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A Teacher Development Program about Formative Assessment for Primary Education Teachers

"I THINK I HAVE ACQUIRED THE BASIC KNOWLEDGE ABOUT FORMATIVE ASSESSMENT BY PARTICIPATING IN THIS TEACHER DEVELOPMENT PROGRAM" - PRIMARY EDUCATION TEACHER

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Summary

In the past few years, Assessment for Learning (AfL) has become a common theme at educational conferences, a standard offering in test-company catalogues and a subject of government tenders. AfL is defined as: “the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning process, where they need to go and how best to get there”. The aim of this study was to redesign an existing Teacher Development Program (TDP) for secondary education about AfL, developed by the University of Twente, for primary education teachers. The two research questions that have been answered during this study using Educational Design Research are:

1. “What does a TDP about AfL for primary education look like?”
2. “How do primary education teachers and consultants experience the TDP?”

The answer to the first research question is that the whole TDP consists of six sessions, from which the first session is an introduction to AfL and the other five sessions each represent one of the five strategies from Wiliam and Thompson. The TDP is specific for primary education, because the five strategies can be applied in all subjects and the activities that are provided for use in classroom, are adapted to the age of primary education students. This study led to a completely developed introduction session, which was formatively evaluated based on a try-out.

The answer to the second research question about how teachers and consultants experienced the TDP, is that teachers and consultants were positive about the TDP. Teachers, for example, especially liked the varied working methods that were used in the TDP. They also liked the combination of videos and information. Consultants liked the varied working methods and the clear assignments.

A point of improvement, however, was that the TDP did not sufficiently fit teachers’ prior knowledge and therefore teachers and consultants advised to research prior knowledge beforehand and go more into depth during the TDP. These improvements were used to adapt the TDP. In future research, the other sessions of the TDP could be developed and could also be tried out. Also, it could

be researched whether students see a difference in teaching practice after teachers participated in the TDP.

Introduction

This thesis focuses on AfL. The starting point was a TDP about AfL. Because primary education teachers were interested, next to secondary education teachers, in an AfL TDP, which Expertis wanted to offer, the aim of this research was to redesign the AfL TDP for secondary education in order to make it suitable for primary education teachers. The research questions of this study were: “What does a TDP about AfL for primary education look like?” and “How do primary education teachers and consultants experience the TDP?”

The TDP was developed by first conducting a needs assessment among primary education teachers and consultants to determine their needs and wishes regarding the TDP. Then, the first session of the TDP was redesigned, based on the results of the needs assessment, and tried out. Afterwards, a focus group took place to evaluate the TDP with the primary education teachers and the consultants.

This study starts with the problem statement, in which the key concepts of this research are defined and the reason for this study is explained. The study continues with a description of the analysis and exploration phase in which the theoretical framework is described. Subsequently, the research questions are described and the design of the study is explained, in which the method for answering the first research question is described. Subsequently, the needs analysis results are given. In the section about the design and construction phase, the systematic approach to arrive at the design of the TDP is explained. Thereafter, in the evaluation and reflection phase, the method of the second research question and results of the focus group are described. Then, recommendations for the TDP are formulated. In the final part of the report, the conclusions, recommendations and discussion are presented.

Problem statement

Assessment entails using processes and instruments to gather evidence about students’ learning, such as observations, paper and pencil tests or projects (Van der Kleij, Vermeulen, Schildkamp & Eggen, 2015). In the educational context, there is a distinction between the purposes of assessment, which can be formative or summative (Black & Wiliam, 2003). According to Hondrich, Hertel, Adl-Amini and Klieme (2016), formative assessment means that evidence about students’ understanding is elicited, interpreted and used in instruction aimed to enhance students’ learning. Summative assessments are used to determine what students know and not know at a particular point in time and are generally used as part of the grading process (Garrison & Ehringhaus, 2007).

One promising form of formative assessment is AfL, which is defined as: “the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there” (Stiggins, 2005, p.10). AfL intends day-to-day progress in learning. By teaching students how to improve the quality of their work and teaching them to reflect on their own work, AfL helps them to bridge the gap between where learners are in their learning and where they need to go (Stiggins, 2005).

