Assessment for Intervention: a practice-based model

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Abstract

This paper presents an assessment model for addressing children's special educational needs: Assessment for Intervention (AFI) or Needs Based Assessment (NBA)[2]. The aim of this model (section 1), which incorporates recent developments in assessment (section 2), is to provide recommendations for intervention that are scientifically sound as well as useful for a particular child, teacher and parent. This paper describes the seven principles (section 3) and five stages of the model (section 4). Finally, successes, problems and questions relating to this model are discussed (sections 5 and 6).

1. Introduction

Assessment is essential for making decisions concerning diagnosis and intervention. It is functional when it generates specific information that is necessary for these decisions (Deno, 2005). The aim of AFI is to yield recommendations: how can we improve a problematic situation and achieve certain goals? In practice there often is a gap between diagnostic information on the one hand and useful recommendations on the other. AFI aspires to bridge this gap. It describes a decision-making process in which a school-psychologist systematically proceeds through a series of stages. He[3] starts by analysing the questions of the teacher, school-counsellor[4], parent and child: what do they want to know and why? These questions, combined with those of the school-psychologist, determine the purpose of assessment, the decisions to be made and the answers to be sought. AFI is functional when the questions concern both an understanding of a problematic situation (diagnosis) and recommendations on how to alleviate or solve this situation (intervention). Therefore the assessor analyses the child's learning and behaviour problems in the context of the classroom and looks for possible explanations. He generates hypotheses by applying theoretical and scientific knowledge to this specific case and tests these hypotheses with reliable and (ecological) valid instruments. This process is goal-directed: it targets relevant risk and protective factors (or weaknesses and strengths) within the child, the educational environment and the home environment. AFI aims at recommendations that the school-psychologist, teachers, child and parents find acceptable, in order to yield personalised interventions. Tailoring assessment to a specific situation decreases the gap between assessment and intervention.

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[1] With Thanks to Diana Raesner for translating

[2] In Dutch: Handelingsgerichte Diagnostiek (HGD, Pameijer & Van Beukering, 2015).

[3] Or: She

[4] An educational professional working in the school, e.g. internal support teacher. In Dutch: interne begeleider of zorgcoördinator

Assessment in general refers to two main topics (Hunsley & Mash, 2008): the *assessment process* (i.e. generating and testing hypotheses, integration of information, decision making) and *assessment methods* (i.e. tests, questionnaires, interviews and observations). AFI focuses mainly on the process and stresses the participation of the teachers, parents and child. As a prescriptive model, it outlines an optimal or desirable rather than the customary process (assessment as usual). School-psychologists can therefore use the model as a frame of reference for reflection and quality improvement by asking themselves the three questions of effective feedback (Hattie, 2009; 2013): 1) what goals do I want to achieve by applying AFI (feed up)?; 2) which elements am I already successfully implementing in my daily work (feed back)?; and 3) where is room for improvement (feed forward)?
AFI has been used for 20 years in the Netherlands and Belgium, in regular and special educational settings[5]. Many adaptations have been made over the years, eliminating aspects that were unsuccessful and expanding upon those that have shown to be effective (Pameijer & van Beukering, 2015).

AFI in the Netherlands and Belgium
Since the model was developed in 1997, it has been evaluated and improved in 2004 and 2015. It incorporates topics that are considered relevant in a recent international review-study on students with special needs (Struyf, Verschueren, Vervoort & Nijs, 2015). In the last 10 years AFI has gained increasing significance in educational practices in the Netherlands and Flanders and has generated a significant change in the way in which educational and school-psychologists think and work (Koomen & Pameijer, 2016). Dutch professional organisations promote the model as a standard for professional practice (NIP/NVO, 2013). It is a preferred method in Flanders (Vandenbroucke, 2006). Policies in the Netherlands (*Passend Onderwijs*, 2014) and Flanders (*M-decreet,* 2015) have adopted the concept of AFI. The model has also been selected as a Dutch example of 'best practice' by the European Agency for Special Needs and Inclusive Education (Pameijer & Pijl, 2006).

2. Recent developments in assessment

The concept of assessment has changed considerably over the last 10 years. Six recent developments have been incorporated (more) into the most recent version of AFI.

1. Assessment only works if it contributes to teacher instruction and student learning (Lebeer & Partanen, 2011). Functional assessment, or *Assessment for Improvement* (Hargreaves & Fullan, 2013), results in an improvement of the instructional environment and is in the best interest of the student involved. The extra support that is essential for students with special needs, often is also beneficial for other students

[5] In primary and secondary schools, with students ranging in age from 4 – 18 years. In this article we refer to students as 'children'.

in the class (Hargreaves & Fullan, 2013): *essential for one, beneficial for all*. Thus the recommendations may improve the impact of teaching on the learning of all students.

2. Assessment should focus more on the *needs of the student* than on his disorders (Frances, 2013). Instead of looking for labels such as ADHD, autism, oppositional defiant disorder, dyslexia or dyscalculia, assessors should focus on the abilities of the student and what they need to take the next step in their development.

3. Assessment should focus on *solutions and empowerment* of clients (Cauffman & Van Dijk, 2014).

4. Increasing the *therapeutic value* of assessment makes it more functional (Finn, 2007; Haydel, Mercer & Rosenblatt, 2011). During the assessment process changes occur in the client's awareness and understanding of the problem and their motivation for change. Problematic situations are improved sooner when those involved are part of the assessment process right from the beginning.

5. Regardless of their age, *children should participate in the assessment process*, according to the International Convention on the Rights of Children (1990). For example, article 12 states that every child has the right to express his opinion. Thus all students have the right to be informed and heard and their vision should be seriously considered in assessment.

6. The assessment process must be as *evidence-based* as possible. It should support an accurate case formulation of the student and his instructional and home environment. This formulation is the basis upon which goals are set and an appropriate intervention is chosen. However, the current emphasis is more on evidence-based interventions than on evidence-based assessment, which seems like "… building a magnificent house without bothering to build a solid foundation" (Hunsley & Mash, 2008, p. 3). Evidence-based assessment comprises three aspects: 1) Scientifically based knowledge of child development and learning, effective teaching and 'good' parenting. This knowledge determines what is relevant when choosing an intervention. 2) Reliable and valid research tools that have clinical relevance (ecological validity). 3) Sound decision making to formulate and test hypotheses, to integrate – often incomplete or inconsistent – information into a case formulation and to transform this formulation into SMARTI[6] goals and effective interventions. This aspect also deals with the costs of assessment and its benefits, such as the impact on intervention.

[6] Specific, Measurable, Ambitious, Realistic, Time-bound and Inspiring

How evidence-based is AFI?

AFI applies features of evidence-based assessment in five guidelines.

1. Utilise recent scientific knowledge when generating hypotheses. In testing these hypotheses, preferably use instruments that are adequately reliable and (ecologically) valid and adhere to the most recent norms and standards.
2. Remain alert to blind spots and avoid pitfalls in decision making, such as tunnel vision, by seeking alternative hypotheses.
3. When recommending an intervention, use its proven effectiveness as a strong argument.
4. Invest in 'generally effective mechanisms', such as professional cooperation with clients and conversation skills. Include clients' personal views, convictions, preferences and values in the decision-making. Recognise that you are not 'value-free' and be aware of the impact of your preferences on the decisions you make.
5. 'Investigate, comprehend and decide', reflect on the assessment process and its outcomes. Solicit feedback from clients and use this feedback to improve your assessment.

AFI utilises scientific and theoretical knowledge about what works in schools (e.g. Marzano, 2009, 2011; Hattie, 2009, 2013; Mitchell, 2015). Moreover, it applies successful practical experiences, inspiring views, professional standards and (ethical) values. Because it integrates evidence from various sources of knowledge, AFI is not only research-based, but also practice-based, client-based and value-based (Van Yperen, 2010). It deals with the 'right mix of evidence'. The term 'evidence-informed' is therefore more appropriate (Bellens & De Fraine, 2012). Even though an assessor enjoys professional freedom, we expect him to consider recent insights on 'what works'. Evaluations have shown that AFI can be implemented as intended and that teachers are satisfied with its results (section 5).

3. The seven principles of AFI

Systematic reviews on the quality of assessment have led to standards for 'good assessment'. These standards are translated into seven coherent principles of AFI: (1) it is goal-directed, aiming at recommendations that are both meaningful and useful for clients and beneficial to the child; (2) it applies a transactional perspective on development and therefore not only focuses on the child, but also on teachers' strategies and parental support; (3) it focuses on educational needs: what does this child need to achieve a specific goal?; (4) as teachers and parents are essential in achieving educational goals, AFI also focuses on their needs: what do they need to support this child's learning?; (5) assessment not only focuses on risk factors, but also on protective factors of the child, school and parents; (6) the assessor works in a collaborative partnership with the teacher, child and parents and (7) AFI follows a systematic and transparent process with five cohesive stages.

3.1. Goal-directed and functional assessment

AFI's ultimate goal is to produce effective interventions. From the outset the process is oriented towards this goal. Cooperating with those involved, the school-psychologist targets feasible interventions from an early stage. Knowing *what* needs to be changed does not yet indicate *how* this can best be done for this student, this teacher, this classroom and these parents. A successful and workable recommendation requires not only knowledge of effective interventions, it also requires consultation with clients: how does a certain approach fit into their daily work?; what do they already do according to this approach and what can be done better? Discussing such questions at an early stage increases the chance of personalised recommendations and narrows the gap between assessment and intervention.

This first principle means that only functional information is collected: 'need to know' in stead of 'nice to know'. Most clients need insight into the problem and perspective: what should we change and which approach suits us best? To ensure that only necessary information is collected, the school-psychologist applies the 'if-then rationale': *if we know ..., then the intervention ...* By doing this he prevents collecting irrelevant data and provides reasons for investigating a particular hypothesis.

Assessment is part of a change-oriented cycle of investigation, case formulation, intervention and evaluation. The student's situation becomes increasingly clearer, while assessment and intervention enrich each other. During assessment a 'change-oriented hypothesis' can be tested: if the student, teacher or parents act in a certain way, are they then able to reach a specific goal? If they are, this approach can be recommended. Furthermore, a positive change in their perception and behaviour has already been achieved.

