

# Assessment and intervention: Bridging the gap with a practice-based model

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**Aim:** This article describes a practice-based assessment model – Assessment for Intervention (AFI) – that aims to bridge the gap between assessment and intervention. According to this model the school psychologist is a scientist-practitioner: he formulates and tests hypotheses in close co-operation with teachers, parents and the student involved.

**Method:** The seven principles (why?) and five stages (how?) of the AFI-model are presented.

**Findings:** The first findings of an evaluation study are reported. Despite several limitations (e.g. low response rate), this study gives an indication of the elements of AFI that teachers, counsellors, parents and assessors find important and of the challenges assessors have to deal with in their daily practice. It also provides points of improvement for the AFI-model. Finally, it shows that most assessors work according to the seven principles and five stages.

**Conclusion:** In practice the model bridges the gap between assessment and intervention and makes the assessment process more meaningful to teachers, parents and students. It is concluded that it is necessary to investigate whether the AFI-model actually leads to more ecologically valid case formulations and more effective interventions than ‘assessment as usual’.

**Keywords:** principles and stages of assessment for intervention; school psychologist; scientist-practitioner; evaluation study; strengths and challenges AFI-model.

## 1. Introduction

**A**SSESSMENT is essential for decisions on diagnosis and intervention (Deno, 2005). 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 wellbeing 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). This paper presents an assessment model for addressing children’s special educational needs: Assessment for Intervention (AFI). The aim of this model is to provide recommendations that are both scientifically sound and useful for a particular child, teacher, or parent. The principles and stages of the model will be described, followed by

the first outcomes of an evaluation study. Successes and challenges relating to the model are discussed as well.

In practice there often is a gap between the diagnostic information and the recommendations. The aim of the Assessment For Intervention (AFI) model is to bridge this gap. The AFI-model, originally developed in the Netherlands (Pameijer & Van Beukering, 1997, 2004, 2015; Pameijer & Pijl, 2006) describes a decision-making process in which a school psychologist systematically proceeds through a series of stages, starting by analysing the questions of the teacher, school counsellor (an internal educational supervisor or student educational needs coordinator), parents 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 it leads to an understanding of the problematic situation (diagnosis) and provides recommendations on how to alleviate or solve this situation (intervention).

Generally, assessment refers to two main topics (Hunsley & Mash, 2008): the assessment process (i.e. generating and testing hypotheses, integration of information and decision making) and assessment methods (i.e. tests, questionnaires, interviews and observations). The practice-based AFI-model focuses mainly on the process and elaborates on the Plan-Do-Review (PDR) cycle integrating recent developments in assessment into this cycle. AFI differs from other assessment models as it is scientifically sound and practice-based, offering guidelines on how to combine the knowledge of the assessor with the knowledge of the teachers, parents and student involved in such a way that the outcomes are in the best interest of the child. The model covers all topics that are considered relevant in a recent international review-study on the assessment of students with special needs, such as the scientist-practitioner attitude of the school psychologist and the need to collaborate with teachers, students and parents during the entire assessment process (Struyf et al., 2015).

### **Recent developments incorporated in the AFI-model**

The concept of assessment has changed considerably over the last 10 years, focusing more on its contribution to teacher instruction and student learning (Lebeer & Partanen, 2011). Functional assessment, or Assessment for Improvement (Hargreaves & Fullan, 2012), results in an improvement of the instructional environment and is in the best interest of the student. Nowadays, the needs of students seem more relevant for intervention than their disorders (Frances, 2013). Instead of looking for labels such as ADHD or dyscalculia, school psychologists focus on the abilities of students and what they need to take the next step in their development. Assessment also focuses more on

