

Towards needs-based assessment: Bridging the gap between assessment and practice

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Abstract

This paper presents a needs-based assessment (NBA) model for addressing children's special educational needs. This model aims at increasing the clinical relevance of assessment data by translating the information into recommendations for intervention. The five principles and stages of this NBA-model will be described and illustrated with examples. Problems relating to this model will be discussed.

ASSESSMENT OCCURS when decisions concerning classification, diagnosis or intervention have to be made and someone wants information to support the decision-making process (Deno, 2005). In this article we focus on assessment for intervention planning. The aim of this type of assessment is to yield recommendations for intervention. In practice there often exists a gap between assessment data on the one hand and recommendations on the other. In the Netherlands a diagnostic model has been developed that aims at bridging this gap: a needs-based assessment model (NBA) (Pameijer & Van Beukering, 2004). This model describes a decision-making process in which an assessor should systematically proceed through a series of stages. The assessor analyses the child's learning and behaviour problems and looks for possible explanations in order to make recommendations that can solve or alleviate these problems. S/he generates diagnostic hypotheses by applying theoretical and scientific knowledge and tests these hypotheses with reliable and valid instruments. The diagnostic process is goal directed: it targets relevant risk and protective factors (or weaknesses and strengths) concerning the child, the instructional environment and the home environment. The aim of NBA is to arrive at recommendations that the teacher, parents and student find acceptable. As a

'scientist-practitioner' the assessor combines scientific knowledge with coaching skills. By 'tailoring' the diagnostic information to a specific situation, the gap between assessment and practice is decreased.

Assessment refers to two main topics (Mash & Hunsley, 2005): the assessment process (i.e. generating and testing hypotheses, decision making, integration of information) and the assessment methods (i.e. tests, questionnaires, observations and other measures to gather data). In this article we focus mainly on the process. NBA is a prescriptive model that outlines an optimal or desirable rather than the customary process. The model, outlined below, has five stages and has been extensively described elsewhere (Pameijer & Van Beukering, 2004). School psychologists – or educational and child psychologists – are stimulated to use this model as a frame of reference for reflection and quality improvement, asking themselves: what are we already doing in a needs-based manner and where is there room for improvement? The model has been implemented in several educational settings in the Netherlands and Belgium. It has been recommended in several Dutch and Belgian policy documents and has been selected as a Dutch example of 'best practice' for the assessment-project of the European Agency for Development in Special Needs Education (Pameijer & Pijl, 2006). To date, there have been 10 years of experience

with this model in different school settings, both in regular and special educational settings. Many adaptations have been made through these years, deleting what doesn't work and expanding upon those aspects that are known to be effective. However, research concerning the value and utility of this model in practice has not yet been conducted. We consider it necessary to investigate the extent to which themes of 'evidence-based assessment' (Kazdin, 2005) are to be found in this NBA model and, although practitioners generally agree with the principles and stages of this model, it is not yet clear to what extent they really systematically adhere to all the stages and steps or just implement certain aspects in their daily work. The model does not include particularly new aspects of assessment. It does, however, describe an assessment process in which five principles of clinically relevant assessment are translated into specific steps.

Overall, it is possible to identify six inter-related purposes of assessment (Mash & Hunsley, 2005): screening, diagnosis and case formulation, prognosis and prediction, treatment design and planning, treatment monitoring and treatment evaluation. When teachers, parents or students perceive a problem, they raise different types of question. Analysing these questions sheds light on the purpose of assessment in the case at hand. Some questions are of a general nature and their content still has to be specified. Others are more specific, for example, whether the child has learning difficulties because of a lack of motivation. The question may be closed, for example, whether the child has poor short-term or working memory, or open-ended, for example, why do reading difficulties persist and how can we best help this student with reading? The type of question determines the purpose of assessment, the decisions to be made and the type of answer that is sought. NBA is appropriate when the question concerns both an understanding of the problem (diagnosis) and a recommendation on how to solve the problem (intervention planning).

The five principles of the NBA model

A literature review on the quality of educational assessment and practical experiences with assessment led to standards for 'good assessment'. We then translated these standards in five principles of NBA. NBA (1) follows a systematic and transparent process with stages; (2) is goal-directed, aiming at decisions and recommendations; (3) uses a transactional frame of reference (contextual approach); (4) is in collaborative partnership with the school, parents and child; and (5) focuses on the strengths of the child, school and parents.