AFI aims at improving a problematic situation. Accordingly, it focuses on variables that can be changed and, if needed, translates these into intervention-goals.

Which factors can be changed?
Factors of the child that can be improved are i.e.: prior knowledge relating to the task, feelings of competence, learning style, meta-cognitive skills, executive functions (such as working-memory, self-regulation, inhibition, planning and organizing tasks), motivation, performance anxiety, the ability to concentrate, wellbeing at school, asking for help appropriately and relationships with fellow students and teachers.
Factors in the instructional environment that can be influenced are aspects of the teacher's pedagogical-didactical support such as: quality of instruction and feedback, differentiation, cooperative learning, activities that are meaningful to students, attuning to students' level of cognition, making students 'owner' of their development, classroom management, analysing the learning-process together with students, presentation skills and being a model for what the teacher aims to teach ('practice what you teach'). In addition, classroom variables can also be influenced,

such as a pleasant and inspiring atmosphere and acceptance of a student who is different. Also, the manner in which the school-coaches, teachers, management and the director support each other in teaching can be improved.

Parental factors that influence school achievement are income, educational level and career of the parents (Marzano, 2007). These variables are hard to change. However, the way in which parents support the learning of their child at school not only has a large impact on school achievement, it can also be extended or improved. This *parental support of learning* comprises three aspects (Pameijer, 2012).

1. Parental involvement in the education of their child: showing interest in school work, discussing school progress with their child, stimulating their child to work hard at school, helping with homework, emphasising the importance of education, relating knowledge that their child gained in the classroom to daily situations so that the new knowledge becomes more meaningful, cultural outings and visits to the library and museums. Parents who enjoy reading act as a model and motivate their children to read as well. Moreover, it is important that parents support school policy, for example, by telling their child to follow the school rules. A parent can inadvertently undermine a teacher's authority by criticizing the teacher in the child's presence. Among young, vulnerable children this can result in a conflict of loyalty ('If my teacher is happy, mommy is angry, but if mommy is happy, my teacher is angry') and feelings of insecurity. For older students, this can offer the opportunity to evade school rules ('Why should I follow that rule? My father thinks it's ridiculous!'). Students who experience a difference of opinion between parents and school are at greater risk for poor academic achievement and behavioural problems at school (Colpin, 2010). It is also important that parents regularly compliment a teacher on his/her commitment to their child. These expressions of appreciation keep teachers motivated, particularly for those students who require extra time and energy.

2. *Parental supervision,* such as: monitoring and guiding their child's behaviour (while playing outside, watching television, using the computer, playing video games, etc.), ensuring that their child eats healthily, does not use drugs or alcohol and gets enough sleep, so that he/she arrives at school on time and is well-rested enough to participate in the lessons.

3. *Parental expectations*. High realistic expectations correlate with success at school. Expectations that are too low can demotivate children and lead to low achievements. Expectations that are too high can cause stress and anxiety in a child, which can also have a negative impact on learning and wellbeing.

3.2. **Transactional perspective (a contextual approach)**

Children develop through a continuous interaction with their instructional and home environments. These interactions are transactional: children evoke reactions from their teachers, fellow students, parents, siblings and friends and thereby also indirectly influence themselves. Child and context thus reciprocally influence each other which results in changes both in the child and the environment (Braet, Prins & Bijttebier, 2014). Recent insights into brain mechanisms and the interaction between genes and

environment support the value of a transactional perspective. Internal characteristics (such as temperament) and the brain ('nature') influence development, but upbringing and education ('nurture') also have impact on the development of these characteristics and the brain (Jolles, 2011). The brain appears to be more plastic than thought. Targeted stimulation strengthens certain forms of intelligence, enabling a student to profit more from education and to be further stimulated (Nisbett et al., 2012).

The development of a problematic situation is related to risk factors in the child and in the social environment (Braet et. al., 201 4). Protective factors weaken the impact of risk factors. The more risk factors are at play, the higher the chance of a problematic development (Vanderbilt-Adriance & Shaw, 2009). The risk factor 'aggressive behaviour at an early age' for example, is not directly related to behavioural problems at a later age. However, when there are more risk factors, such as a teacher who clashes with this student and parents who physically punish the child, there is a great risk of severe behavioural problems (Orobio de Castro, 2014).

Reciprocal influences: an example
A teacher influences a student (motivates the student to read) and if successful (the student is motivated to read), that student also has an impact on his teacher (the teacher feels competent, he succeeded in motivating the student to read, he experiences that he matters for this student). The arrow, therefore, does not just move from student to teacher (→), it also returns: from student to teacher (←→). This also works for the parents trying to motivate their child to read. They experience the impact of their effort (reading books with their child and discussing the content). Moreover, if the teacher gives feedback to the parents about their impact ('thanks also to your efforts, he is now motivated to read'), the parents feel competent (they experience that it matters to read with their son). In this case, the teacher and the parents will continue to stimulate the child because it works.

This principle prevents child blaming, parent blaming and teacher blaming and encourages clients' reflection. Which favourable interactions can be extended and which counterproductive interactions should be modified? For teachers and parents this means: what is the impact of my approach on the learning of this student or my child? For the child this means: what is the effect of my behaviour on teachers, peers and parents? As a result, during the assessment process clients become more aware of the reciprocal influence and their role in it. This realisation may increase the motivation to change one's behaviour (2, # 4).

3.3. Special needs of the child

AFI focuses on the student's needs related to education and parenting (2, #2). This principle shifts the attention from '*what the student has or is*' (such as dyslexia or oppositional) to '*what the student needs*'. The first question is: *which SMARTI goals are we pursuing?* Then the subsequent question arises: *which approach does this*

student need to reach these goals? These questions change the professional's mind-set from problem-oriented thinking to solution-focused acting. Talking about needs fits the idea that each student is doing the best he can (Greene, 2005). The school-psychologist and those involved search together what works best for this student. They test out an approach deliberately during the assessment process. For example: *If the teacher announces the change to come five minutes in advance, is this student (with a strong need for a predictable environment) then able to smoothly make this change (without panic)?* Or: *If peers ask this student (with a strong need for relationship) to participate, does he then display social skills (instead of clownish behaviour)?* If the particular approach works, then it can be expanded in the recommendations.

It is essential how school-psychologists look at students and how they talk about and with them. AFI focuses on questions such as:

- What knowledge or skills does this student need to acquire (goals)?
- Which pedagogic-didactic approach is required for this (educational needs)?
    - To what extent is the teacher already tuned to these needs?
    - What can be tuned better and how?

By using *support-sentences,* educational needs become more specific: *to reach this goal, this student needs: a specific type of instruction, exercises, activities, materials, environment, feedback and/or peers, teachers, parents that ...* Working with the child, teacher, counsellor and parents, the school-psychologist makes a choice: which support-sentences are appropriate and how do we specify these? In this way, the expertise of all involved is utilised (collective brainstorm) and leads to an answer to the question 'what is the ideal approach for this student?'

The impact of how we talk about students: who is welcome in your school?
Imagine that two students have registered at school, but there is only space for one. Which of them is welcome at your school (or in your class), John or Joshua?
John has ADHD, is hyperactive, moves about a lot, is impulsive and he has trouble concentrating, sitting still for extended periods and working independently. John also displays characteristics of ODD: he regularly debates with teachers ('but…!' and 'why do I have to…?') and wants to be proved right. During breaks he is frequently involved in arguments, is still angry when he comes into the classroom and remains so for an extended period of time. His parents have demanding work schedules and rarely come to school meetings.
Joshua is an enthusiastic and energetic boy with a strong need for autonomy. He needs a teacher who makes an agreement with him about his behaviour and who consistently applies this agreement. When the teacher notices an example of the desired behaviour, he says something like 'Joshua, how great that you are doing…'. When he notices undesired behaviour, he reminds Joshua of their agreement. Joshua also needs boundaries: this theme can be discussed, but that theme is not up for debate. He needs short assignments in order to work independently and in between

tasks he needs some space to move (returning or retrieving something, for example). After such a stroll he is ready to start again. He needs a teacher who discusses with him with whom and where to play in the break. During the break, Joshua needs a teacher who stimulates playing with others and who intervenes as soon as a conflict starts. This prevents arguments and anger. Joshua's parents, who are busy with four children and their jobs, are involved in their son's education. As they are forgetful, they need a reminder (by phone or mail) the day before an important meeting at school.
Usually more teachers choose Joshua with arguments such as 'I have other students with these needs and Joshua can be added in', 'My approach is already largely in line with what Joshua needs' or 'Just sending parents an email takes little time'. While for John the arguments are 'I already have three students with ADHD and two with ODD in my class, that is enough' or 'I don't feel like bothering with parents who don't show up'. However, these two are the same student: *John describes what he and his parents are or what they have, while Joshua describes what they need.* How they are described, however, evokes different associations with drastic consequences: Joshua is welcome while John is usually not.

Parental behaviour can either advance or hinder academic achievement, behaviour and wellbeing at school. When parents display behaviour that is supportive of education, they contribute to their child's learning and school success (box in section 3.1). Therefore, the school-psychologist also focuses on the support the child needs at home. These needs indicate what a child requires from his parents to reach particular learning and behavioural goals in the classroom. Support-sentences are used to concretize these needs: *to reach this goal, at home the child needs a certain type of explanation, activities, materials, environment, approach, feedback, siblings or parents who…*

Initially, the educational and parental needs of the child are described as desired actions (recommendations concerning the best approach). The school-psychologist discusses with the teacher and parents what they already offer the child ('goodness of fit'), what is missing ('poorness of fit') and to what extent it is possible to offer these extras. The additional needs are then made attainable by asking the teacher and the parents what they themselves need to support their student or child.

3.4. Support needs of teachers and parents

About 20% of a student's academic achievement is determined by the school, while approximately 80% is determined by variables of the child and his home environment (Marzano, 2007). Within the 20%, one-third of the impact comes from school factors and two-thirds from teacher factors. *Teachers, therefore, matter*, as they have the most influence at school. When they manage to adjust their teaching-strategies to the educational needs of their students, they have a positive impact on their students' academic achievements, social-emotional development and wellbeing. Teachers are

essential for their students, they can make a difference, even if they teach their students only a few hours a week. Within the other 80%, student variables (such as intelligence level and motivation) play a role, as does 'parental support of learning'. In that sense *parents also matter*.