solutions and on the empowerment of teachers, parents and students (Cauffman & Van Dijk, 2014). Furthermore, a problematic situation appears to improve sooner when those involved are part of the assessment process, right from the beginning. During this process, clients' awareness and understanding of the situation and their motivation for change increase. This 'therapeutic value' of assessment makes it more functional (Haydel et al., 2011). According to the International Convention on the Rights of the Child (2013, article 12) all children have the right to express their opinion. Regardless of their age, children should therefore participate in the assessment. Last but not least, the assessment process must be as evidence-based as possible, supporting 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 (Hunsley & Mash, 2008). The school psychologist utilises scientific knowledge on what works (e.g. Marzano, 2007; Hattie, 2009; Mitchell, 2014). Moreover, he applies successful practical experiences, professional standards and (ethical) values. As a scientist-practitioner, he combines evidence from various sources, working research-based as well as practice-, client- and value-based (Van Yperen, 2010).

The AFI-model implies more than the PDR-cycle as it also focuses on the content of the steps within the cycle, the communication skills of the school psychologist and the different roles of the teacher, parent and child within this cycle. The assessment process is tailored to their specific context, thereby decreasing the gap between assessment and intervention. As a prescriptive model, AFI outlines an optimal and scientifically sound process. School psychologists can therefore use the model as a frame of reference for reflection and quality improvement by asking themselves the following three questions: What are my targets for assessment for intervention (goals)?; Which elements of AFI am I already successfully implementing?; Where is room for improvement?

## 2. The seven principles of AFI

In their AFI model Pameijer and Van Beukering have translated research on the quality of assessment and professional standards for 'good assessment' into seven coherent principles: (1) AFI is goal-directed, aiming at recommendations that are both meaningful and useful for clients and beneficial to the child; (2) AFI applies a transactional perspective on development and therefore not only focuses on child factors, but also on teachers' strategies and parental support; (3) AFI 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, the model also focuses on their needs: what do they need to support this child's learning?; (5) AFI not only focuses on risk factors, but also on the protective factors of the child, school and parents; (6) the school psychologist works in a collaborative partnership with the teacher, child and parents; (7) finally, the AFI-model follows a systematic and transparent stage-like process. These seven principles describe the theoretical context and rationale (what and why?) that underlie the five stages of the AFI-model (how and when?).

### Goal-directed and functional assessment

The information gathered should be confined to what is strictly necessary for addressing the problem (Salvia & Ysseldyke, 2004). The school psychologist aims at 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 both knowledge of effective interventions and strategies, and consultation with clients: how does a certain strategy fit into their daily work?; what do they already do according to this strategy and what can be done better? From this perspective, assessment can be seen as a change-oriented cycle of investigation, case formulation, intervention and evaluation. The situation becomes increasingly clearer, while assess-

ment and intervention enrich each other. As AFI aims at improving a problematic situation, it focuses on variables that can be translated into intervention-goals, such as a student's feeling of competence and executive functions, the quality of the instructional environment and teachers' strategies and the parental support of learning.

### Transactional perspective

Children develop through a continuous interaction with their instructional and home environments (contextual approach). 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, resulting in changes both in the child and the environment (Braet et al., 2014). A problematic situation is related to risk factors. The more risk factors are at play, the higher the chance of a problematic development (Vanderbilt-Adriance & Shaw, 2008). 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 greater risk of behavioural problems (Orobio de Castro, 2014). Protective factors weaken the impact of risk factors and are relevant as well. AFI therefore questions: which favourable interactions can be extended and which counter-productive 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? By discussing these questions during the assessment process, clients become more aware of their impact on the situation. This realisation may increase their motivation to change certain behaviour.

### **Special needs of the child**

The AFI-model focuses on the student's needs related to education and parenting. It shifts the attention from 'what the student has or is' (such as 'she has dyslexia' or 'he is oppositional') to 'what the student needs'. The first question is: which SMARTI (with the I of inspiring) goals are we pursuing? The subsequent question is: which approach (from teacher, parent) does this student need to reach these goals? These questions change the mind-set from problem-oriented thinking to solution-focused acting. In cooperation with the child, teacher, counsellor and parents, the school psychologist discusses educational needs: what does this student need to achieve a certain goal? For example: a specific type of instruction, assignment, learning environment, feedback, teaching strategy or fellow students. This way, the expertise of all involved is utilised to discover what the ideal approach for this student might be. The school psychologist then 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 would be possible to offer these extras. The additional needs are then made attainable by asking the teacher and parents what they themselves need to support their student or child.