During a recent meeting of the assessment project of the European Agency for Development in Special Needs Education (Brussels, November 2005) 'trends in assessment' and 'features of best practice in assessment' were discussed by assessment-experts from 23 European countries. Related to the five principles above, the following themes emerged: (1) assessment should be a clear and transparent process, understandable for those involved: teacher, parent and student. (2) On the one hand there are standardised procedures, on the other hand these should be applied flexibly and only when necessary. Assessment should be goal oriented, it should contribute to decisions for the student's benefit. (3) A contextual approach is necessary; assessment should not only focus on the student, but also on classroom practices, teacher behaviour and parents. (4) There should be a partnership with teachers, parents and students; they should be involved during the assessment process. Self-assessment by students and the use of portfolio are frequently seen as recent features of best practice. (5) The assessor should also focus on the strengths of students, peers, teachers and parents.

In this article the five principles of this NBA model will be described and illustrated with examples. Problems relating to this model will also be discussed.

A systematic and transparent process

European guidelines view assessment as a process of hypothesis testing designed to answer clients' questions and to solve their problems (Fernandez-Ballesteros *et al.*, 2001). Assessment is a complex process of generating and testing hypotheses about what may be causing or maintaining the behaviour of concern and what recommendations may solve these. According to Brown-Chidsey (2005) it is a process of problem solving including important decisions, which may have a large impact on the learning process and social-emotional well-being of a child. Therefore it is important that this process takes place in a systematic, objective and consistent way and is transparent for all people involved: the teacher and other professionals in the school, the student and the parents (Carr, 1999). The assessor should follow a model consisting of stages. At each stage it should be clear which questions and decisions are involved. In addition, current research findings should be used when generating and testing hypotheses and formulating recommendations (evidence-based assessment, Kazdin, 2005). Systematically following a diagnostic model, such as NBA, increases the likelihood of more consistent and objective decision-making (De Bruyn *et al.*, 2003). Although it does not prevent differences between assessors, their decisions at least become transparent to colleagues, the school and parents.

For example: a process consisting of five stages

NBA consists of five stages (see Figure 1), which are closely linked in a cyclical process with feedback loops. The stages can be applied by a single assessor or by a multi-disciplinary team.

Checklists accompany the decision-making process at each stage, functioning as a reminder and protecting the assessor against common mistakes or pitfalls in decision making, such as considering only one hypothesis or one recommendation and denying alternatives (Haynes, 1998). More effective problem solvers generate alternate hypotheses and

intervention plans prior to formulating a diagnosis and recommendation (De Bruyn *et al.*, 2003).

Stage 1. Intake: how can we work in partnership with the teacher, student and parents? From the start, the assessor focuses on the questions to be answered and the decisions to be made. The focus is goal directed, asking what the teacher, parents and student want to know and why they want to know this. If they have this information, how will it change their expectations of and behaviour towards the child? What do we want to achieve with this case? A goal of the intake is to collect information so that the assessor can determine a strategy, i.e. which stages are necessary in this case. Another key objective during this stage is to achieve compatibility between the clients and the assessor, so that a constructive partnership is possible. Responsibilities, expectations and wishes should be crystal clear and realistic. The diagnosis and recommendations will only be accepted when there is collaboration and consultation with those directly involved (Carr, 1999).

Stage 2. Strategy: what do we already know, what more do we need to know and why? The assessor determines a strategy by asking the following questions: In view of the information from the intake, how shall we proceed in this case? This stage has three steps, determining (1) what do we already know (multi-dimensional problem definition); (2) what do we still need to find out (based on alternate hypotheses); and (3) if extra information is required, what are the specific questions? During this stage, alternate hypotheses are generated and translated into questions for investigation.