Effective teachers do not treat all students the same, they intentionally use different approaches with different students (Marzano, 2011). By proactively supporting students, a competent teacher is able to prevent learning and behaviour problems. Such teachers have strong *pedagogical-didactic competencies*. Moreover, a positive teacher-student relationship is a key to success. A warm close relationship offers a student emotional support and security, which has a positive impact on his relationships with peers and his learning behaviour in the classroom (Koomen & Verschueren, 2016). On the other hand, a negative (hostile or dependent) relationship encourages antisocial or withdrawn behaviour in students. Thus, by investing in a positive teacher-student-relationship, one can increase academic achievement and wellbeing at school. *This is why AFI focuses not only on teachers' skills but also on their relationship with a particular student.* Once a teacher is aware of his impact, he can become a key instrument in improving the situation. Therefore, this possible impact is discussed in an early stage of assessment. In cooperation with the teacher, the school-psychologist formulates hypotheses concerning the impact of teaching strategies on the learning and wellbeing of the child.

Observing the impact of teacher-behaviour on the student's learning

The school-psychologist analyses, in close cooperation with the teacher, his teaching behaviour and the effect this has on the learning of the child. AFI developed 'checklists for effective teaching strategies' in which scientific knowledge on 'what works in the classroom' is summarized in observable criteria. For example, the checklists focus on instruction and feedback, differentiation, classroom management and dealing with behaviour problems in the classroom. The school-psychologist and teacher can select a relevant checklist (based on a particular hypothesis) and adapt the criteria to the specific situation of this teacher and this student. Such an adaptation creates ownership for the teacher: this is what I want to achieve (feed up). As the checklists can be downloaded in Word (www.acco.be), it's possible to adjust them to a specific case. The school-psychologist then observes (or films) the teaching behaviour in the classroom and the impact this has on the student and shares his observations with the teacher: this behaviour had a positive impact on the student (so continue this behaviour; feed back) and you could add this strategy (feed forward). Embedding recommendations in daily classroom routines can decrease the gap between assessment and intervention, because the recommendations are feasible.

As AFI investigates the impact teachers and parents (could) have on the learning of children, it focuses on their *support needs*: what do they need to adjust their approach to the needs of this child? Support-sentences can be used here as well: as a

teacher/parent I want to achieve … (goal). I already offer … Furthermore, I need specific knowledge, skills, a colleague/partner, parent/teacher or coach who…

3.5. Protective factors and strengths

Positive aspects of the student, teacher, class, school and parents are relevant in AFI. Insight into these aspects is necessary for understanding the situation and formulating ambitious goals and feasible recommendations. For example: a student's talents and interests, positive exceptions (when is he able to display the desired behaviour?), successful approaches (what does the teacher do in this situation?), a positive teacher-student relationship, strong parental support of learning and a good cooperation between parents and school. While taking the problems and concerns of the clients seriously, the school-psychologist also pays attention to chances and strengths, records them in his assessment report and utilises the positive aspects in his recommendations.

Every child, no matter how severe the problems, displays positive aspects. These can compensate for shortcomings in other areas. Studies have identified protective factors in children, such as an easy temperament, good intellectual capabilities, strong emotion-regulation, an internal locus of control and strong coping skills (Vanderbilt & Shaw, 2008). Beneficial aspects in the social environment, such as a supportive school team or family network can support the teacher or parents. For children with attachment problems, for example, a positive relationship with their teacher has a positive impact on their behaviour, working attitude and achievements (Buyse et al., 2011). A warm and supportive relationship with responsive parents, in which the child experiences security, emotional involvement and encouragement, is also a strong protective factor. And a safe neighbourhood with youth and sport clubs also protects children from risk factors (Masten & Tellegen, 2012).

AFI wonders: which are possible protective factors for this student, this teacher, this class, this school and these parents? Can we reinforce these factors and utilise them in the intervention? Also, explicitly stating the positive aspects is encouraging. Clients experience being stronger than they initially thought and gain more perspective during the assessment process. Giving sincere compliments furthers the cooperation between the school-psychologist, child, teacher and parents. The knowledge that some things are going well can be an incentive for a teacher or parent to change a disrupted interaction with the child (De Jong & Berg, 2010).). In conflict negotiation the positive aspects that the parties mention about each other are the ones that can be put to good use to achieve alignment.

For the assessor the presence of positive factors indicates the degree of severity: the fewer positive elements, the more severe a situation is. Positive characteristics can also indicate how probable a particular hypothesis is. For example, an ability to empathise would mean an autism spectrum disorder (ASD) is improbable. Nor is

there a large chance that a school's chess champion has a poor visual working memory. It is interesting to note the 'positive exceptions' during a class observation: during which moments and in which situations is the child able to follow instructions and focus on the task?; when is the problem behaviour absent/does the desired behaviour occur?; what does the teacher (or a fellow student) do at these moments?; can this successful approach be applied to the problematic situation? By then testing a change-oriented hypothesis, a suspected effective approach can be tested in an experiment during the assessment.

A balanced overview of risk factors, protective factors and the interaction between them produces an ecologically valid *case formulation*. Moreover, it is simpler to boost positive factors than to reduce risk factors (Carr, 2014). School-psychologists, children, teachers and parents formulate more ambitious *goals* when they involve their positive aspects. They are more optimistic about the expected success and act accordingly. They pass this optimism on to each other, which is also beneficial. The more positive the expectations, the greater the chance of applying the recommendations and achieving the goals.

Finally, positive aspects can be translated into the student's *educational and parenting needs* and the *support needs* of his teachers and parents. A few examples: A student's interest in bears can be used to make a biology lesson meaningful. The feedback that worked in the classroom is perhaps also effective on the playground. The colleague with strong class management skills can coach a chaotic teacher with whom he has a positive professional relationship. The successful approach parents applied in the past is recommended again and the involved grandparents can motivate parents for the support they need in in order to support the learning of their child.

In short, AFI focuses on the child's positive factors and his context and examines their potential (or capacity) for change. As these factors are already available, increasing their impact in the recommendation bridges the gap between assessment and intervention.

3.6. Collaborative partnerships

Assessors cooperate with students, teachers, counsellors and parents when searching for explanations and formulating goals and needs. This is an essential feature of professional practice and a key condition for ecologically valid assessment and effective recommendations (Carr, 2014). Clients are more than just sources of information, subjects of research and executors of recommendations. As hand-on experts through experience, they have good insight into the possibilities for change. They play a key role in translating diagnostic data into an attainable intervention that is suitable to their context. Cooperation, therefore, is necessary to bridge the gap between assessment and intervention.

The insights and solutions of the child, teacher and parents are just as valuable as those of the school-psychologist. If a school-psychologist ignores their knowledge, then it is difficult to establish contact with them and the assessment will have little meaning. This principle therefore is to talk *with* the student, teacher and parents as much as possible and to talk as less as possible *about* or *to* them. Regardless of the student's age (and its associated professional ethical position) AFI/NBA aims to include all students (even students younger than 12), their teachers and parents (even those of students older than 16) in the assessment process. When professionals from within the school or youth welfare are also involved, the school-psychologist considers including them in the process – if the client gives permission – as their expertise improves the decision-making process. The school-psychologist customises/tailors his assessment to this student, this teacher and these parents: what do they need to reach a particular goal? He translates their knowledge into professional knowledge. This goes both ways: he also translates scientific knowledge into their personal framework, in order to make the information meaningful to them. Only then, they will understand the case formulation and recommendations. All those involved jointly discuss the things that are going well and those that are more difficult (overview), they collectively analyse the situation in a brainstorm (insight) and seek out an approach that works (outlook).

Clients are becoming increasingly well informed and articulate. Thanks to internet, they have easy access to all kinds of information on learning and behaviour problems. As a result, students, teachers and parents may approach a school-psychologist with specific questions and clear requests concerning a particular diagnosis, label or intervention. The school-psychologist is interested in these questions and the reasons why they are asked. From the outset, AFI aims at openness in the communication with clients (transparency). As 'co-assessors' they participate. Elements of solution-focused approaches, empowerment (section 2, #3) and therapeutic assessment (section 2, #4) are incorporated in this principle.

Functional assessment is still a challenge for school-psychologists (Pameijer & Van Beukering, 2015). Lack of time, few possibilities for meetings, and the gap between the school-psychologist's 'theory' and the educator's teaching practices limit the viability of advice. Teachers often have difficulty implementing the recommendations in their classroom, because they are too general. Potential tensions between working with a group versus working with an individual student may hinder the feasibility of certain recommendations. By working intensively together with the teacher, preferably in his classroom and fitting the recommendations to his teaching practices increases the usability of these recommendations.

The cooperation is characterised by equality. Each partner has specific knowledge, a particular role and responsibility and makes a valuable contribution to the assessment process. However, in order to avoid conflicts, it must be clear who decides on what.

Roles and responsibilities

Students are co-investigators. The school-psychologist takes into account the child's own vision and experiences. The manner in which a student observes and interprets the situation and himself, largely determines his behaviour and motivation for change. Students have unique knowledge of situations, knowledge which their teachers and parents lack (Van Aken, 201). This information is valuable to the case-formulation and recommendations. Students should not only be informed, their opinions should also be heard and taken seriously (section 2.5). Important questions to ask children include: what do you think is wrong and how come?; what is going well and why?; what do you want to achieve in the future?; who can help you in achieving this goal and how? Often their solutions are simple and fit in well in daily situations in the classroom and playfield. Self-assessment procedures and portfolios also enhance student's participation. As the child is the school-psychologist's main client, he acts as the student's voice, representative and advocate.

T*eachers and school-counsellors are educational professionals*. They know the child as a student best, are aware of his school history, learning strategies, working habits and know how he functions socially. They see the child in multiple situations at school. They have insight into the child's needs and whether a particular intervention may work. They also have an overview of the actual instructional setting and the prospects for change. *They are responsible for decisions about teaching and additional in-school support.* Without them, a school-psychologist cannot understand the instructional environment and cannot give workable recommendations. Teachers indicate themselves what support they need to integrate the recommendation in their classroom (their support needs).