### **Teachers matter: What do they need to support the student?**

Teachers matter, especially for vulnerable students (Marzano, 2007). By proactively supporting students, competent teachers are 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 (Verschueren & Koomen, 2016). A warm and close relationship offers a student emotional support and security, which has a positive impact on his relationships with peers and learning behaviour in the classroom. On the other hand, a hostile or dependent teacher-student-relationship is a risk factor for students with antisocial

or withdrawn behaviour as it encourages this problem behaviour. By investing in a positive teacher-student-relationship, one can increase academic achievement and wellbeing at school (Hattie, 2009). This is why the AFI-model not only focuses 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. In cooperation with the teacher, the school psychologist therefore might formulate hypotheses concerning the impact of certain teaching strategies on the learning of the child. Once confirmed, they discuss what the teacher needs to adjust more to the needs of the student.

### **Protective factors and strengths**

Every student, no matter how severe the problems may be, displays positive behaviours and qualities, such as talents and interests, which can compensate for shortcomings in other areas (Carr, 2014). Studies have identified child protective factors, 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 and a family network can support teachers and 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 (Verschueren & Koomen, 2016). A warm and supportive relationship with responsive parents, in which the child experiences security, emotional involvement and encouragement, has also been found as a protective factor (Masten & Tellegen, 2012). While taking the problems and concerns of the clients seriously, the AFI-model also focuses on the chances and strengths. The school psychologist includes these positive aspects in his assessment report and utilises them for his recommendations. He is, for example, interested in the positive exceptions (when is

the student able to display the desired behaviour?) and the successful teaching approach (what does the teacher do in this situation?). A balanced overview of risk factors, protective factors and the interaction between these factors produces an ecologically valid case formulation. Moreover, it is often easier to boost positive factors than to reduce risk factors (Carr, 2014).

### **Collaborative partnerships**

School psychologists cooperate with students, teachers, counsellors and parents when searching for explanations and formulating goals and needs. This is 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 hands-on experts through experience, they have good insight into the possibilities for change. As 'co-assessors' clients participate in the assessment process, they play a key role in translating diagnostic data into attainable interventions that suit their context.

The insights and solutions suggested by the child, teacher and parents are just as valuable as those of the school psychologist. The principle, therefore, is to talk *with* the student, teacher and parents as much as possible rather than *about* or *to* them. AFI is customised to this student, this teacher and these parents: what do they need to reach a particular goal? The school psychologist translates his scientific knowledge into the clients' personal framework, in order to make the information meaningful and useful to them. Only then, they will understand the case formulation and recommendations. That's why from the outset, the AFI-model aims at openness in the communication with clients (transparency).

### **A systematic and transparent assessment process**

As said before, assessment should take place in a systematic, objective and consistent way and be transparent for other school psychologists and clients (Carr, 2014). Following an

assessment model increases the likelihood of consistent and objective decision-making (Kazdin, 2005). The AFI-model is an example of an assessment model, based on the empirical cycle of scientific thinking (De Bruyn et al., 2003). AFI includes five stages and each stage has its own guidelines, supporting clinical decision-making. These guidelines are formulated to remind a school psychologist of the principles of AFI and protect him against common pitfalls in decision-making, such as tunnel-vision, confirmation-bias and over-confidence (Witteman et al., 2014).

### **3. The five stages of the AFI-model**

The model consists of five stages closely linked to each other in a cyclical process with systematic feedback loops. The stages can be applied by a single school psychologist or a multi-disciplinary team. Each stage consists of coherent steps that support the decision-making process and guard the seven principles of AFI. In practice the stages may overlap, but we discuss them separately in order to realise an explicit and clear assessment process.