Stage 3. Diagnosis: the gathering of information is question-driven. The goal of this stage is to answer the relevant questions for investigation and test the selected hypotheses. These determine the information to be gathered in a classroom observation, by interviewing the teacher, student or parents, using a question-

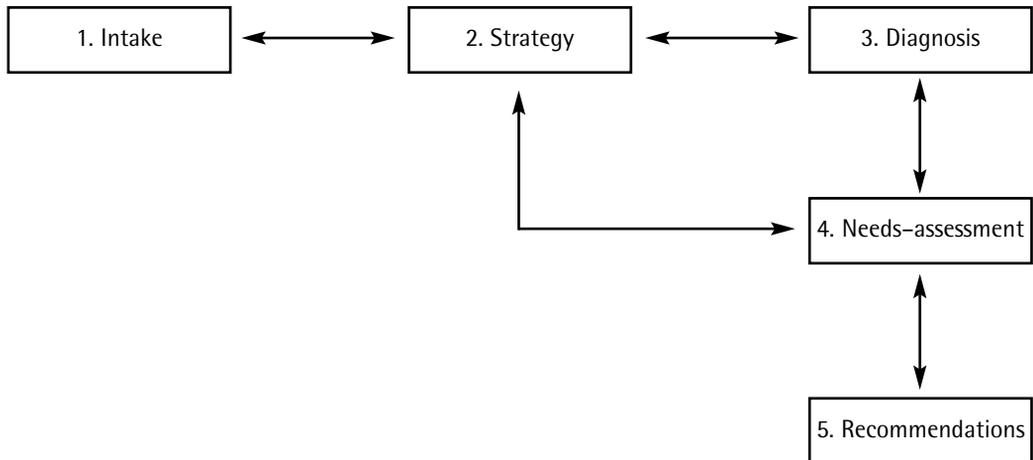


Figure 1: Five stages in needs-based assessment (NBA).

naire or by testing the child. Assessment thus consists not only of testing the child but also interviewing those involved (Dawson, 2005), analysing the teaching programme, reviewing existing curriculum-based assessment, and observing within the classroom (Shapiro & Clemens, 2005). The assessor uses only valid and reliable instruments that are appropriate for answering the specific questions and testing the hypotheses, considering the purpose of the assessment. This stage involves a goal directed rather than a routine collection of information. The content of this stage varies in each case, depending on the questions and the information already at hand (flexible use).

Stage 4. Needs assessment: the bridge from diagnosis to recommendations. During this stage, the assessor integrates the collected data into a diagnosis, which presents an overall – or comprehensive – picture. This picture describes the relationship between the initial questions on the one hand and the relevant assessment data on the other. Aspects relating to the student, instructional setting and home environment are included as risk factors if they contribute to or maintain the problem, while factors that protect the child from these risks are reported as protective elements. However, a diagnosis seldom leads directly to recommendations

that are both desirable and workable (Seidenstucker & Roth, 1998). Although the overall picture points to what needs to change in order to solve the learning difficulties or behaviour problems, and thereby enhances the consistency between diagnosis and recommendations, it does not indicate how that change can best be made for *this* student, *this* teacher and *these* parents. In other words, knowing what the problem is and what has to change does not yet suggest how this can best be achieved (Haynes, 1998). This dilemma requires one to answer the following related questions: (1) What do we want to change with regard to the student, the teacher and the parents and what are the goals? (2) What do the child, teacher and parents need to achieve these goals? (3) What interventions are desired? (4) Which one of these would be achievable in this case? Alternate interventions are considered before a recommendation is given, as we cannot yet say with certainty that any one intervention will be effective for all students with a certain problem or diagnosis. There is no 'one size fits all' (Deno, 2005, p. 24).

Stage 5. Recommendations: from a desirable to an achievable recommendation At this point much has already been achieved. Key problems are understood and optimal or desir-

able recommendations are known. The teacher, student and parents have been involved in the assessment process from the outset, collaborating with the assessor. They have been asked about their expectations regarding possible diagnoses and recommendations, and unrealistic expectations have been modified. The abilities and needs of the child, teacher and parents have been taken into account. In short, the foundation has been laid for 'tailored' recommendations. Now, during the recommendations stage, the assessor informs the clients involved about the diagnosis and recommendation and asks them to make their choice. The assessment process is evaluated by the assessor and clients; for example, are the initial questions answered, is the diagnosis sound and are the recommendations workable?