Parents are experts through experience. Parents are considered 'hands-on experts', they know their child best and see him in a wide range of situations, inside and outside the family. Parents have essential information about what the problem might be and can provide valuable ideas for the approach at school. Parents decide whether or not to accept recommendations regarding their parenting behaviour. They are caring and competent, want what is best for their child and are aware of their responsibilities (unless there is evidence to the contrary). Capable of overcoming difficulties in their parenting and improving their education-supportive behaviour, they express what support they need to do this (their support needs).

School-psychologists are scientist-practitioners and responsible for the assessment. They combine the role of expert (working according to scientifically sound standards) with the role of a collaborative partner and coach. They know at what moment they need to switch roles to achieve a certain target. They offer their knowledge and expertise to help clients and emphasise that in the end the clients are responsible for making choices. Despite extensive tuning to the preferences of his clients, the school-psychologist always guards the quality of the assessment and the interests of the child. He also remains responsible for the set-up, content and outcomes of the assessment process.

Meta-communication

Constructive cooperation requires investment from all parties involved. It requires an assessor with a professional attitude of warmth, empathy, sincerity and respect. Furthermore, communication skills are needed, such as meta-communication: 'information about his frame of reference'. The school-psychologist should voice things that seem obvious to him, as they may not be so evident to the student, teacher or parents. To prevent misunderstandings, the school-psychologist is open about:

- his intentions: *the goal of this meeting is that we jointly…; what goals do you have?;*
- the questions that he asks: *I am going to ask you a question about …, because …;*
- the things he discusses: *I am going to talk about …, so that …;*
- and he evaluates the discussion: *did we reach our goals?*

3.7. A systematic and transparent assessment process

European guidelines define assessment as a process of hypothesis testing designed to answer clients' questions and to solve their problems (Lebeer & Partanen, 2011). This process includes important decisions that may have a large impact on the learning and well being of children (Brown-Chidsey, 2005). Therefore this process should take place in a systematic, objective and consistent way and should be transparent for colleagues and clients (Carr, 2014). An assessment model, such as AFI, supports these aims by clearly stating which decisions are involved.

AFI progresses systematically in five stages, each stage with its own steps. In these stages the six aforementioned principles are detailed in guidelines. Guidelines offer direction and prevent unwanted variations in practice without affecting the desired variation in specific cases (Van Yperen, 2010). The guidelines act less like binding rules and more like a framework in which all parties involved can cooperatively address questions. These procedural guidelines comprise scientific knowledge, practical experience, professional standards and values. By explicitly stating the procedure, clients understand the structure of the assessment process. Systematically following a model, such as AFI, increases the likelihood of consistent and objective decision-making (Kazdin, 2005). Although the model does not prevent differences between assessors, their decisions at least become *transparent* to colleagues, teachers, counsellors, parents and children.

Pitfalls in decision-making

Effective assessors generate alternate hypotheses and interventions before formulating a case formulation and recommendation (De Bruyn et al., 2003). Just as everyone does, assessors utilise informal cognitive strategies to arrive at the best possible decision in complex situations (Witteman et al, 2014). However, these shortcuts – or general rules of thumb – may result in incorrect decisions. Assessors, therefore, need to be 'their own devil's advocate' and search for their own discrepancies (Witteman et al., 2014,

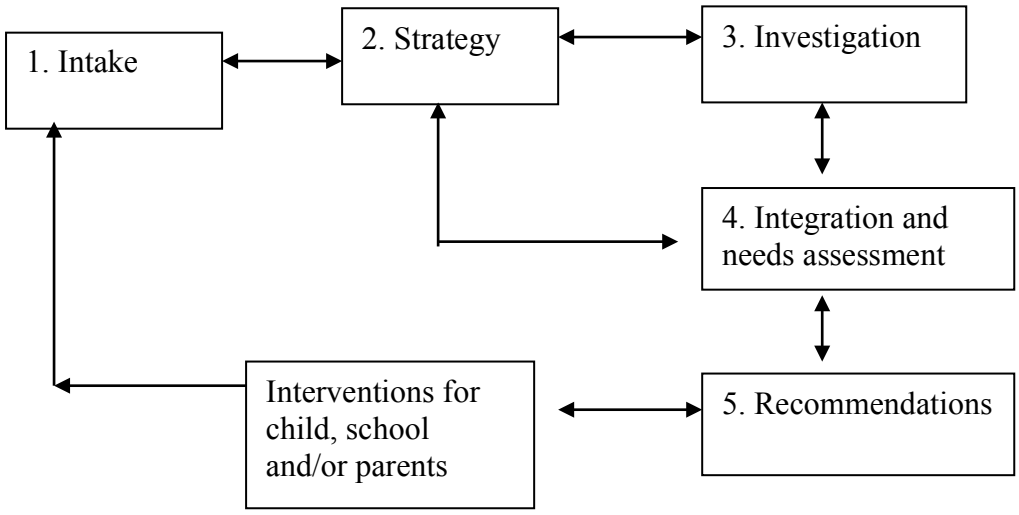
p. 35). AFI translates knowledge concerning the quality of decision-making into guidelines, so that school-psychologists can protect themselves against the most common pitfalls, such as tunnel vision ('confirmation bias') and too much trust in their favourite hypothesis and recommendation ('overconfidence'). Examples of guidelines are: prevent tunnel vision by consciously considering alternative hypotheses and various recommendations, search for data that could contradict your preferred hypothesis ('falsification') and don't be too confident about your own ideas (Haynes et al., 2011).

4. The five stages of AFI

AFI consists of five stages, which are closely linked in a cyclical process with systematic feedback loops. The stages can be applied by a single school-psychologist or by a multi-disciplinary educational team. Each stage consists of several coherent steps that support the decision-making process and guard the seven principles. Generally effective mechanisms are incorporated in the different stages (section 2, #6). Mechanisms concerning communication skills are outlined in the collaboration stages 1 and 5: intake and recommendations. The critical research attitude ('investigate, comprehend and decide') is implemented in the reflection stages 2 and 4: strategy and integration/needs-assessment. As a scientist-practitioner the school psychologist invests in collaboration with schools, students and parents and applies scientific knowledge to the specific situation of this student, this school and these parents.

In practice the stages often overlap, but AFI discusses them individually in order to realize a conscious and clear assessment process.

Figure 1: Five stages in the assessment cycle



4.1. Stage 1: Intake

The first goal is to collect information so that the school-psychologist can determine a strategy for a specific case, i.e. which stages are necessary to answer the questions? Another key objective is to achieve compatibility with the school, child and parents, in order to create a constructive partnership (section 3.6). As the case formulation and recommendations will only be accepted when there is consultation with those involved, the responsibilities, expectations and wishes of those involved need to be crystal-clear and realistic. The intake-stage contains six steps.

1. Preparation: who is taking part in the first meeting and what are their positions and roles?
2. Reasons for assessment, questions, aims, expectations and requests: what do those involved want to know and why? What do they intend to accomplish (or avoid)? Which case formulations and recommendation would be good or bad news to them? What do they hope for and what do they fear?
3. Overview: client's perception of the problematic (hindering) and positive (stimulating) aspects of the child, educational and home environment.
4. Relevant past history: anamnestic information, previous activities and effects, e.g. what worked or did not work and why (not)?
5. Attributions, goals and solutions: what could explain the situation according to the child, teacher, counsellor and parents? What do they want to accomplish and how? What are their solutions?
6. Conclusion: questions of the clients and school-psychologist, appointments for cooperation (who collects which information, why, how and when?; when will we meet again to discuss our findings?) and evaluation (have we collected relevant information and was the cooperation constructive?).

From the start, the school-psychologist works goal-directed: what do this teacher, counsellor, parent and student want to know and why? Once they have this information, how will it change their behaviour? What do they want to achieve for themselves and each other? From the outset the school-psychologist tries to understand the opinions, wishes and expectations of those involved. How do the teacher, child and parent describe and explain the situation? For example: a demotivated child, an incapable teacher, a hectic class or an indulgent parenting style. Can they influence these factors? How could they improve the situation? The answers to these questions often shed light on their motivation to change, for example, to attune more to the child's educational needs. If a teacher recognises his contribution to the situation, he will be more motivated to change his teaching than when he is convinced that the problem is caused by the child (e.g. a low intelligence level) and the parents (e.g. overprotection).

From the client's perspective to the assessor's strategy

In order to match with the perspectives of the school, parents and child, the school-psychologist not only needs to know what problems and positive aspects they experience, but also needs to be aware of their 'personal theories'. These include their attributions – what they believe causes the problems – and their solutions. Attributions can relate to the child ("she has dyscalculia"), the instructional environment ("the teacher's math instruction is ineffective") or the parenting situation ("the parents have too high expectations of their daughter's math achievement"). The school-psychologist takes the attributions of all involved seriously and may convert them into hypotheses. By doing this, he benefits from their expert knowledge and also avoids tunnel vision. This does not mean that all attributions are investigated. However, it does mean that the likelihood of clients' assumptions is considered, as is the relevance for recommendation. The school-psychologist relates his view to the views of his clients. By doing this, the assessment becomes more meaningful to them. Considering the concerns of a client provides insight into the request itself and sheds light on a possible underlying question. Parents may feel anxious ("I'm afraid he has autism and will be sent to a school for special education") or guilty ("Are we too strict by punishing her for the low grades at school?"). Teachers may feel disappointed or insecure ("I've given this student so much extra attention and have achieved so little, am I doing the right thing?"). If these feelings and questions are ignored, it is unlikely clients will recognize the case formulation and accept the recommendations. Therefore they may look elsewhere for support ('shopping'). Reciprocal negative perceptions and conflicting interests can influence the information clients provide, as it may be biased. In such cases it is up to the school-psychologist to work towards an agreement with the various parties before continuing the assessment process.

4.2. Stage 2: Strategy

The main question of this stage is: how to proceed in this case? Do we need stage 3 or can we move on to stage 4? The input is the information collected in the intake and the output is the strategy that best fits a specific situation. This is done in four steps.