#### **Stage 1: Intake, how can we collaborate?**

The first goal is to collect information so that the school psychologist can determine a strategy for a particular case. Another key objective is to achieve compatibility with the school, student and parents, in order to create a constructive partnership. In the first meeting the questions, aims, expectations and requests of those involved are discussed: what do they intend to accomplish (or avoid), why and how? How do they explain the situation? Which case formulation and recommendation are most likely to help them? These questions shed light on their frame of reference and support the school psychologist in tailoring the process to their personal theory and needs. Appointments for cooperation are made, e.g. who collects which information?; when will one meet again to discuss the findings?

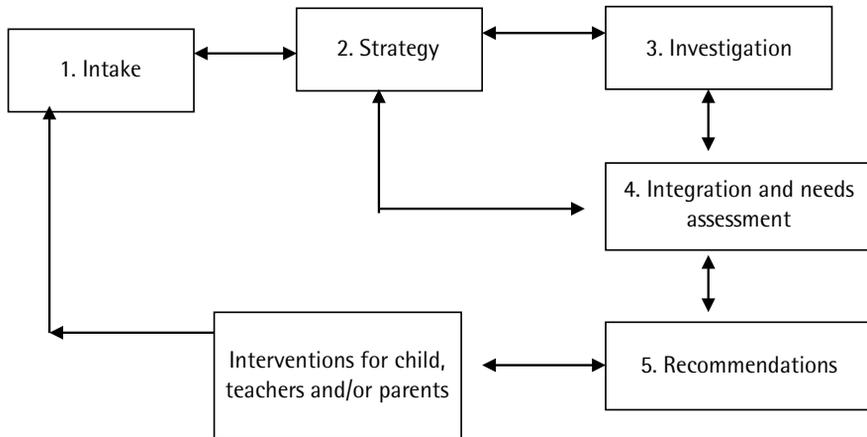


Figure 1: Five stages in the assessment cycle.

**Stage 2: Strategy, how to proceed in this particular case?**

The input of this stage is the information collected in the intake and the output is the strategy that best fits a specific situation. First, the relevant information is organised in four sections: student, instructional environment, parental support of learning and relevant history. Then the school psychologist decides what more needs to be known to answer the clients' and his questions. Is the investigation stage (Stage 3) necessary? This is the case when more information is needed in order to formulate recommendations. Or can he already move on to stage 4 (Integration stage)? The bottom line is: no investigation will be conducted unless its outcomes will influence the choice of the intervention. Each question is justified with the 'if-then-rationale': *if we know ..., then we can recommend...* However, *if we don't know..., we then cannot recommend ...* This way, collecting data is goal-directed and directly linked to intervention. If stage 3 is required, alternate hypotheses from a transactional frame of reference are formulated, relevant hypotheses are selected, based on their impact on the choice of an intervention and these hypotheses are translated into questions for investigation.

**Stage 3: Investigation, answering the selected questions**

This stage involves a goal-directed rather than a routine collection of data. The selected hypotheses determine the information to be gathered. The content of this stage thus varies in each case, ranging from using one instrument to several different tools. 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 available formative and summative data can be analysed. The context/class may also be investigated to determine if the teacher or other children may be contributing to the problem. Data gathered in the context may have a higher ecological validity than data gathered in an office outside the classroom. Moreover, contextual data can be translated into personalised recommendations, tailored to the teaching strategies of the teacher.