NBA is goal directed

In routine or standard assessment batteries, more data than necessary for answering the questions or making a certain decision are collected. It is hard to translate these irrelevant data into the educational needs of the student and the required teaching practices. Recent developments in assessment therefore stress that the information gathered should be confined to what is strictly necessary for addressing the problem (Salvia & Ysseldyke, 2004). The assessment process thus becomes more goal directed: its purpose is to yield recommendations that solve (or alleviate) the problems within the instructional environment.

For example: goal-directed thinking during the strategy stage

The hypotheses to be generated should be academically sound, plausible in light of the information at hand, and testable. The assessor does not formulate just any hypothesis, but combines the information available with her/his professional expertise and evidence-based knowledge. Another important guideline of this NBA model states that only those hypotheses are tested that affect the diagno-

sis and recommendations. Therefore the assessor selects the relevant hypotheses and transforms these into questions for investigation that need to be answered. (S)he does not test all possible hypotheses, but makes a selection based on relevance. The bottom line is relevance to intervention: no assessment takes place unless it affects the recommendations. Although this guideline may be at odds with an assessor's desire to learn a lot about a child, this desire does not lead to efficient, goal-directed and functional assessment. It is therefore important to check why and to what end a particular question will be investigated. If the information one wants to collect does not influence a decision or recommendation, one is not 'allowed' to collect this information as it does not seem relevant at the time (Meehl, 1973). Each diagnostic question is therefore justified with the 'if-then' rationale: 'if we know... then we can recommend...', and 'if we don't know... then we are not yet able to recommend'. In this way assessment is directly linked to intervention. An example of the 'if-then' rationale is below.

Monique has poor work habits; she is not motivated to work in school: it takes her a long time to get started, and once she has begun she is easily distracted.

Diagnostic questions Is this behaviour reinforced by the teacher's approach? Does the teacher have an adequate understanding of how Monique perceives the task? Is feedback sufficiently positive for her? Are her poor work habits perhaps reinforced by the way in which the teacher organises the class? Are there clear routines, such as a system for requesting help from the teacher, and clear tools for visualising task time and planning? Does the teacher provide enough emotional support before and during the tasks?

Rationale If the teacher has an inadequate understanding of how Monique perceives the task, *then* the assessor can discuss with

the teacher how she could address this problem. *If* the teacher's feedback is not sufficiently attuned to Monique's needs, *then* the assessor can discuss the kind of feedback Monique needs. *If*, however, the teacher does have a satisfactory understanding of Monique's perception of the task and does provide sufficient feedback, *then* these are positive factors and the teacher will be advised to proceed. *If* the class organisation is less than optimal, *then* the teacher can be given help to improve it.

A transactional frame of reference

Traditional assessment has long permeated the fields of school psychology (Sheridan & McCurdy, 2005). Employing a 'medical model', it has focused on extensive individualised cognitive, academic and psychological testing, often resulting in within-child diagnoses (Reschly & Tilly, 1998). Classification and labelling were important goals of this type of assessment. However, children do not learn in isolation and only testing the child fails to provide sufficient information to outline the nature of the problem and the appropriate recommendations. The focus needs to move from labelling the particular difficulties of children to identifying their specific strengths and weaknesses (Tymms & Elliott, this issue). Rather than operating a simplistic medical model, the assessment of an individual's needs requires a problem-solving approach to intervention that considers contextual factors involving the school and the broader ecosystem as well. The focus of assessment therefore is not only the student's weaknesses and strengths, but also the learning environment: a particular school, classroom, group of peers and teacher (Sheridan & Gutkin, 2002). We should ask how well this environment is fitted to the needs of this specific student. This means that we should focus on the transaction between the needs of the student and the learning environment. Is this environment offering the child what it

needs? What should be changed? This implies that much of the assessment will take place within all contexts where the child is learning. Gains in student performance are greater when the recommendations are implemented across home and school settings, rather than in isolation (Sheridan & McCurdy, 2005).

This principle is based on the transactional model (Bronfenbrenner & Morris, 1998; Rutter, 2002) and on ideas concerning ecological assessment (Greene & Ollendick, 1998). Teacher and student both influence each other; both need to experience a good relationship and feel competent. Therefore the 'goodness of fit' between the two is crucial (Carey, 1998). In the instructional context a student elicits a response from the teacher and peers, thereby indirectly influencing him or herself. Thus the teacher-student relationship plays a key role in a student's academic performance and social well-being. The quality of that relationship is important for children with learning and behaviour difficulties, many of which can be prevented or remedied by a competent teacher (Deci & Chandler, 1986).