In the past few years, AfL has become a common theme at educational conferences, a standard offering in test-company catalogues and a subject of government tenders (Bennett, 2011). Research indicates that AfL can have positive results on learning outcomes (Van den Berg, Bosker & Suhre, 2018; Ozan & Kincal, 2018; Black & Wiliam, 1998; Heitink, Van der Kleij, Veldkamp, Schildkamp & Kippers, 2016). According to Heitink, Van der Kleij, Veldkamp, Schildkamp and Kippers (2016), however, implementation has proven to be challenging for teachers. According to Popham (2011), most teachers do not understand concepts and procedures that are likely to influence educational decisions, which can make a considerable difference to students’ learning gain. AfL is a complex skill for primary education teachers (Kippers, Wolterinck Kippers, Schildkamp & Poortman, 2016). Few teachers are prepared to face the challenges of classroom assessment because they have not been given the opportunity to learn to do so (Stiggins, 2002).

At the University of Twente, an AfL TDP has been developed for secondary education teachers. This TDP for secondary education teachers was piloted and is currently studied at a larger scale, in terms of effects on teacher and student learning. However, formative assessment is also an upcoming theme in primary schools, because of its potential to change teaching and learning with the aim to increase student achievement (Earl, 2012).

The aim of this study was to redesign the TDP for secondary education teachers about AfL for primary education teachers. Primary education differs from secondary education; an example is that primary education pupils have the same teacher, every day and the whole day for a full school year, while secondary education students have different teachers, usually every hour. By analysing the needs and wishes, the extent to which the parties involved view the problem as one worth addressing was determined (McKenney & Reeves, 2012).

Educational design research

This study was executed by means of educational design research. McKenney and Reeves (2012) developed a model for conducting this type of research. They distinguish four phases: the analysis and exploration phase, the design and construction phase, the implementation and diffusion phase, and the evaluation and reflection phase (Figure 1). During the analysis and exploration phase, a literature review was conducted to define AfL and its key concepts. Furthermore, the participants, instrumentation, procedure and data analysis of this research are described. Next to that, a needs

assessment was conducted to research the needs and wishes of primary education teachers and consultants for a TDP about AfL by an interview. Insights from the literature review and data collection with the target group of primary teachers were used to adapt the current training about AfL for secondary education teachers. Based on this information, the design guidelines for the TDP were developed during the design and instruction phase. Thereafter, the design was implemented and primary education teachers and consultants attended one session of the TDP about AfL. In the evaluation and reflection phase, a focus group with primary education teachers and consultants was done to evaluate the TDP. Based on these opinions, recommendations for changes in the TDP were given.

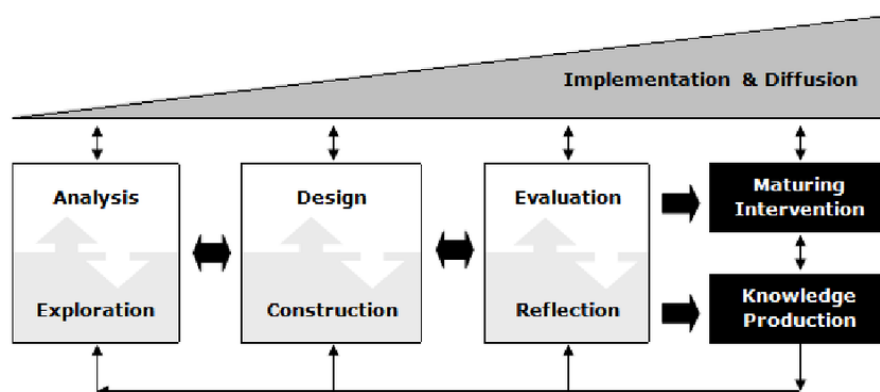


Figure 1. Conducting educational design research phases (McKenny & Reeves, 2012, p. 77).

Description of the organizational context

The TDP about AfL was developed for the organization Expertis. Expertis is an education consultancy, located in both Amersfoort and Hengelo, that provides TDP's to employees of preschool, primary schools and secondary schools. The aim of Expertis is to create sustainable school development with autonomy for teachers at all levels as a starting point. The TDP's provided by Expertis concern several education related subjects, e.g. teaching mathematics to toddlers, asking and giving feedback to colleagues (in schools), personalized learning in primary school and reading comprehension.