**Investigating the potential for change**

Exploring the learning ability (zone of proximal development) of students and teachers can contribute to more feasible recommendations (Koomen & Pam-eijer, 2016). A hypothesis may focus on

their changeability. By manipulating a particular variable, one tries to find out whether an expected positive change occurs. With an experiment insight is gained into both the child's changeability and the teacher's potential for change. The school psychologist, together with the teacher and student as co-assessors, registers what occurs prior (*antecedents*) to the student's *behaviour* and what occurs thereafter (*consequences*), thereby identifying provoking and reinforcing factors. Such a functional analysis can be translated into recommendations that fit in the classroom (Vargas, 2013). For example, one might suspect that a child's disruptive behaviour (making funny noises) is stimulated by classmates' laughter and the teacher's correction (consequences). The hypothesis would state 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. The school psychologist can also explore the learning potential of the student in a one-on-one situation, e.g. through dynamic testing (Bosma, 2011), investigating which 'hints' are effective. However, translating the hints that work in the one-on-one situation to the teacher's strategies in the classroom may be difficult. This is why additionally observing the teacher's approach may be necessary: what does he already do that corresponds with the effective hints and how could he further improve his approach?

#### **Stage 4: Integration, goals and needs**

As this stage supports the bridge to intervention, it is referred to as 'pre-treatment-assessment' (Haynes et al., 2011). The information is integrated into a specific case formulation: how can the situation be understood? This summary is translated into goals for the student, teaching strategies and parental

support, educational needs of the student and support needs of his teacher and/or parents.

In a transactional case formulation, factors relating to the student, instructional context and home environment are included as risk factors if they contribute to the problem, while factors protecting the child from the impact of 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 out *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 requires knowledge of which interventions are desirable to them and which arguments support and oppose these options. As there is no 'one size fits all' (Deno, 2005, p.24), recommendations need to be personalised in the next stage.

As several interventions focus on the same target, choices have to be made. The AFI-model prefers interventions that have been proven to be effective. The school psychologist can benefit from several meta-analyses when deciding in this.

#### ***Effective recommendations: what works in general?***

Hattie (2009) analysed 50.000 studies on successful learning and excellent teachers, generating interventions<sup>1</sup> that are generally effective, ineffective or counter-productive (e.g. repeating a class, -0.16). Examples of effective interventions are: self-reported learning in which the student gives himself a grade in advance,

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<sup>1</sup> Degree of impact on performance: above 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.

predicted on past performances with an emphasis on high expectations (1.44), direct informative and positive reinforcing feedback during learning, explicitly linked to goals (1.13), direct instruction models and strong classroom management (1.00), instruction to a small heterogeneous group (0.88), predictable teacher behaviour, high expectations and exercises that are tuned to students' needs (0.75), positive student-teacher-relationships (0.72), parents that guide learning in school (0.55) and parental support of learning (0.49). Whereas Hattie focuses on interventions that are effective for all students, Mitchell (2014) describes 27 evidence-based teaching strategies that 'really work' for students with special needs. Interventions with an impact above 0.70 include cooperative learning, peer tutoring, supporting parents to be involved in the education of their child, functional behaviour analysis and formative assessment during learning.

#### **Stage 5: Recommendations, appointments and feedback**

In this stage the clients are informed about the outcomes of the assessment. The aims of this last stage include answering the clients' 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. All parties involved discuss the outcomes, question each other and listen. Hopefully, the clients approve of the case formulation and choose one of the outlined recommendations. The result is a tailored intervention, with sufficient support to be successfully implemented. The information exchange is tailored in order to answer the questions of this particular 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. An impor-

tant aim is to arrive at a feasible intervention, supported by all parties. The school psychologist therefore asks if those involved are willing and able to 'start tomorrow'. If the answer is affirmative, the child, teacher and parent are encouraged to change their behaviour. If this is not yet the case, the assessment process continues with further consultation.

Appointments to monitor and evaluate the intervention are made: who is doing what, why, when and how? This information is important feedback for both the case formulation and the recommendations. In the end, the assessment process is evaluated by both the school psychologist and the clients: are the clients' questions answered?; was the assessment functional?; has their insight into the problematic situation increased?; do the child, teacher, counsellor and parents have more perspective? In the end, the school psychologist asks all clients, also the child, for feedback: what did he do professionally well (compliments)? And what could he do better in a similar case in the future (suggestions)?