1. *What do we know already?* The relevant information is organised in four clusters (multidimensional): (1a) student, (1b) instructional environment, (1c) parental support of learning, (1d) history and degree of severity (1e).
2. *Do we need to know more to answer the questions*? Is the stage of investigation necessary or can we move on to stage 4? By applying the 'if-then-rationale', the school-psychologist checks if extra information is required to formulate a case formulation and suitable intervention (section 3, #1).
3. *If stage 3 is required: what information is needed?* Alternate hypotheses from a transactional frame of reference are formulated (3a), the relevant hypotheses are selected, based on their impact on the choice of an intervention (3b) and these hypotheses are translated into questions for investigation (3c).
4. *Conclusion of the strategy:* are we moving on to stage 4 or is the investigation-stage necessary?

Often, in assessment more data are collected than required to answer a particular question. Sometimes even 'not-asked questions are answered' while 'asked questions are not answered'. It is hard to translate irrelevant information into educational needs, required teaching practices or parental support. The information gathered should therefore be confined to what is strictly necessary for addressing the problem (Salvia & Ysseldyke, 2004). The collection of data thus becomes more goal-directed: its purpose is to yield recommendations that solve (or alleviate) the problems within the instructional environment. The generated hypotheses should be academically sound, plausible in light of the information at hand and testable. The school-psychologist does not formulate just any hypothesis, but combines the information available with his professional expertise and evidence-based knowledge. The bottom line is: no *investigation unless the outcomes will influence the intervention*. Each question is therefore justified with the 'if-then-rationale': if we know ..., then we can recommend …, however if we don't know…, then we cannot yet recommend …. This way, collecting data is directly linked to intervention.

Examples of the 'if-then-rationale': 'need to know' instead of 'nice to know'

Monique (age 10) has a poor attitude concerning schoolwork: it takes a long time before she begins to work on a task. Once she has begun, she quickly stops again.
Questions for investigation: Is the teacher tuned to Monique's need for emotional support? Does she provide sufficient instruction and feedback before and during the task? Is Monique's poor attitude possibly maintained by poor class management? Are there clear routines and guidelines (e.g. for asking extra help) and tools to visualise the organisation and planning of tasks?
If-then-rationale: *If* the teacher is not yet fully tuned to Monique's needs, *then* she needs to focus more on her instruction and feedback. *If* the classroom management is not the most favourable, *then* the teacher possibly needs support to improve this. *If* the teacher already is tuned to Monique's needs and has a strong classroom management, *then* these are facilitating factors and the message will be: "this aligns well with Monique's needs, so continue with this!"

Teddie (age 8) is gifted and has characteristics of an autism spectrum disorder (ASD).
Question: does Teddie have autism?
If-then-rationale: Gifted students may have problems that indicate ASD. However, as these problems are often associated with the giftedness, there is a risk of an incorrect ASD label (Webb et al., 2012). *If* Teddie's behaviour meets all the criteria for ASD, *then* he needs an ASD approach for gifted students. However, *if* he does not meet all the criteria, *then* he most likely still needs this approach. Considering the risk of a wrong label and as the general outline of the recommendations is already known, investigating ASD is not necessary for now. Furthermore, Teddie is only 8 years and the possible ASD, if required, can be investigated later on. For example, when the recommended approach has proven to be unsuccessful, he himself, his teachers and

parents don't understand his behaviour, realistic goals and needs cannot be set or when an effective approach is still missing.

Patricia (age 13) is an only child of a single mother. She has been truant for the last two months, staying at home.
Questions for investigation: Does Patricia stay at home because she is worried about the health of her mother, who has migraine headaches? And/or does she stay at home because she is being bullied at school?
If-then-rationale: *If* Patricia is worried about her mother's wellbeing, *then* youth services needs to provide support. *If* she is being bullied, *then* the bullying will need to stop through coaching her teachers, her classmates and Patricia herself.

When generating hypotheses, the assessor focuses on the compatibility between the teacher's and parent's expectations and approach on the one hand and the child's abilities and needs on the other hand (section 3.2). The 'goodness of fit is questioned: to what degree is the approach tuned to the student's needs? For example, if expectations are too high, the student cannot possibly meet them, whereas if they are too low, he is not sufficiently challenged. In both cases, an inappropriate approach may lead to problems. When informing teachers and parents about the purpose of the investigation, it is important to explain this concept of compatibility. It helps them understand why a particular approach works with one child but not with another and how they can improve their impact on the child.

4.3. Stage 3: Investigation

The gathering of information is question-driven. Data are collected in six steps in order to answer the questions for investigation.

1. Operationalize the concepts in the questions.
2. Choose the appropriate tools and instruments.
3. Formulate testing criteria: when do we accept or reject the hypothesis?
4. Consult the clients: can they participate as co-researchers?
5. Gather the data necessary for testing the hypotheses.
6. Interpret the data and answer the questions.

This stage involves a goal-directed rather than a routine collection of data. The selected hypotheses and questions determine the information that needs to be gathered. Not only tests and questionnaires are administered, but those involved can also be interviewed, the impact of teaching or parenting strategies on the learning of the child may be observed and existing formative and summative data can be analysed. If possible, only ecologically valid and reliable instruments are used. The content of this stage thus varies in each case, leading to a flexible application of the model, ranging from one instrument to several different tools.

Investigating the potential for change

Exploring the learning ability (zone of proximal development) of the student, teacher and parents can contribute to a feasible recommendation (Koomen & Pameijer, 2016). A *change-oriented hypothesis focuses on changeability*. By manipulating a particular variable, according to the hypothesis, one tries to find out whether the expected positive change occurs. With an experiment insight is gained into both the child's changeability and the teacher's potential for change. This insight further expands if the teacher, as a co-researcher, registers what occurs prior (*antecedents*) to the student's *behaviour* and what occurs thereafter (*consequences*), thereby identifying provoking and reinforcing factors (Mitchell, 2015). Such a functional ABC-analysis of positive or problematic behaviour can be translated into recommendations that fit in the classroom (Vargas, 2013). It can become clear for example, that a child exhibits aggressive behaviour during unstructured moments when there are no organised activities (*antecedent*). In another case, the analysis could indicate that a child's disruptive behaviour, making funny noises, is stimulated by classmates' laughter and the teacher's correction (*consequences*). Based on the first analysis, a change-oriented hypothesis formulates that better structuring the activities and rules possibly leads to a decrease in aggressive behaviour. Based on the second analysis, the hypothesis states that if the teacher rewards both the child and his peers as soon as they show task-oriented behaviour, this might lead to a drop in the noise making.

Two other examples:

- If this student does her arithmetic training exercises (addition and subtraction with numbers less than ten) twice a day for five minutes during three weeks, will she then pass the test coming up in three weeks?
- If the teacher uses a direct instructional model with effective feedback for reading comprehension, intensifies the instruction and also focuses on certain strategies for reading comprehension in the other lessons, will this student then apply these strategies correctly in a month?

It is also possible to formulate a change-oriented hypothesis that is independent of the factors influencing the problem. Examples of this:

- Given his oppositional-defiant behaviour and his strong need for autonomy, Jos will benefit from an approach which allows him to make choices within clear boundaries (right now you have to ..., but you may choose how/where: … or …). Thanks to this approach, he will debate less often with the teacher.
- Given her dyslexia Martje would benefit from an approach using mathematical story problems with a combined visual-auditory method (watch and listen). As a result she will enjoy arithmetic more and score higher on the next arithmetic test.

These two hypotheses are based on knowledge of recommendations that are generally effective among children with particular characteristics.

A school-psychologist can also explore the learning potential or changeability of a child in a one-on-one situation, e.g. with dynamic testing (Bosma, 2013): which hints are effective? However, translating the hints that work in the one-on-one situation to the teacher's strategies in the classroom might be difficult. This is why additionally observing the teacher's approach is necessary: what does he already do that corresponds with the effective hints and how could he further improve his approach? By testing (ecologically valid) hints that are closely linked to effective teaching strategies that can be applied in the classroom, the gap between the one-on-one hints and the classroom practices may be reduced.

In short, in AFI the context is also subject of investigation. The assessor examines the child in his natural environment and incorporates his teachers, classmates and parents as they might be causing or perpetuating the problem. Data gathered in the context have a higher ecological validity than data gathered in a room outside the classroom. These data are also more easily translated into personalised recommendations, as they are tailored to the teaching strategies of a particular teacher.

4. Stage 4: Integration and needs assessment

Stage 3 provided answers to the questions for investigation. In this stage these answers are translated into the personal theories and questions of those involved. This way, the particular child, teacher, school-counsellor or parent understands the answers and they become more meaningful to them. The school-psychologist now summarises and integrates the gathered answers into a specific case-formulation. As this formulation is translated into goals and needs, this stage is also called 'pre-treatment-assessment' (Haynes et al., 2011). Stage 4 supports the bridge to intervention and includes five steps.

1. Transactional case formulation: how can the situation be understood?
2. Goals for the child, teaching strategies and parental support: what do we *need* or *want* to change and what *can* we change?
3. What does the child need to achieve these goals? What do the teacher and parents need to offer a fitting approach?
4. Recommendations based on the needs.
5. Estimation of the most appropriate recommendation.

In a transactional case formulation, factors relating to the student, instructional setting and home environment are included as risk factors if they contribute to the problem, while factors protecting the child from these risks are reported as protective factors. This information is explicitly related to the initial questions of those involved and to their personal theories, making the case formulation meaningful to them. However, a case formulation seldom leads directly to recommendations that are both desirable and workable. Although it points to *what* should be changed and enhances the consistency between the collected data and the recommendations, it does not indicate *how* this change can best be made for *this* student, *this* teacher and *these* parents. This dilemma

requires answers to the following questions: (1) What are the SMARTI goals? (2) What do the child, teacher and parents need to achieve these goals? (3) What interventions are desirable and what arguments support or oppose these options? (4) Which of the options seem achievable in this case? Alternate interventions are considered to avoid tunnel vision. As there is no "one size fits all" (Deno, 2005, p. 24), the recommendations also need to be personalised. As several interventions focus on the same target, choices have to be made. AFI then prefers the intervention that has been proven to be effective (2, #6). A school-psychologist should not recommend an approach that is known to be ineffective, even though it might be popular. Decades of research into effective education and effective teachers have provided useful information to support the school-psychologist in this stage.

Effective recommendations in education: what works?