A transactional frame of reference has far-reaching implications for assessment for intervention. During each stage of needs-based assessment, the assessor will focus on the interactions between child and environment. A question like 'Why does this child have problems and how can they be tackled?' will be reformulated into 'Why does *this* child, from *this* family, in *this* school, with *this* teacher and *these* classmates have these problems and how can we best address them?' (Greene, 1996). In order to answer such transactional questions, the assessor should not only examine both the child and the natural environment but also should incorporate them in the recommendations because both – sometimes in interaction – may be causing or maintaining the problem. Data gathered in this context may have much more 'ecological validity' and can be translated into more effective recommendations.

For example: generating transactional hypotheses during the strategy stage

When formulating hypotheses we focus on the compatibility between the teacher's and parent's expectations and approach on the one hand and the abilities and needs of the child on the other. This 'goodness of fit' is made explicit. For example, if expectations are too high, a child cannot possibly meet them, whereas if they are too low, the child is not sufficiently challenged. Such an inappropriate approach will lead to problems. When informing teachers and parents about the purpose of the assessment, it is important to explain this concept of compatibility. It will help them understand why a particular intervention works with one child but not with another. Teachers can be told, for instance, that although their teaching style works well for the majority of students, it may increase the fears of a specific student with anxiety problems. Below are examples of variables that can be relevant in a specific case.

Learning difficulties and behaviour problems are the result of interactions between variables of the child, the instructional environment and the home environment (Sheridan & McCurdy, 2005, p. 45). Child variables for example are (Salvia & Ysseldyke, 2004): difficulties in information processing, short memory span, limited self-regulatory skills, problems working independently, a visual or auditory handicap, poor problem-solving strategies, a negative perception of the learning environment and a negative self-image, lack of confidence in asking for additional instruction, a specific learning disorder, low cognitive ability or very variable cognitive abilities, poor social skills, over-sensitivity to stimulation, too much or too little self-control, a difficult temperament, impulsiveness, an attention disorder, learned helplessness, anxieties or depression.

Examples of instructional variables are (Ysseldyke & Elliott, 1999): too low or too high expectations, inadequately structured instruction, instruction that is not individualised and doesn't match the student's learning stage, too few exploratory learning activities, poor compatibility between the instruction method and subject matter that the child is able to cope with, insufficient opportunities for active participation of students and/or individualised learning, lack of effective remedial methods, disorderly classrooms, inadequate behavioural rules, inconsequent application of corrective feedback, insensitivity and unresponsiveness of the teacher, insufficient attention to the child's perception of competence or a child's unfavourable position in the class, e.g. as outsider, scapegoat or clown.

Examples of variables in the home environment (Christenson & Sheridan, 2001) are: lack of structure and discipline, insufficient emotional support for learning, parents with no interest in child's schoolwork, an inconsistent parenting style, neglect and lack of supervision, a major discrepancy between the rules at home and those at school, parents who don't value academic performance and keep their child at home to care for younger siblings, parents who are hostile and reject their child, a break-down in family communications or a parent's physical illness or psychiatric disorder. In addition, the interaction between the school and home environment is relevant (Ysseldyke & Christenson, 2002), such as conflicts between the school and parents, different standards and expectations or a lack of mutual support and trust.

The inclusion of school personnel and family members in the assessment process promotes understanding of the ecological factors affecting a child's performance and behaviour and also increases the likelihood of successful intervention planning (Sheridan & McCurdy, 2005).

Collaborative partnership with the teacher, student and parents

Assessment is not always adequately attuned to requests from clients and, sometimes, they are insufficiently involved in the process. However, parents and teachers are becoming increasingly well informed and articulate. Thanks to the internet, they have easy access to information on learning and behaviour disorders. Information on how to assess and treat these disorders is also available from educators' and parents associations' reports. As a result, parents, teachers and students approach the assessor more and more with specific questions and clear requests. As NBA is question driven, the assessor is interested in these questions.