#### **4. The AFI-model in practice: an evaluation study**

The AFI-model has been applied for 20 years in regular and special educational settings, in primary and secondary schools, mostly in the Netherlands and Flanders. After it was developed in 1997, it has been evaluated and improved in 2004 and 2015 (Pameijer & Van Beukering, 1997, 2004, 2015). Many adaptations have been made, eliminating aspects that were unsuccessful and expanding upon those that have shown to be effective. By now, professional organisations in the Netherlands and Flanders promote the model as a standard for assessment practice (NIP/NVO, 2013; Verschuieren & Koomen, 2016). 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).

However, AFI has not yet been evaluated systematically. Therefore an evaluation study was conducted in a Dutch centre for

inclusive education (www.swvunita.nl). This centre supports 102 regular primary schools (children's ages ranging from 4 to 12 years old). The centre selected a sample of twenty schools, representative with regard to the type and location of the school, quality of education, student population and parental SES. These schools participated in a three year pilot, implementing AFI to assess the needs of children with learning and/or behaviour problems (about 5 per cent 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 focused on the following questions:

- are the principles of AFI implemented as intended?
- are the aims of AFI achieved, such as:
  - 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?

**Method**

The assessors were school psychologists and external school-coaches, working for the centre. In the first two years of the pilot they

were trained in AFI. 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. The questionnaire contained 105 questions, mostly multiple choice and a few open-ended. The percentage of responders varied (see Table 1). Questionnaires could only be sent to valid mail addresses; this explains why less than 198 questionnaires were mailed. After collecting the data, in order to better understand some of the outcomes, assessment reports were analysed and a meeting with parents was held.

**Results**

*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).

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

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

Respondents involved in 198 cases	Teachers (N=104)	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 parents' questionnaire included four questions to be answered by the child; 17 of the 32 parents (18 per cent) discussed these questions with their child.

Table 2: Number of respondents (%) who affirmed that the principle was applied.

The seven principles	Teacher	Counsellor	Parent	Assessor
1. Goal-directed assessment: - assessment goals were formulated	98	87	93	96
- assessment goals were evaluated	93	87	100	83
2. Transactional perspective <sup>*</sup>	-	-	-	-
3. Students needs were discussed - educational needs (in school)	98	98	84	99
- parenting needs (at home)	-	-	87	85
4. Support needs were discussed - teachers support needs	93	92	-	95
- parents support needs	-	-	85	86
5. Positive aspects were 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
There was a collaborative partnership with assessor	97	87	93	-
7. Assessment process evolved systematically and transparently	98	85	94	61

<sup>\*</sup> This principle was not included as it appeared difficult to operationalise this concept in a questionnaire.

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 per cent) and assessors (55 per cent). In the meeting with parents afterwards, examples of positive aspects, e.g. relating to 'parental support of learning', were given and it was explained that

these statements were intended to be compliments. Parents, however, considered most of these examples as ‘self-evident and not that special that they required a 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 per cent) of the parents valued participating in the intake and recommendation stages. 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-assessors. 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 formulating goals, educational needs and suggestions for intervention.

The questionnaire for parents included

four questions to be answered by their child. The children could show their feelings on the investigation stage by choosing a smiley: 77 per cent of them enjoyed it, 23 per cent was neutral and none of them was angry or sad due to this stage. After the assessment a few of the students 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. 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, were more critical about this principle, as they probably compare the process more explicitly with the prescribed five stages of AFI.

**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: Number of respondents (%) according to whom the aims of AFI were achieved.**

Assessment aims	Teachers	Counsellors	Parents	Assessor
Assessment offered better understanding of student	90	85	65	95
Assessment offered recommendations for teachers	70	60	-	80
Assessment offered recommendations for parents	-	-	52	43
Teachers could apply the recommendations in their 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 significantly rises from 6.2 prior to the assessment to 7.4 after. For 80 per cent 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 skills how to deal with him. A small minority of teachers (8 per cent) are dissatisfied because the assessment offered no solution. They continued to experience problems with the student.