Marzano (2007; 2008; 2011) describes successful approaches, after analysing 35 years of educational research (1.200 studies). For example, he concludes that schools determine 20% of a student's academic achievement, while 80% is determined by characteristics of the student (such as intelligence and motivation) and his home situation (such as education level and parental support of learning). Of the 20% attributed to education, two-thirds comes from the teacher's behaviour and one-third from school practices. The teacher therefore matters: within the school, they have the most influence on students. When teachers adapt their teaching strategies to the educational needs of students, they dramatically improve their students' achievements and wellbeing. Teachers are therefore essential to their students' futures, particularly to those students requiring extra support. They can also be a protective factor for at-risk students (section 3.4). Characteristics of effective teachers include: good educational techniques, strong classroom management (e.g. clear routines and rules), positive relationships with students, adequate and consistent responses to behaviour (e.g. rewards for good behaviour; specific consequences for undesired behaviour) and the correct mental attitude (e.g. growth mindset in stead of a fixed mindset). Effective teachers are good instructors and speakers who communicate clearly, they are friendly, helpful and likeable. They empathise with their students, understand their worlds and they listen seriously to students, colleagues and parents. Characteristics of an effective teacher also include:

- Being present: they quickly and accurately determine problem behaviour and respond immediately. They are continually aware of what is going on in the classroom and constantly see and hear what is going on ('they have eyes in the back of their heads'). They are promptly aware of incidents, before they escalate, and they address the right students.
- Emotional stability: they deal with disturbances in a calm and professional way, they respond neutrally to a student's disobedience or misconduct instead of being offended, irritated or angry. They ask themselves why the student behaves in such a way (what is the function of this behaviour?) and they do not believe the child's behaviour is intentionally aimed at them.

- They have a positive view of students and create sufficient opportunities for direct, specific and sincere compliments.
- They have found a balance between their dominance on the one hand and the students' involvement on the other. They provide the framework and boundaries, the students are involved in filling it in.
- They display personal interest in individual students by asking them about their interests, hobbies and lives outside school. This substantially improves the student-teacher relationship.

Hattie (2009; 2013) analysed 50.000 studies to determine what contributes to successful learning. He researched how excellent teachers ensure that their students learn successfully. This offers insight into interventions that are generally effective or ineffective. Hattie's conclusions are interesting when reflecting in stage 4. His books contain 'shortlists', ranking the effectiveness from very large to hardly any and even counterproductive. There is a 'top 20' with the most effective interventions and a list with the least effective interventions. Hattie explicitly warns against using his lists as a recipe book, as '*passion for education and love of children are above any intervention'*. Still, we mention some of his findings, because these are relevant to this stage of AFI.

Effective actions and interventions	Effect on performance[7]
Self-reported learning: the student gives himself a grade in advance, he predicts his grade based on past performances, with an emphasis on high expectations	1.44
Direct feedback during learning: informative and positive-reinforcing	1.13
High quality of instruction (direct instruction model) and strong classroom management	1.00
Instruction to a small heterogeneous group	0.88
Prevention of disruptive behaviour with clear routines and rules, made with and supported by students	0.80
Predictable behaviour from the teacher, high expectations of students, and exercises appropriate for students, fitted to their needs in order to achieve certain goals	0.75
Evaluative discussions with students: asking questions, clarifying a situation together, dialogue, problem-solving with a learning scheme and summary in a word field or mind map	0.74
Allowing students to formulate their own goals	0.74
Positive student-teacher relationship: non-directive, empathy, warmth	0.72

[7] Degree of impact: greater than 1.0 = very large effect, between 0.6 and 1.0 = large effect, between 0.4 and 0.6 = moderate effect, between 0.0 en 0.4 = small effect, less than 0.0 = negative effect.

and encouragement of 'higher order thinking'	
Subsequent directed feedback, immediately following learning	0.65
Challenging and ambitious goals	0.56
Parents guide learning in the school Improving parental involvement and support of learning at school	0.55 0.49
Social cohesion in the class	0.53
Cooperation with other students, cooperative learning (peers or tutors)	0.50
Strategically increasing student's motivation	0.48
Boost student's self image	0.47
Teacher's ambitious expectations of the learning of his students	0.44

Whereas Hattie focuses on interventions that are effective for all students, Mitchell (2015) describes 27 evidence-based teaching strategies that 'really work' for students with special needs. His '10 favorite interventions' include cooperative learning, peer tutoring, supporting parents to be involved in the education of their child, functional behaviour analysis (ABC) and formative assessment and feedback during learning.

Once an intervention can be suggested, the school-psychologist estimates if it is achievable in this specific case. In stage 5, he discusses his recommendations: are his clients willing and able to act according to this desired approach?

5. Stage 5: Recommendations

At this point much has already been achieved. Key problems are understood and optimal or desirable recommendations are known. The teacher, child and parents have been involved in the assessment process from the outset, cooperating closely with the the school-psychologist. They have been asked about their expectations and unrealistic expectations have already been adjusted. The abilities and needs of the child, teacher and parents have also been taken into account. In short, the foundation has been laid for personalized answers.

In this last stage the clients are informed about the outcomes. The aims of this last stage include answering client's questions, objectifying goals (what will we notice, see and hear once this specific goal is achieved?), matching these goals to specific needs and supporting clients in choosing the intervention with the highest chance of success. The parties involved discuss, question each other and listen. Hopefully, they approve of the case formulation and choose one of the outlined recommendations. *The result of this stage is a tailored intervention, with sufficient support to be successfully implemented*. The information exchange is personalised in order to answer the questions of this child, this teacher and these parents. By providing them with clear and meaningful information, related to their 'personal theory', hopes and worries, they can choose for *themselves* which option is both desirable and achievable. In other words: what fits them best.

This stage contains five steps.

1. Preparation: what are the goals of this meeting and who should participate?
2. Discussion of the case formulation: do clients recognise this formulation? To what extent do they agree or perceive the situation differently?
3. Discussion of the goals, needs and recommendations, supported by arguments. Do clients have additional ideas, solutions or arguments?
4. Clients choose one (or more) of the suggested recommendations. This workable option then becomes the intervention.
5. Conclusions, evaluations and appointments.

An important goal of this last stage is to arrive at a feasible intervention, supported by all parties. In other words: are they willing and capable to 'start tomorrow'? In principle, this stage cannot be finished until the answer is affirmative. Only then, the child, teacher and parents look forward to applying the intervention. As it's likely to be successful, it inspires them to change their perceptions and behaviour. If this is not yet the case, the assessment process continues with further consultation. This means, that the school-psychologist does not attribute a clients refusal to agree with a certain recommendation, to resistance. Instead he asks himself: how come my recommendation does not match with the abilities, needs and preferences of this student, this teacher or these parents?[8] This aim has far-reaching implications for the evaluation of AFI, as this not only concerns the quality of the case formulation, but also the acceptance of a recommendation.

For example: cooperation during stage 5

In general, we know what recommendations are desirable, as we know what usually works. But what works for many is not necessarily effective in a particular case. Determining whether an intervention is achievable in a specific situation requires arguments concerning the one who will implement the intervention: the child, teacher or parents and others who might be involved, such as classmates, colleagues or family. Arguments pro predict success, arguments contra make this unlikely. Many of these arguments can be summarized in two client-characteristics: their willingness and ability to make every effort in relation to the intervention. In other words, are *this* child, *this* teacher and *these* parents willing and able to act on this intervention? How useful do they find it? Are they confident of its success? Do they wish to try something new and change their usual behaviour and routines? Can they organise the extra time and invest the extra energy? Can they apply the desired approach in their daily practice? If so, this considerably boosts the chance of success. Therefore the assessor discusses these questions with clients. His recommendations are proposed rather than imposed, as imposed advice may lead to disapproval and resistance. If a teacher, for example, sees absolutely no need for a reward system as this is against her personal view ("I refuse to

[8] Certainly there are limits to this consultation, for example when something must change in the interest of the child (e.g. in case of bullying).

reward one student for behaviour that his classmates do by themselves"), the assessor should recognise that however much confidence he might have in the reward system, it will be undermined by this teacher. Only when, following consultation, the client says: "Fine, I agree, I can do that, I think it will work", will the intervention become achievable. In this example, once the assessor had explained the rationale behind the reward system, the teacher responded with: "OK, now 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. I will explain this approach to my students as a way of dealing with the differences in my class. I feel good about this idea, I'm even pretty sure it will work."

In the end, the assessment process is evaluated by both the school-psychologst and the clients:

- Have we achieved our goals?; are clients' questions answered?; was the assessment functional?; has our insight into the problematic situation increased?; do the child, teacher, counsellor and parents have more perspective?
- Client's are asked for feedback: what did the assessor do professionally well (compliments for …)? And what could he do better in a similar case in the future (suggestions for the next case …)?

Appointments concerning the monitoring and evaluation of the intervention are made: who is doing what, why, when and how? This information is valuable feedback for both the case formulation and the recommendations (section 2, #1).

A short cut through the stages?

Sometimes enough information is gathered and interpreted in the first two stages. A case formulation, goals, needs and recommendations can already be formulated. The third stage is therefore no longer needed: the case moves on to stage 4. This is called a 'short-cut'. The principle is: no investigation, *unless* additional information is necessary. For example, an intelligence test is only done when there is a strong suspicion of a below or above average intelligence level or a significant disharmonic profile and when it is not sufficiently clear:

- what explains the problematic situation (case formulation);
- which goals are ambitious and realistic;
- and what the student needs to attain these goals.

If the above is sufficiently clear, then investigating the level of intelligence has little functionality. However, if the intelligence level is necessary for admission to a particular school for special education or specific youth services, then the investigation becomes functional, as it contributes to answering the question whether the child can be admitted or not.

Checklists

In AFI/NBA checklists accompany the decision-making at each of the five stages, functioning as a reminder, summary of guidelines and protection against common mistakes or pitfalls in decision-making (section 3, #7). For example: in order to develop an intervention plan with a high chance of success, the school-psychologist can discuss the checklist 'bridging the gap between assessment and intervention' with the specialist involved and the teacher, school counsellor, student and/or parents.

