are striving to discover not how the child came to be what it is, but how it can become what it not yet is.’

(p.528)
Dynamic assessment has been advocated as a valuable tool for fulfilling a variety of different functions, including helping the assessor to:

- identify specific cognitive deficiencies that delimit the child’s functioning (Feuerstein, Rand & Hoffman, 1979);
- highlight the child’s employment of cognitive strengths and weaknesses;
- examine metacognitive functioning (Clements & Nastasi, 1990);
- make judgements about the child’s potential;
- make judgements about the child’s modifiability (ie, how responsive the child is to intervention);
- point to those instructional methods that might prove most helpful to the child (Swanson, 2000);
- improve the child’s mental efficiency (Embreton, 1987);
- assist in evaluating the effectiveness of treatments in a given population (Carlson & Wiedl, 2000);
- estimate the likely impact of cognitive training programmes upon intellectual performance (Fernandez-Ballesteros & Calero, 1993);
- provide a better estimate of intellectual ability than that measured by traditional intelligence tests (Hamers, Hessels & Van Luit, 1991);
- assist in understanding the impact of non-intellectual factors (eg, motivation, locus of control) upon learning (Tzuriel, Samuels & Feuerstein, 1988).

It is important to recognise that prioritisation of these functions often reflects differing underlying perceptions on the role of the psychologist. In many countries, in mainland Europe for example, the educational psychologist’s key role is to determine whether the child should receive special schooling. Thus many European researchers have sought to demonstrate the greater validity of dynamic tests over IQ in making such judgements (Hessels, 1997). In England, however, an increasing emphasis is being placed upon helping teachers in direct work with children (McNamara, 1998) and this may spur the growing acceptance of dynamic approaches.

A key area of debate amongst proponents of dynamic approaches is whether they should adopt the strictly standardised requirements, typical of norm-referenced measures or, alternatively, utilise a more clinical approach in which the examiner is free to intervene whenever it appears appropriate. Perhaps the most recognisable clinical approach is that of the Learning Propensity Assessment Device (LPAD) developed by Feuerstein and his colleagues (1979), which uses a range of tasks less likely to be associated with academic failure by the child. The tasks, it is believed, used in a nurturing tester-testee collaborative relationship should help to overcome the often passive, poorly motivated approach symptomatic of the individual with negative self-perceptions. Thus, the specific instruments in the LPAD battery avoid activities that draw upon stored information or previously learned academic behaviours that might be influenced by prior learning opportunities and that are likely to discriminate against those from socially disadvantaged backgrounds or minority cultures. The tasks are presented through a variety of modalities such as verbal, figural, pictorial, spatial and numerical, and involve cognitive operations such as classification, analogy, seriation and syllogism (Feuerstein et al., 1979).

The purpose of the LPAD is to assess the modifiability of the individual, not by means of a quantified system of measurement, but by evaluating the process of change and then attempting to remedy deficiencies (Feuerstein, Feuerstein & Gross, 1997). Arguing that it is pointless to attempt to measure something that is constantly in a process of change, Feuerstein’s approach involves a process of ongoing intervention (Birnbaum & Deutsch, 1996) and, freed from the requirement to act in uniform fashion with everyone, the assessor can assist, encourage and teach in ways that are most helpful to individual learners and thus gain a more valid picture of their potential.

Feuerstein’s clinical approach dispenses with normative aspects of measurement and, therefore, is inappropriate for comparing individuals with their peers. Thus the assessor cannot argue, on the basis of the LPAD, that the child is, for example, functioning at the twelfth centile or 18 months below chronological age. While Feuerstein’s approach and that of his colleague, Tzuriel, whose tests are designed for younger children (Tzuriel, 2000), would appear to be popular with educational psychologists in the UK (Lauchlan & Elliott, 1997; Birnbaum & Deutsch, 1996); other advocates of dynamic assessment, particularly those from mainland Europe (Carlson, 1995), argue that the absence of standardisation tends to weaken the validity of test findings.

Those who argue for more ‘scientific’ approaches have tended to develop measures that incorporate a standardised set of hints or prompts that are provided whenever the child encounters difficulty in solving test items. Here the focus of the assessment is largely upon how much help the child requires to be able to solve a given task independently (Campione & Brown, 1987) and, while approaches vary, the general procedure typically operates as follows:

a) the child is presented with a task that he or she is required to complete unassisted;
b) a training phase is conducted in which the child is provided with a series of predetermined, graduated prompts until the mastery criterion is met. These are provided whenever the child encounters difficulties;
c) the child is asked to apply what has been learned during the session to other problems that are similar to the original task (nb, this is seen as a measure of the child’s ability to transfer learning);
d) an unassisted post-test is conducted.

While some work has focused upon curricular areas such as mathematics, reading and spelling (Hamers, Pennings & Guthke, 1994), most researchers have used more
abstract materials that tap cognitive processes deemed to underpin general learning and problem solving. In addition, the potential of using computers to provide systematic assistance and feedback, contingent upon the child’s responses, is also being explored (Guthke & Beckmann, 2000; Jensen, 2000).