From the outset, NBA involves openness and transparency in the communication with school personnel, parents and child. Assessors speak with their clients rather than about them. As 'co-assessors' clients can participate in the assessment process. We view the teacher and the school's special needs coordinator as the educational professionals. They know this child best as a student, they are aware of the child's school history, how the child learns, the child's working habits and how s/he functions socially and emotionally. They see the child in multiple situations at school. They know whether or not a particular intervention may work for this child and they have insight into the child's instructional needs. They also have an overview of the actual instructional setting and the prospects for change. They are responsible for decisions about the teaching programme and any additional in-school support. Without them, an assessor cannot understand the instructional environment and cannot deliver workable recommendations (Greene, 1996).

Although learning difficulties occur within the school setting, parents are central as well. They should be considered as 'hands-on experts', because they know their child best and longest, they see their child in a wide range of situations, inside and outside the family. Parents decide whether or not to accept the diagnosis and recommendations regard-

ing their parenting behaviour or the choice of a particular school (Carr, 1999). Of course, collaboration with the child takes a central position, as the school problems centre around the child and the recommendations should always be to the benefit of the child. Children actively contribute to their instructional and home environment. If problems arise, the child's perceptions of these problems should always be taken into account as these largely determine the child's motivation to change behaviour. Important questions to ask children are, for example, what do you think is wrong and why? What on the other hand is going well and how come? Who can help you and how? Using self-assessment procedures and portfolios enhance students' participation in assessment (Soodak, 1998). Often their own solutions are simple and effective (Durrant, 2001).

For example: collaboration during the intake stage

In order to match the assessment process with the school's, parents' and child's perspective, the assessor not only has to know what problems and positive aspects they experience, but also has to be aware of their 'theories'. These include their attributions – what they believe are the causes or explanations for the problems – and their own solutions. Attributions can relate to the child ('the child has a maths disability'), the instructional environment ('the teacher cannot cope with this class because there are too many over-active children') or the parenting situation ('the parents are over-anxious; they expect too much of this child'). The assessor takes such attributions seriously and may convert them into hypotheses and diagnostic questions. By doing this s/he uses the client's expert knowledge. This does not mean that all attributions are investigated. However, it does mean that the assessor considers the likelihood of these assumptions and their relevance for the recommendations and discusses these with the persons requesting help.

Considering the concerns and attributions of a teacher, parent or child provides insight into the request itself. It can shed

light on the underlying question, the 'question behind the question'. Although not expressed explicitly, this question is of great concern to the client. Parents may feel anxious ('I'm afraid he has autism') or guilty ('Am I too strict for her?'). Teachers may feel disappointed or insecure ('I've given him so much extra attention for months and have achieved so little, am I doing the right thing or would special education offer him more?'). If these feelings and questions are ignored, there is a chance that the client will look elsewhere for answers and support.

For example: Collaboration during the recommendation stage

In general, we know what recommendations are desirable for a particular diagnosis; we know what usually works (Brophy, 1996; Carr, 2000). But what works well in general – and hence constitutes an effective recommendation – is not necessarily effective in a particular case. The recommendations may not be achievable for this specific teacher or parent (Greene, 1996). To determine the feasibility of a desired recommendation, we use indicative and counter-indicative factors. Indicative factors are characteristics of the child, teacher, peers, parents and family that positively affect the likelihood of success of a particular recommendation, whereas counter-indicative factors have a negative effect. These factors function as arguments for or against a particular recommendation. Many indicative factors can be traced back to two characteristics of the parties involved: their willingness and their ability to make every effort in relation to the recommendations. In other words, are *this* child, *this* teacher and *these* parents willing and able to act on these recommendations? Do they accept their usefulness? Are they confident of success? Do they wish to make the extra effort and try something new? Can they make the extra time and energy available? Can they implement the recommendations in practice? If the answer is yes, this considerably boosts the chance of success. Therefore the assessor involves these factors in the decision-making process.

Recommendations are proposed rather than imposed, as imposed advice will not be effective. If a teacher, for example, sees absolutely no need for a reward system as this is against her personal view ('I refuse to reward one student for doing something that all the others do by themselves'), the assessor should recognise that, however much confidence s/he might have in the reward system, it will be undermined by this teacher. Only when, following a period of consultation, the client says: 'Fine, I agree with that, I can do that, that will work', will the recommendations become workable and achievable. In the example above, once the assessor has explained the diagnosis and the rationale behind the recommendation, the teacher responded with: 'OK, I understand, as the required behaviour is more difficult for this child due to his impulsivity, I will reward him with 10 points and the other children with 1 point for the same behaviour. Furthermore, I will explain this difference to my students. I feel good about this idea, I'm pretty sure it will work.'