Analysis and exploration phase

Theoretical framework

Assessment for Learning

AfL was introduced by UK scholars who protested against the emphasis on summative use of assessment, because this emphasis neglects the quality of the students' learning process (Van der Kleij, Vermeulen, Schildkamp & Eggen, 2015). AfL specifically focuses on *how* students learn and the quality of their learning process (Van der Kleij, Vermeulen, Schildkamp & Eggen, 2015). AfL is

used because it can be an effective way of raising student achievement (Jonsson, Lundahl & Holmgren, 2014). The five key strategies, as depicted in Figure 2, were considered effective when used in coherence.

Key strategies

	Where the learner is going	Where the learner is	How to get there
Teacher	Clarifying, sharing and understanding learning intentions	Engineering effective discussions, tasks, and activities that elicit evidence of learning	Providing feedback that moves learners forward
Peer		Activating students as learning resources for one another	
Learner		Activating students as owners of their own learning	

Figure 2. Key strategies of formative assessment (Wiliam & Thompson, 2008, p. 57).

As can be seen in Figure 2, AfL can be perceived as involving three main processes (Where the learner is going, Where the learner is and How to get there) exercised by three different agents (teacher, peer, learner). Five AfL-strategies are used to answer these main processes. In practice all five strategies should be used in coherence to optimize the effect of AfL. All five key strategies will be discussed below;

Clarifying, sharing and understanding learning goals

According to Wiliam (2011), any attempt at the regulation of a learning process, requires an idea of a goal. Criteria and goal setting engages students in the learning process by creating clear expectations (Garrison & Ehringhaus, 2007). According to Black and Wiliam (2011), students have to recognize the desired goal, realize what their present position is and have some understanding of a way to accomplish the desired goal from their current position. It is the role of the teacher to help students to comprehend what their goals for learning are. An example of this strategy is that students can be asked to participate in establishing the success criteria, this means that students are looking at samples of student work, because students are better at spotting mistakes in the work of others than they are in their own work and when students notice mistakes in the work of others, they are less likely to make the same mistakes in their own work (Wiliam & Leahy, 2015). For young children, this can be done by starting with two pieces of work, made by children, where one is relatively strong and one is relatively weak. Claxton (1995) emphasizes that students should acquire the ability to recognize good work and to correct one's performance so that better work is produced by doing as much in the

reflecting. Rust, Price and O'Donovan (2003) found that students who were aware of the assessment criteria and assessment results, had significantly increased achievements compared to students who were not aware of the assessment criteria and assessment results. Therefore, sharing learning goals and success criteria, criteria for students' work that should be met, might lead to better student achievement and even more effective education (Oswalt, 2013).

Next to that, teachers can differentiate in success criteria. Often, these success criteria are communicated in the form of a rubric. Although, rubrics give only one way in which an aspect of the work can be improved and are more focused on evaluating student achievement than improving (Wiliam & Leahy, 2015).

Engineering effective discussions, tasks and activities that elicit evidence of learning

The strategy to elicit evidence of learning and direct the learning in the planned direction, is the role of a teacher (Wiliam, 2011). To know whether students achieved the learning goals, teachers can engineer effective discussions, tasks, and activities that elicit evidence of learning (Wiliam, 2013). Hohensee (2015) supports this statement by saying that prior knowledge serves a new foundational role in developing mastery, which emphasizes that prior knowledge is necessary to build new knowledge. Finding out what students already know is complex for two reasons. The first reason is that the evidence whether a student does know anything or not, has to be sought by the teacher (Wiliam, 2013). The second reason that finding out what students already know is complex, is because students can be afraid to share their thinking. According to Duckor (2016), teachers should find out what students are thinking by talking to them and asking them for clarification. It is best to find out what students are thinking when there is a structured dialogue in small groups, guided by the teachers' expertise (Wiliam & Leahy, 2015). Nonetheless, students respond positively to activities that elicit evidence of learning, because they could identify inaccuracies in their own thinking and it helped students to see whether they were on the right track (Hawe & Dixon, 2016). However, given the fact that the class sizes become larger, it becomes more difficult for teachers to ensure that they have evidence about students' thinking. A strategy to acquire information about students' thinking, is the think-pair-share strategy (Clarke, 2016). In the think-pair-share strategy the teacher asks students to share their responses with a peer, and then the teacher selects students to share their own or their peer's responses with the whole class (Wiliam & Leahy, 2015).