Psychological assessment and its relevance to educational practice
An important issue for the UK context is whether a focus upon advising and assisting teachers in undertaking intervention is appropriate for educational psychologists. More inclusive philosophies and an emphasis upon prevention and the requirements of the Code of Practice have resulted in greater expectations that educational psychologists will undertake assessments that can yield valuable data to schools in helping children with learning difficulties. While LEA Officers will continue to need data from a range of professionals upon which to base resourcing decisions, they may feel less need for the overt statements or subtle hints about suitable placements that were often underpinned by the results of psychometric assessment. They will also be increasingly aware of the LEA’s obligation to support schools in the raising of academic standards and are likely to recognise the importance of their services being valued by schools.

Teachers, with increasing skills and knowledge of curriculum-based assessment, may be less interested in global accounts of intellectual functioning or of curriculum-based assessments that largely tell them what they already know. Consequently, they are likely to want to know what specifically are the child’s cognitive and affective blocks to learning and what types of help and encouragement appear to result in task engagement, more systematic problem-solving and greater cognitive self-regulation.

Although many leading exponents of dynamic assessment are based in the United States of America, psychological assessment in that country is heavily constrained by external regulations and much emphasis is placed upon evaluating children’s eligibility for special education programmes. For this reason, US school psychologists often have little choice but to provide normative data, obtained from intelligence and attainment tests, in their reports. Time constraints upon individual casework necessarily reduce opportunities for undertaking both traditional and dynamic assessment on a routine basis. In Britain, however, there is more freedom for psychologists to approach cognitive assessment in a variety of ways. One LEA, Southwark, for example, has proscribed the use of IQ testing largely on the grounds that it is inappropriate to a multicultural context and, instead, has embraced a combination of dynamic and curriculum-based assessment approaches. While curriculum-based assessment is largely used to make judgements about SEN resourcing, dynamic assessment is perceived as having significant value for work with teachers.

While from very different psychological paradigms, many dynamic practitioners advocate the flexible use of the three approaches according to what is required. Lidz (1991), for example, states:

‘If we wish to determine how far the child’s knowledge base deviates from the norm, we will continue to administer a psychometric measure. If we wish to determine the content of a child’s knowledge base within a specific domain, we will administer a curriculum-based or criterion-referenced test. If we wish to derive hypotheses about how the child learns, how responsive the child is to attempts to intervene, and what seems to be interfering with the child’s ability from existing attempts at instruction, we will use dynamic assessment.’

(pp.121-122)

However, while indications of general potential and details about how the child responds to various forms of assistance may prove helpful to teachers, studies suggest that such information will not necessarily be utilised in practice (Brown, Campione, Webber & McGill, 1992). Not only is it necessary to bridge between the individual assessment context and the demands of busy classrooms, it is also unclear to what extent teachers require systematic knowledge of underlying theory and associated concepts in order to use recommendations geared to addressing the child’s difficulties. Many of the dynamic approaches that are most heavily weighted to classroom intervention and collaboration between psychologists and teachers draw heavily upon Feuerstein’s somewhat complex theory of structural cognitive modifiability and mediated learning experience. Teachers unfamiliar with his ideas and other key constructs from educational psychology (eg, scaffolded instruction, metacognition, self-regulation) may encounter some difficulties in grasping the nature of assessment findings and putting recommendations into action. Although some local education authorities such as Southwark and Hampshire have invested significant energies in developing teachers’ understanding of dynamic approaches and the theories upon which they are based, in many cases it may be incumbent upon individual educational psychologists to articulate their findings in ways that are meaningful to individual teachers. It may also be necessary for researchers, many of whom have necessarily been preoccupied with issues of test reliability and validity, to give greater consideration to professional/educational implications arising from the use of their measures (Lauchlan & Elliott, 1997; Elliott, 2000). While there is some evidence to suggest that teachers gain insights from the observation of dynamic assessment sessions (Vye, Burns, Delcos & Bransford, 1987) and perceive reports from these to be useful in planning interventions (Elliott & Lauchlan, 2000; Lauchlan, 1999), much more research geared to exploring the complexities of the assessment-intervention interface is required.

In this article I have endeavoured to consider three assessment paradigms that are strongly associated with educational psychology practice. Of course, these are likely to form only a part of any assessment in which
consideration of a number of broader interactional and systemic factors (Powell & Booker, 1987; Lokke et al., 1997) is also likely to feature. Recognition that much important learning takes place beyond the classroom has resulted in calls for more ecologically valid assessment (Burden, 1996; Armour-Thomas & Gopaul-McNicol, 1998) in which cognitive, social and cultural factors are considered not only in relation to school but also to home and local community contexts. While the questions outlined in the opening paragraphs of this article suggest a strong emphasis upon within-child analyses (albeit via the examiner-examinee relationship), it is important to note that many dynamic approaches also stress the importance of the broader socio-cultural context. Dynamic assessment practitioners such as Robinson-Zanartu and Aganza (2000) demonstrate how their work with children in the context of both home and school environments can provide powerful and evocative insights into the broader nature of learning and can guide subsequent multi-level intervention. However, such sophisticated approaches and analyses hardly lend themselves to the narrow ‘assembly-line’ model of psychological assessment that our current levels of resourcing and dominant assessment traditions appear to perpetuate.

References


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