Checklist 'bridging the gap between assessment and intervention'	+ ? -
1. Is the plan based on a recent assessment of the hindering and stimulating factors of the student, educational context and parental support of learning? Does the plan match with the transactional case formulation and matching the goals for intervention?	
2. Are the goals clear? Do they mention both a long-term perspective and short, quick goals for the near future? Are the short-term goals SMARTI? Are they challenging and ambitious but also realistic? Is it clear what those involved will actually notice, see and hear if these goals have been met?	
3. Is it clear what the student needs in order to meet the short-term goals? Are his educational needs incorporated into the plan? For example, are the support-sentences used to clarify his educational needs?	
5. Can the student's teacher implement the plan in the classroom? Is the plan embedded in the teacher's classroom management? Is there consideration of the quantity and quality of extra instruction, feedback, practise and support? Is time scheduled for all of this? What do the other students do when the teacher provides this student with extra support? Can other students also benefit from the extra support ('essential for one, beneficial for more')? If it is not feasible for the teacher to implement the plan in the classroom and therefore the specialist is the one to work with the plan, then the following questions are relevant. a. Does the student continue to benefit form the instruction and practising in the classroom? Does the student benefit from his teacher's support and can he continue learning in the classroom? b. Does the teacher remain responsible for the student's progress? Does he remain involved and does he keep control over this student's education and extra support? c. Do the activities outside of the classroom match well with the teacher's strategies? Do the specialist and teacher regularly meet for consultations in order to match their approaches?	

d. Are high quality tools, materials and meaningful tasks being used? Do they fit with the student's interests, teaching methods and the rules of behaviour in the classroom? e. Is confrontation with different strategies (e.g. of the student himself, the teacher and the specialist) avoided? Does the specialist adapt the strategy he teaches the student to the teacher's and student's own strategy in order to prevent 'double learning'? f. Does the student continue to benefit from the stimulating and challenging instructional environment of the heterogeneous class? Does the student feel that he 'belongs' (need for relationships with peers)? Does he still have the opportunity to learn from and with classmates (cooperative learning)?	
5. Do both the specialist and the teacher play a key role in creating, implementing, monitoring and evaluating the plan? Do they monitor the learning process of this student through formative and summative testing, goal-directed observations and interviews with the student? Do they interpret the student's progress (or lack thereof) as valuable feedback on the quality of the plan? Do they have stimulating and motivating feedback meetings with the student? Does the plan benefit form the specialist's and teacher's qualities?	
6. Are the teacher's support needs clear: what does he need to be willing and able to fulfil his key role? Are the support-sentences used to clarify his needs? Does the specialist ask about this and offer support? Does the teacher find the specialist's guidance as supportive of his daily work? Do the specialist's suggestions match with the teacher's ideas? Do they learn together and from one another? Do they inspire each other?	
7. Is the student actively involved in creating, implementing, monitoring and evaluating his plan? Does the plan have meaning for him? Does he support it? Is it his own plan in which his ideas are (also) incorporated? Is the plan adapted to what the student already knows, what he is already capable of and what he wants to accomplish? Is he involved in formulating the goals (need for autonomy)? Does the plan benefit from the student's positive characteristics (e.g. his talents and hobbies)? Are evaluative discussions with the student part of the plan? Does the plan increase the student's motivation? Does he gain more control over his development and the successes he achieves (need for competence)?	
8. Are the parents actively involved in creating, implementing, monitoring and evaluating the plan? Does the plan benefit from their expertise and knowledge? Are their ideas	

incorporated into the plan? Do they support the plan and understand its usefulness? Does the plan also focus on increasing their parental support for learning? For example, how can they contribute by practising at home and discussing with their child what has been learned? Are their positive characteristics (e.g. talents and interests) being utilised? Are their support needs clear: what do they need to support the plan at home? Does the specialist apply the support-sentences to clarify this?	
9. Have all of those involved agreed on when and how the plan is monitored and evaluated and what role everyone has in this process? Are the criteria for success clear? Are the three questions of effective feedback employed (Hattie, 2013): feed forward (what is our goal?), feedback (what have we already attained?), feed up (what do we still need to do to reach our goal?).	

Conclusions - What is good about the plan: - The plan can be improved by:

5. AFI in practice: an evaluation study

5.1 Introduction

This evaluation study was conducted in a Dutch centre for 'tailored education'[9] that supports 102 regular primary schools (children's ages ranging from four to twelve years old). The centre selected a sample of twenty schools, representative with regard to type and location of the school, quality of education, student population and parental SES. These schools participated in a three year pilot study implementing AFI to assess the needs of children with learning and/or behaviour problems (about 5% of the students). The study focused on the assessment process of these students in the third school year of the pilot (from September 2012 till July 2013).

The study was conducted and reported by an independent researcher (Algera, 2013) and aimed to answer the following main questions:

- Are the principles of AFI implemented as intended?
- Are the aims of AFI achieved, for example:
    - Does assessment offer a better understanding of the student and the support he needs?
    - Does assessment generate recommendations for teachers and parents?
    - Are teachers able to apply the recommendations in their classroom?

[9] Samenwerkingsverband Passend Onderwijs Unita, www.swvunita.nl

5.2 Method

The assessors were educational psychologists, school-psychologists and school-coaches[10] working for the centre. In the first two years of the pilot they were trained in the AFI-principles and participated in group-supervision sessions. Depending on the reason for referral (problems with reading, arithmetic, task behaviour, social-emotional and/or behaviour problems), the assessors were assigned to a particular student and the internal school counsellor, teacher(s) and parents involved. Three weeks after the assessment was completed, a digital questionnaire was mailed to the teachers, counsellors, parents and assessors involved in 198 cases. Questionnaires could only be sent to valid mail addresses; this explains why less than 198 questionnaires were mailed. The questionnaire contained 105 questions, mostly multiple choice and a few open-ended. The percentage of responders varied (see Table 1).

Table 1. Number of questionnaires returned by four types of respondents.

Respondents (involved in 198 cases)	Teachers (n=104)	School counsellors (n=87)	Parents (n=96)	Assessors (n=99)
Questionnaires returned with all questions answered	44	47	32*	75
Response rate	42%	54%	33%	76%

Note. * The questionnaire for parents included 4 questions to be answered by the child; 17 of the 32 parents (18%) discussed these questions with their child.

After collecting the data, in order to better understand some of the outcomes, assessment reports were analysed and a meeting with parents and assessors was held.

5.3 Results

5.3.1 Are the principles of AFI implemented as intended?

According to most teachers, counsellors, parents and assessors, the principles of AFI were implemented as prescribed (see Table 2).

Table 2. Respondents (%) who affirmed that principles were applied as intended.

The seven principles/responders	Teachers	Counsellors	Parents	Assessors
1. Goal-directed assessment				
- Assessment goals are	98	87	93	96
formulated	93	87	100	83

[10] In Dutch: ambulant begeleiders

- Assessment goals are evaluated				
2. Transactional perspective[11]	-	-	-	-
3. Students needs are discussed				
- Educational needs (in school)	98	98	84	99
- Parenting needs (at home)	-	-	87	85
4. Support needs are discussed				
- Teachers support needs	93	92	-	95
- Parents support needs	-	-	85	86
5. Positive aspects part of assessment				
- Students positive aspects	100	100	87	96
- Teachers positive aspects	73	83	48	72
- Parents positive aspects	73	83	50	55
6. Assessor worked in partnership				
- With teachers	86	85	-	89
- With counsellors	-	92	-	88
- With parents	93	94	94	88
- With students	30	23	29	37
Collaborative partnership with assessor	97	87	93	-
7. Assessment process evolved systematic and transparent	98	85	94	61

Goals concerning the assessment process were formulated and evaluated in most of the assessment processes. According to the majority of participants the *needs* of students, teachers and parents were also discussed during the process.
Students' *positive aspects* were covered, as were the positive aspects of their teachers. However the positive aspects of the parents were discussed in only about half of the cases, according to both parents (50%) and assessors (55%). In the meeting with parents and assessors, examples of positive aspects, e.g. relating to 'parental support of learning' (section 3.1), were given and it was explained that these statements were intended to be compliments. Parents, however, considered most of these examples as "self-evident, not that special that they required a compliment". Assessors realized that they seldom clearly labelled positive aspects of parents as an explicit compliment.

Most teachers, counsellors and parents reported a positive *collaborative partnership* with the assessor. Together they analysed the problematic situation and in co-operation they formulated specific goals and needs. This finding was confirmed by most of the assessors. Also, the majority (81%) of the parents value participating in the intake and recommendation stages. Almost all (96%) of the counsellors reported

[11] This principle was not included as it appeared difficult to operationalize this concept in a questionnaire.

that preparing the assessment process together with the teacher and parents was very efficient as some problems were already solved by then. Although it took time, this preparation resulted in a positive start and in assessment-questions shared by all. The assessors appreciated the collaborative partnerships (on a scale from 1 to 10) with high averages of 8,4 (counsellors), 8,3 (teachers) and 8,1 (parents). However, the assessors cooperated much less with the students involved, according to teachers, counsellors, parents and themselves. For example, children seldom participated as 'co-investigators'. Less than half of the children actually participated in the intake and recommendation stage. Of course, they participated in the investigation stage, providing the assessor with information, but also in this stage most assessors did not benefit from the experience, knowledge, opinions and solutions of the children themselves when analysing the situation and when formulating goals, educational needs and suggestions for intervention.

The questionnaire for parents included four questions to be answered by their child. Only half of the parents returned questionnaires with their child's answers. The children could show their feelings on the investigation stage by choosing a smiley: 77% of them enjoyed it, 23% was neutral and none of them was angry or sad due to this stage. After the assessment a few of them noticed a difference, for example: "my teacher now understands me better", "she helps me more than before" and "now I get more attention from the teacher". According to all parties involved, assessors should cooperate more actively with students, regardless of their age. After all, AFI is focused on students' wellbeing and should be in their benefit (section 3.6). Also children have the right to ask questions for assessment and to participate in the process of answering these questions.

Finally, teachers, counsellors and parents reported that the assessment process evolved *systematically and transparently, stage by stage*. The assessors themselves, however, are more critical about this principle, as they probably compare the process more explicitly with the prescribed five stages of AFI (section 4).