Activating students as learning resources for one another

This strategy is about peer assessment; defined as "a process through which groups of students rate their peers" (Dochy, Segers & Sluijsmans, 1999). The role of peers is somewhat similar to the role of teachers. While peers may lack the education and experience of teachers, they have exclusive insights into learning. Next to that, students have relationships with peers so that they can use instructional strategies, that would not be as effective when used by teachers. During peer assessment,

students see each other as resources and check each other's work on quality by using established criteria (Black & Wiliam, 2011). Peer assessment provides students the opportunity to build on prior knowledge, reflect upon their own understandings, integrate ideas, reconstruct misunderstandings and explain and communicate their knowledge (Reinholz, 2016). One advantage of using peer assessment is that students who are assessing and giving feedback, are demanded to comprehend the assessing method and the work of a peer, which provides the possibility to get other insights on the subject and the work of a peer. A second advantage is that communication between peers is more efficient than communication between a teacher and a student, because they use the 'same language' (Wiliam, 2011). According to Rust, Price and O'Donovan (2003), students who are engaged in peer processes can have increased student achievement, because socialization processes are essential for a knowledge transfer to occur.

Activating students as owners of their own learning

The final strategy is 'activating students as owners of their own learning' and refers to a number of concepts; metacognition, motivation, attribution theory, interest and self-regulated learning (Wiliam, 2011). According to Black and Wiliam (2015), students can be trained in the skill of finding a way to close the gap between their present position and their desired goal, which is also called self-assessment, in order to understand the main purposes of their learning and have an idea about what they need to do to achieve their goals. Students who reflect while they are engaged in metacognitive thinking, are more likely to be involved in learning (Garrison & Ehringhaus, 2007). Furthermore, students can obtain the possibility to reflect on their current position towards desired goals (Parr & Timperly, 2010). According to Dochy, Segers and Sluijsmans (1999), students who use self-assessment score higher on tests, are more likely to take more responsibility of their own learning and reflect more on their own work. Nonetheless, teachers express doubt about the value and accuracy of student self-assessment (Ross, 2006). Teachers' doubts are about the concern that students might have inflated perceptions of their achievement and that they might be motivated by self-interest. Next to that, a frequently heard concern is that the 'good kids' underestimate their achievement while students who do not know what successful performance entails, overestimate their achievement (Ross, 2006). Research from Ross (2006) shows that self-assessments are indeed higher than assessments done by teachers, although the size of the discrepancy can be reduced through student training, by implementing formative assessment in a consistent way and by other teacher actions.

Providing feedback that moves learners forward

AfL is a process of continuous dialogues and feedback (Van der Kleij, Vermeulen, Schildkamp & Eggen, 2015). For feedback to improve student achievement, as earlier mentioned, several characteristics need to be met (Wiliam & Leahy, 2015);

- a) The current position of the student in relation to the desired goal should be clear.

- b) The feedback indicates what “good” performance entails.
- c) The feedback shows what is needed to reach the desired goal from current position.
- d) The feedback should include how the student reaches the desired goal (Parr & Timperley, 2010).
- e) According to Black and Wiliam (2005), a teacher should give each student guidance on his or her strengths and weaknesses, without giving any overall marks.

If the teacher has provided feedback, students need to understand and act on this feedback (Van der Klei, Vermeulen, Schildkamp & Eggen, 2015). Next to that, students should engage in activities to improve their learning (Wiliam, 2011). Nonetheless, if all these requirements are fulfilled, this does not guarantee that feedback improves student achievement. In order for feedback to result in improved student achievement, students need to mindfully process the information contained within the feedback message such that feedback results in student thinking (Van der Kleij, Adie & Cumming, 2019). At that point, consideration of how feedback is received is taken into account. Van der Kleij, Adie and Cumming (2019) established four categories of student roles; 1) no student role, in which the student plays a passive role and feedback is focused on correcting errors, 2) limited student role, in which the student processes feedback in order for it to result in learning, 3) some student role, in which the student may generate feedback and decides whether or not and how to act upon feedback, and 4) substantial student role, in which students are positioned as active partners who proactively seek, receive and provide feedback to progress their own learning and others’ learning. According to Van der Kleij, Adie and Cumming (2019), the substantial student role is most commonly used among teachers.

Teacher Development Program

The TDP includes the key AfL-strategies. It is not easy to master the skills to implement these AfL-strategies at once. Complex AfL skills can be best learned by using a whole task approach (Kirschner & Van Merriënboer, 2008). Therefore, the 4CID-model, a whole task approach, was used. The 4CID-model is used for developing substantial learning or training programs ranging in length from several weeks to several years or that entail a substantial part of a curriculum for the development of complex skills (Kirschner & Van Merriënboer, 2008). The basic assumption of the 4CID-model is that intentions for complex learning can always be described by four basic components (Kirschner & Van Merriënboer, 2008). The four basic components are further explained below.