AFI is supposed to strengthen teachers' strategies in the classroom. 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 per cent 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 the 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 per cent of the

cases), teachers (in 71 per cent of the cases) and parents (in 61 per cent 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 feedback in the assessment-intervention cycle.

#### **Discussion of evaluation study**

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 stages of AFI structured the assessment process from the beginning (relevant questions for assessment) to the 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 cooperation 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 best 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 most of them.
- Many teachers and parents reemphasised their appreciation for the AFI-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 more to their student's specific educational needs. A few parents wrote they were moved by the assessors' professional passion and 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 attuning his teaching strategies in order to fit the student's needs better?
- 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 educational 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?

## 5. Conclusions

Assessment models support the school psychologist in the process of answering questions and making decisions. However, an assessment model may neither dictate nor determine the outcomes of assessment, as those involved will bring their own values and subjective judgements into the assessment process (Deno, 2005). The participation of teachers, counsellors, parents and students makes the process meaningful and creates a bridge between assessment and intervention. In the AFI-model the school psychologist therefore is a scientist-practitioner, fulfilling the roles of both scientist (formulating and testing hypothesis) and coach (supporting his clients). During the intake stage and recommendation stage, he cooperates and consults with those involved, applying effective coaching skills. If necessary, he investigates the child, the educational environment or 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 to each other, the relationship between the initial clients' questions on the one hand and the case formulation and recommendations on the other hand is consistent. In this sense the AFI-model is more extended and related to the practice of school psychologists than the PDR-cycle.

Since 1996, when the model was formu-

lated, there have been many training sessions and implementations, which have shown the model's strengths and challenges.

### **Strengths**

The five stages support school psychologists in their day-to-day assessment. Checklists guide them through the stages and provide continuous feedback. School psychologists find the checklists helpful and apply them before, during or after each stage. Thanks to a clear outline of the steps within the stages, the model offers a common frame of reference for all professionals involved. It promotes their communication as they all speak the same language and strive for the same goals. Professionals, teachers and parents understand and appreciate the AFI-model, even more since there are several publications on the model, written especially for school counsellors (Pameijer & Van Beukering, 2006), mental health professionals (Pameijer & Draaisma, 2011), teachers in primary and secondary schools (Pameijer et al., 2009; 2012) and parents (Pameijer, 2012). Also the systematic feedback that clients give during each assessment process appears to be valuable in improving assessment.

### **Challenges**

During two decades of implementing the AFI-model, several problems and challenges have arisen. For example, 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. They often do so under pressure from the school, parents or student. Setting boundaries in consultations with clients can be challenging and it may 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 in 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, collaboration becomes 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 teaching strategies of a specific 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 focuses on the questions of the teacher, counsellor, parents and school psychologist. Children may receive an 'assessment letter' in which their concerns and questions are addressed. Although such a report or letter is written according to a present format, its content is not standard. Instead, it targets the specific situation and is client-focused, using terms 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 a tailored report that focuses mainly on questions. Also, translating jargon into common language can be difficult. In addition, school psychologists may find it difficult to describe tactfully the quality of the teacher's strategies and the parental support and the extent to which their approaches are tuned to the child's specific needs.

Even though meta-analyses, such as Hattie's (2009), 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 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 (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 extra time 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 the intervention 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 and 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 contains effective mechanisms, 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. 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 with clients, it reduces the chance that schools and parents seek a second opinion or implement an ineffective intervention. Thus AFI is in the best interests of the child, whereas teachers and parents may benefit from the outcomes as well.

Compared to other assessment models, AFI focuses more on the entire decision making process from the referral to the evaluation of the assessment, supporting the school psychologist in his role as a scientist-practitioner: what decisions need to be made, why and how? AFI offers practical guidelines on how to collect and integrate relevant information in close co-operation with teachers, parents and students and how to enhance their motivation to participate in the assessment process and implement the recommendations.

Illustrations of the AFI-model in practice can be found on the website of the International School Psychology Association (ISPA, [www.ispa2016.org/conference](http://www.ispa2016.org/conference) 2016).

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