Strengths of child, school and parents

Sometimes assessors overlook positive aspects because they are focusing on problems and disorders. By taking problems as their starting point, they look above all for weaknesses, thus overlooking the strengths of the child, teacher, peers and parents/family. However, everyone has strengths and abilities that can be used when solving problems (De Jong & Berg, 2001). For example, a child with persistent reading problems may be able to draw beautifully, a teacher with chaotic class management may give her students a great deal of affective support, and an over-taxed mother may receive considerable help from her in-laws. These positive aspects should be part of the diagnosis and recommendations. We investigate what the child can do well, what the child enjoys doing, and what the teacher's strengths are. What are positive characteristics of the classmates? What do the parents do well? Such questions are relevant because they reflect possible opportunities for change. Examples follow.

- Child: innate positive characteristics such as an easy-going temperament, an ability to cope with stress, a flexible cognitive style and intellectual strengths.
- Instructional environment: good teaching skills, such as a teacher who is able to motivate children, showing them what they are capable of and that they can do it themselves, and who is available for extra support when needed.
- Home environment: an enriching environment, a supportive family climate, positive realistic expectations of a child, a child's secure relationship with his or her parents and a good relationship between the parents.
- School-home interaction: shared standards and expectations, mutual trust and parents and school personnel communicating regularly in a respectful manner.

At each of the stages of this NBA model there is systematic attention to protective factors and strengths. When discussing problems at the intake stage for example, introducing positive aspects can improve the tone of the discussion. Positive aspects shed light on the severity of a problem. Generally speaking, the more positive factors there are, the less serious is the problem. Positive aspects can be elaborated during the recommendation-stage, enhancing the chance of success of a particular intervention plan as well. It is often easier to enhance protective factors than to change risk factors (Carr, 2000).

For example: positive factors during the diagnosis stage

The diagnosis stage needs to have close regard to protective factors. In addition to searching for situations in which the problem behaviour occurs, we are especially interested in situations when it does *not* occur. Therefore we ask when the child is concentrating well or when he or she plays well with other children. We then observe

the teacher's or parent's approach and consider whether this successful approach can be applied to these situations in which the problem behaviour occurs. Emphasising successful strategies increases a child's, teacher's and parent's feeling of competence; it also raises their motivation to change and offers hope for the future.

During the diagnosis stage we pay explicit attention to the child's, teacher's and parents' capacity for change. It is, for example, interesting to look at the effect of certain approaches: which one works best? As a child takes a maths test, we can observe how the child solves tasks, the kind of help the child benefits from, the effect of learning a problem-solving strategy and how the child responds to feedback. The assessor can check the extent to which parents understand their child's problems and are able to modify their unrealistic expectations. During a classroom observation, we can monitor how the teacher instructs the students, communicates the classroom rules, interacts with children and ensures that children are actively involved in learning, as well as how students interact with one another. Here we are looking at teaching practices and the potential for change. In the subsequent discussion, the assessor can emphasise what went well and can ascertain whether the teacher is willing and able to expand upon this approach.

Conclusion

In this NBA model, the diagnosis is not an objective in itself but a means of making informed recommendations. After all, the student, teacher and parents require not only an understanding of the problem, but above all suggestions as to how to deal with this. They need an answer to the question: what is the best intervention in this case? The assessment process is not complete until the clients have a recommendation that they consider workable. Thus the aim of NBA is to arrive at recommendations that the teacher, parents and student find acceptable, to which their reaction is: 'I'm happy with that, I believe it will work. I'll make a start tomorrow.' If this is not the case, the process is not yet finished. The assessor will

have to consult further with the parties involved in search of recommendations that they can endorse. This has implications for evaluating the assessment: we evaluate not only the diagnosis, but also the recommendations.