Learning tasks

The aim of learning tasks is to integrate knowledge, skills and attitudes. Learning tasks provide authentic, whole-task experiences based on real-life tasks. Learning tasks are organized from easy to difficult tasks. Also, there is diminishing support, scaffolding, in each task.

Supportive information

Supportive information supports the learning and performance of nonrecurrent aspects of learning tasks. Next to that, it explains how to approach problems in a domain and how this domain is organized. Supportive information is organized per task and is always available to the learner.

Procedural information

Procedural information is a prerequisite to the learning and performance of recurrent aspects of learning tasks. Procedural information precisely explains how to perform routine aspects of the task. Next to that, procedural information is just-in-time information.

Part-task practice

Part-task practice provides additional practice for selected recurrent aspects in order to approach a high level of automaticity. Part-task practice also provides a huge amount of repetition.

The four components of the 4CID-model are used in the TDP for secondary education teachers. Seen the fact that the TDP for secondary education teachers is redesigned for primary education teachers, several aspects of the 4CID-model will be used in the TDP for primary education teachers. In Figure 3, ten activities are shown that are carried out when a training for complex learning is designed.

First *performance objectives* are set, in which the goals of the final performance become clear. In this case, the performance objectives are that teachers know what formative assessment entails and that they get acquainted with strategies that provide evidence of learning. Secondly, *learning tasks* are *designed* to provide learners with variable whole-task practice at a particular difficulty level until they reach the prespecified standards for this level, from which they continue to the next, more complex tasks.

The TDP starts with an activity that reveals teachers prior knowledge about formative assessment. This is in contrast with Wiliam and Leahy's theory (2015), they say that the TDP should start with the meeting facilitator who hands out agendas and presents the learning intentions for the meeting (Wiliam & Leahy, 2015). Then, the activities become more complex. The third activity is the *design of supportive information*, by which all information that may help learners carry out the nonrecurrent problem solving and reasoning aspects of the learning tasks within a particular task class is meant. In the TDP, teachers are allowed to use the PowerPoint slides to answer questions. Again, this is in contrast with Wiliam and Leahy's theory (2015) about formative assessment; they say that participants should engage in an activity with the aim to help them focus on their own learning.

The fourth activity is the *design of procedural information*, by which all information that exactly tells you how to do something is meant. Procedural information is included in the TDP in the form of tips and tricks.

The fifth activity is the *design of part-task practice*, by which practice that may be necessary for selected recurrent aspects that need to be developed to a high level of automaticity, are meant. There is no necessary practice that teachers have to learn in the TDP. *Sequence task classes* describes an easy-to-difficult progression of categories of tasks that learners work on. The *analysis of cognitive strategies* answers the question “How do proficient task performers systematically approach problems in the task domain?” The *analysis of mental models* answers the question “How is the domain organized?” The results of these analyses provide the basis for the design of supportive information for a particular task class. The *analyses of cognitive rules* identifies the condition-action pairs that enable experts to perform routine aspects of tasks without effort. The *analysis of prerequisite knowledge* identifies what learners need to know to correctly apply those condition-action pairs. In the TDP prior knowledge is also tested. Together, the results of these analyses provide the basis for the design of procedural information.