5.3.2 Are the aims of AFI achieved?

Does assessment offer a better understanding of the student and the support he needs? Does it offer teachers and parents recommendations on how to deal better with the child? Are teachers able to apply the recommendations in their classroom?

Table 3. Respondents (%) according the who the aims of AFI were achieved.

Assessment aims	Teachers	Counsellors	Parents	Assessor
Offers better understanding of student	90	85	65	95
Offers recommendations for teachers	70	60	-	80

Offers recommendations for parents	-	-	52	43
Teachers can apply recommendations in classroom	65	66	-	40

Assessment provided most teachers and counsellors with more *insight* into the child's situation than they had before the assessment. This was less so among parents. The assessor's insight in particular was boosted. This was expected, as the assessors barely knew the child prior to the assessment.
According to the majority of teachers, assessment provided recommendations, Only half of the parents - and even less assessors - indicate that assessment offered recommendations for parents. As not all students with problems in the school have problems at home as well, this was to be expected.

Teachers indicate that they feel more *capable in teaching the child* (on a scale from 1 to 10): the average score rises from 6.2 prior to the assessment to 7.4 after. For 80% of the teachers the *cost-benefit analysis* is balanced: the time and energy they invested in the assessment process delivered just as much or even more, such as time saving, more knowledge about the student and how to deal with him. A small minority of teachers (8%) are dissatisfied because the assessment offered no solution. They continued to experience problems with the student.

Assessment is supposed to strengthen teachers' strategies in the classroom (section 3.6). In this pilot study, two out of three teachers report that they could implement the recommendations in their classroom. They succeeded in adapting their approach to the child's specific educational needs. For them there is hardly a gap between assessment and intervention. However, for one third of the teachers the recommendations were not sufficiently workable. And 60% of the assessors agree with this. This is an important consideration for all professionals involved: the assessors (what can I do to make the recommendations more achievable?'), the counsellors (how do we translate recommendations into practice?) and teachers (how can I incorporate the desired approach in my way of teaching?).

The assessors indicate that they formulated goals for students (in 67% of the cases), teachers (in 71% of the cases) and parents (in 61% of the cases). As all students were referred because of learning and/or behaviour problems, it is surprising that the assessors did not formulate goals for all students. Analyses of the assessment reports afterwards, showed that all reports included recommendations, but one third of these recommendations were not consistently related to specific student-goals. In these cases it will be difficult to evaluate the impact of the recommendations later on. Most of the assessors evaluated the assessment process itself (Table 2), although only one third of them evaluated the effectiveness of the recommendations afterwards. This is a key limitation, given the importance of systematic feedback in the assessment-intervention cycle (section 3.1).

5.4 Discussion and conclusion

There are several limitations to this study. In the first place questionnaires could only be sent to valid mail addresses, decreasing the representativeness of the sample. The low response rates, especially for parents, decrease the representativeness as well. The amount of cases in which all five respondents completed their questionnaires was so small that it was impossible to compare the opinions of the teacher, counsellor, parents and assessor involved in the same case. Therefore only the averages per group of respondents were reported. Despite these shortcomings, this study gives an indication of the elements of AFI that clients and assessors appreciate (successes) and of the challenges assessors deal with in their daily practice (points of improvement).

Successes include:

- The five stages of AFI structured the assessment process from beginning (formulating relevant questions for assessment) to end (answers and recommendations) and offered all professionals involved a shared aim and language.
- Everyone who was important in teaching the student "sat at the table"; in co-operation they worked towards a shared goal: an optimal development for this child.
- The assessment provided school and parents with a perspective on how they can further collaborate and come to an agreement in the interest of the child.
- The counsellors, teachers and parents valued the partnership and communication with the assessors. As their questions led the assessment, the outcomes were meaningful to them.
- Many teachers and parents reemphasised their appreciation for the assessment model in the open questions. Although participation demands much of their time and commitment, the majority of teachers found the benefits definitely worth the effort. Not only did they better understand the student, they also knew how to adjust their teaching even more to their students' specific educational needs. A few parents wrote they were moved by the assessor's professional passion and their drive to achieve what was best for their child.

Points of improvement for the assessors include:

- Formulate SMARTI goals for all students and, if necessary, also for the instructional environment and parental support of learning.
- Focus more on translating the case formulation into the teacher's approach in the classroom. Involve the counsellor in this translation: how can he support the teacher in making his teaching strategies fit the student's needs?
- Explain the case formulation to parents in such a way that they understand it. Translate the information in such a way that it becomes meaningful to them. Also tell parents they can support their child's learning at school and address how well they are already doing this. Explicitly formulate positive elements of parenting as a compliment, so parents are motivated to continue do so. Also

discuss what more they could do to enhance school success and ask them what they need to support the learning of their child even more.

- Invite all participants to participate in the 'collective brainstorm' on the approach the child needs at school and at home. Use the support-sentences when clarifying the educational and parenting needs of the child. Ask parents and students to give suggestions to the teacher, but ensure the teacher stays in charge of his teaching.
- Actively include students in the assessment process as much as possible, regardless of their age. Ask them questions such as: what is going well at school and what could be better? Why do you think this is? How come? Which aims and solutions do you have yourselves? What suggestions do you have for your teacher and parents?

6. Conclusions on AFI in practice

Ecologically valid assessment supports answering questions and taking decisions. However, it neither dictates nor determines these, as those involved will, and must, bring their values and subjective judgements into the assessment process (Deno, 2005). Otherwise the process will not be meaningful, creating a gap between assessment and intervention. This implies that the school-psychologist is a scientist-practitioner, fulfilling the roles of both a 'scientist' and a 'coach'. During the intake and recommendation stages, he cooperates and consults with the teacher, counsellor, child and parents. If necessary, he investigates the child, the educational environment and parental support, using reliable and valid instruments on the one hand and coaching skills on the other. During the stages of strategy and integration/needs assessment, he reflects on his decision-making, applying recent scientific knowledge. As the stages are closely linked, the relationship between the initial clients' questions on the one hand and the case formulation and recommendations on the other hand is consistent. This decreases the gap between assessment and intervention.

Since 1996 there have been many training sessions and implementations, which have brought up both strengths and challenges.

The five stages support school-psychologists in their day-to-day work. Checklists guide them through the stages and provide continuous feedback. School-psychologists find the checklists helpful and therefore apply them before, during and after each stage. Thanks to a clear outline of the steps within the five stages, AFI offers a common frame of reference for all professionals involved, from educational and youth services. It promotes communication as they all speak the same language and strive for the same goals. Teachers and parents also appreciate this transparency, even more now that there are several publications on AFI, written with and for them (Pameijer e.a., 2009; 2012, Pameijer, 2012).

However, several problems and challenges have arisen. It appears difficult to apply the guideline of 'assessing only what is strictly necessary'. The shift from 'knowing in order to diagnose or label' to 'knowing in order to recommend' is not always easy. Although applying the 'if-then-rationale' provides support, some school-psychologists still feel that they are labelling more children than strictly necessary for finding an effective intervention. They often do so under pressure from the school, parents or student. Setting boundaries in consultations with clients can be challenging, it may even endanger a constructive partnership. Consultation with clients occurs twice during the assessment process: when identifying the questions in the first stage (intake) and when deciding on interventions during the last stage (recommendations). Things usually run smoothly as long as there is sufficient consensus and all involved support the choices made. But sometimes, if a client wants something that the school-psychologist is not willing or able to offer, consultation can be problematic. Such as when the parties involved have conflicting requests or needs. For example, the school may not want the instructional environment to be investigated, while the school-psychologist finds this necessary for tailoring the recommendations to the specific teaching strategies of a teacher in a particular classroom. Or parents may wish to receive a confirmation that their child is dyslexic because of the extra facilities in school, although the school-psychologist finds insufficient evidence to support this request.

An AFI-report contains only relevant information and focuses on answering the questions of the clients and the school-psychologist. Although such a report is written according to a set format, it's content is not standard. Instead, it targets the specific situation and is client-focused, using terms that they understand and that are close to their personal theory and are thus meaningful to them. It appears to be quite an undertaking to write reports that focus mainly on questions and answers. Also, translating jargon into common language can be difficult and time-consuming. In addition, school-psychologists may find it difficult to describe tactfully the quality of the teacher's strategies and the parental support or the extent to which their approaches are tuned to the child's needs.

Even though meta-analyses (section 4.4) offer information on what works, there still is a lack of applicable evidence-based knowledge and matching reliable and ecologically valid instruments. In identifying and addressing specific educational needs, there may be a poor match between science, theory, assessment tools and intervention. Even though various sources of information are available, these may lack clinical utility and school-psychologists may have difficulty translating the information into their everyday practice.

Working according to this model is time-consuming as every case is unique and requires a tailored approach. Compared to just administering a standard battery of tests to the student, AFI takes more time to consult with the clients (stages of intake and recommendations), reflect on the assessment process (strategy stage), assess not

only the student but also the educational context and parental support (investigation stage), formulate a case formulation, goals and needs (stage of integration/needs assessment), discuss the outcomes with clients (stage of recommendations) and write a personalised report. This is rarely compensated by the time saved by conducting fewer tests.

Questions for the future

High quality assessment for intervention aims at designing and implementing evidence-based teaching strategies and at monitoring and evaluating the impact of these strategies on learning (Tymms & Elliott, 2006). Teaching students with special educational needs requires on going assessment, according to a cycle of implementing interventions and assessing the effects in order to adjust (if needed) the case formulation, goals and recommendations. The presented AFI model needs further development in this aspect, urging that not only the student's needs but also those of his teachers ands parents (if necessary) be continuously assessed in a cycle with systematic feedback loops in which all involved cooperate for the benefit of the child.

Even though the model for AFI contains effective mechanisms (section 2, #6), it is necessary to investigate whether it actually leads to more ecologically valid case formulations and more effective interventions than 'assessment as usual'. Ultimately, this will be the test for AFI. In the meantime, practical evidence is likely to show that this model not only bridges the gap between assessment and intervention, but also makes this process more meaningful to teachers, parents and students. As the model invests in cooperation, avoiding conflicts between assessors and clients, it reduces the chance that schools and parents seek a second opinion (shopping) or implement an ineffective intervention. Thus AFI is in the best interest of the child, whereas his teachers and parents benefit from the outcomes as well.

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