Data from objective, reliable and precise measurement inform and direct decisions; however they neither dictate nor determine those decisions (Deno, 2005). The people involved will, and must, bring their values and subjective judgements into the process of decision making. Otherwise the gap between assessment and practice cannot be bridged. This means the assessor fulfils two roles: s/he is a 'scientist' and a 'coach', depending on the purpose of the stage of assessment. During the intake and recommendation stages, for example, the assessor collaborates and consults with the teacher, child and parents, using coaching skills. If necessary, s/he investigates the child and the educational or home environment using reliable and valid instruments. During the strategy and needs assessment stage the assessor reflects on the decision-making process, applying recent scientific knowledge. As the stages are closely linked, the relationship between the initial question from the client on the one hand and the diagnostic process and recommendations on the other is made explicit and consistent. This can decrease the gap between assessment and practice.

Discussion

Scientific studies into the effects of this NBA model have yet to be carried out. However, since 1996 there have been many training and guidance sessions which have yielded evaluation data. Applying the model has shown both strengths and weaknesses, which will be discussed here.

The various stages and steps, together with the forms and checklists that accompany them, support assessors in their day-to-day work. The focus on decision making gives them something to go by, e.g. the type of decisions that are involved at a certain stage. Assessors find the checklists helpful; they apply them before, during and after the

diagnostic process. The checklists function as concrete reminders and promote continuous reflection. Thanks to its clear outline of the stages, steps and decisions this NBA model can offer a common frame of reference for all professionals involved. It can promote communication as they all speak the same language and it is clear who does what, how, when and why. Clients usually appreciate this model. They see the assessor as an expert as well as a consultation partner who can assist their decision-making processes.

However, several problems have been encountered. The guideline of 'assessing only what is strictly necessary' appears difficult to apply. The shift in attitude from 'knowing in order to label' to 'knowing in order to recommend' is not always easy. Although applying the 'if-then rationale' during the strategy stage provides support, some assessors still feel that they are labelling more than strictly necessary. They often do so under pressure from the school or parents. Setting boundaries in consultations with teachers and parents can be difficult. Consultation between the assessor and client occurs twice during the diagnostic process: when identifying the diagnostic questions during the intake stage and when deciding on recommendations during the last stage. Things usually run smoothly when there is sufficient consensus between client and assessor and both support the choices made. But sometimes – if the client wants something that the assessor is not willing or able to offer – consultation can be problematic. This happens when the parties involved have conflicting wishes or needs. For example, the school may not want the instructional environment to be included in the assessment, while the assessor finds it necessary. Or parents may wish a confirmation that their child is dyslexic, although the assessor has found insufficient evidence to support this request

A process report is part of the presented NBA model. This report contains only relevant information and provides a focused

response to the questions. It appears difficult to produce reports that focus mainly on questions and answers. Although reports are written in accordance with a set format, their content is not standard; instead, they target the specific situation and are client focused. Writing such a report can be quite a job. Translating jargon into language that the client understands can be difficult and time consuming. In addition, assessors may find it difficult to describe the quality of the instructional environment tactfully.

There is a lack of applicable evidence-based knowledge and reliable assessment tools. An assessor needs scientifically validated expertise when formulating and testing hypotheses and deciding on effective recommendations. However, in identifying and addressing special needs there is often a poor match between theory, assessment and intervention (Tymms & Elliot, this issue). In practice, assessors often lack knowledge that is both evidence based and workable. Even though various sources of information are available, these often lack clinical utility and assessors have difficulty in translating this information into their everyday practice. In addition, they may lack reliable, valid and standardised assessment tools (Resing *et al.*, 2005).

Working according to this model is time

consuming. It usually takes more time than administering a standard battery of tests. This is due to the need to consult with the teacher, parent and child (intake and recommendations stages), reflect on the diagnostic process (strategy stage), observe the instructional environment (assessment stage), formulate recommendations (needs assessment stage) and write a needs-based report. This is rarely compensated by the time saved by conducting fewer tests.

High quality assessment should be aimed at designing and implementing evidence-based strategies, as well as at monitoring and evaluating these strategies (Tymms & Elliott, this issue). Educating students with special needs may require ongoing assessment, according to a cycle of assessing their educational needs, implementing interventions and assessing the effects in order to adjust the intervention. The presented NBA model needs further development in this direction, urging that the student's needs – if necessary – be continuously assessed and addressed.

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