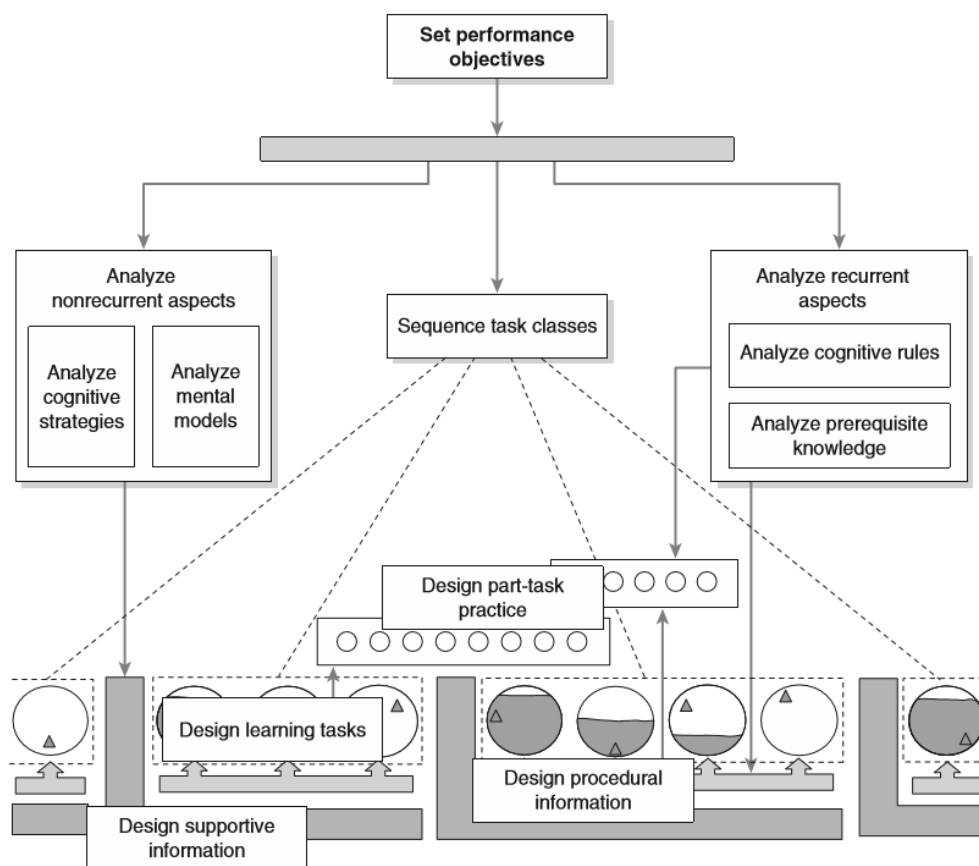


Figure 3. Ten activities in designing for complex learning (Kirschner & Van Merriënboer, 2008, p. 6)

Before the design learning tasks can be designed, among others prior knowledge of teachers was tested by means of a needs assessment. Below, the definition and requirements for a needs assessment are described.

Needs assessment

A needs assessment is “a systematic approach to studying the state of knowledge, ability, interest, or attitude of a defined audience or group involving a particular subject.” (McCawley, 2009) According to McCawley (2009) a needs assessment provides insights in how a training can impact the audience, knowledge about educational approaches that may be most effective, awareness of existing programs, information about the current situation, knowledge about the potential interest for future programs and credibility that the training serves the target audience. In this case, a needs assessment was done because it describes the gap between what exists and what is needed. There are two reasons why a needs assessment should be done before TDP’s are developed (Brown, 2002). First, specific problems in the organization can be identified. The development program should be focused on the real needs of the participants. Secondly, needs assessment should be done to obtain management support. The school management will be committed to the TDP when the researcher can show that it improves student performances. This is important because if the school management is committed to the TDP, the more likely that teachers are also committed to the TDP due to the managements’ enthusiasm. In conclusion, without a clear understanding of needs, training efforts are almost always useless (Brown, 2002). After the needs assessment, it first needed to be decided what needs could be met by training and development. In some cases, it might be that practice or feedback was all that was needed (Brown, 2002).

Characteristics in a needs assessment interview

Particular characteristics of professional development are crucial to increasing teacher knowledge and skills and improving their practice, which hold promise for increasing student achievement (Desimone, 2009). These characteristics were: a) content focus, b) active learning, c) coherence, d) duration and e) collective participation.

Content focus

Activities that focus on subject matter content and how students learn that content, increases both teacher knowledge and skills, and student achievement (Desimone, 2009). Thus questions in the interview that are focused on the content of AfL or the way teachers apply AfL in classroom concern content focus. Black and Wiliam (2011) state that teachers should also formulate issues around AfL which they encounter in classrooms, with the idea that solutions for this problem can be found in the TDP. Next to that, Timperley (2008) concludes that the link between the content and the activities organized should be clearly explained to teachers, with the aim that teachers are engaged in the TDP. Furthermore, the content of the TDP are those that have been established as effective in achieving

valued student outcomes (Timperley, 2008). In the needs assessment for teachers and consultants in this study, this means that items need to be included to ask to what extent there is a perceived content focus, e.g. “What would you advise me to add in a TDP about formative assessment for primary education teachers?”.

Active learning

Active learning is the opposite of passive learning, in which someone is listening to a lecture. According to Desimone (2009) chances for teachers to engage in active learning are also related to the effectiveness of professional development. Active learning can occur in many forms, e.g. observing expert teachers or being observed, followed by feedback and discussion. Black and Wiliam (2011) agree with the idea that observing would be a good idea for teachers, because teachers need a variety of living examples of implementation, practised by teachers with whom they can identify. Timperley (2008) states that teachers need multiple opportunities to learn new information, they need to try ideas out in every day contexts. Trying ideas out requires active learning. The interview questions in this ‘active learning’ category concern possibilities to implement active learning. In the needs assessment for teachers and consultants it is relevant to ask to what extent there is perceived active learning, e.g. “What materials do you consider important during a TDP?”

Coherence

Coherence is defined as: “The extent to which teacher learning is consistent with teachers’ knowledge and beliefs.” (Desimone, 2009, p. 4) Another important aspect of coherence is the consistency of school, district and state forms and policies with what is taught in professional development. Interview questions about policies that teachers have to deal with or consistency with teachers’ prior knowledge concern the category ‘coherence’. Timperley (2008) confirms this statement by saying that new ideas should be in congruence with current practice. In the needs assessment for teachers and consultants items are relevant to ask to what extent there is perceived coherence, e.g. “Are there school-wide agreements about formative assessment?”

Duration

Intellectual and pedagogical change requires professional development activities to be of sufficient duration, including the number of hours spent in the activity. Research shows that support for activities that are spread over a semester and include twenty hours or more of contact time (Desimone, 2009). According to Kanaya, Light and McMillan Culp (2005), very brief (in terms of duration) TDP’s sometimes demonstrate greater effects than longer programs, which they attribute to the strong content focus of the brief trainings. Thus, questions in the interview about the duration of the TDP or the frequency of the TDP are placed in this category. In the needs assessment for teachers

and consultants items need to be included to ask to what extent there is perceived duration, e.g. “How long do you think a TDP should last?”

Collective participation

Collective participation can be accomplished through participation of teachers from the same school, grade or department. Such compromises set up potential interactions which can be a powerful form of teacher learning. Timperley (2008, p. 19) confirms this; “collegial interaction that is focused on student outcomes can help teachers integrate new learning into existing practice”. All questions in the interview that concern involvement of others are placed in this category. In the needs assessment for teachers and consultants it is relevant to ask to what extent there is perceived collective participation, e.g. “Do you have the idea that you get the space to implement formative assessment?”

Regarding formative evaluation of the TDP with the target group, according to Guskey (2002) an effective evaluation of a TDP requires analysing the levels as shown in Table 1. Also, the concepts that the questions measure are described.

At level 1, participants’ reactions, the researcher asks questions focusing on whether the participants liked the experience or not. The initial satisfaction with the TDP are measured at level 1. At level 2, participants’ learning questions are asked, which measure the knowledge and skills that participants gained. Measures must show accomplishment of specific learning goals, which means that indicators of successful learning need to be outlined before activities begin. This information can be used to improve the content, format, and organization of the program or activities. New knowledge and skills of the participants is measured at level 2. At level 3, questions are focused on organization and measure the organization’s advocacy, support, accommodation, facilitation and recognition. According to Guskey (2002) lack of organization, support and change can destroy any professional development effort. The questions asked at level 4, are questions like “Did the new knowledge and skills that participants learned make a difference in their professional practice?” To gather relevant information, indicators of both the quality of implementation and degree of implementation should be clearly specified. Enough time after the TDP should have been passed to adapt new ideas in practice. Level 4 measures the degree and quality of implementation. The questions asked in level 5 are about student outcomes. These questions will not be asked, given the fact that the aim of this study was not to measure student outcomes.

Table 1*Five levels of personal development plan (Guskey, 2002).*

Evaluation level	What questions are addressed?	What is measured or assessed?
1. Participants' reactions	Did they like it? Was their time well spent? Did the material make sense? Will it be useful? Was the leader knowledgeable and helpful? Were the refreshments fresh and tasty? Was the room the right temperature?	Initial satisfaction with the experience
2. Participants' learning	Did the participants acquire the intended knowledge and skills?	New knowledge and skills of participants
3. Organization support and change	Was the support public and overt? Were problems addressed quickly and efficiently? Were sufficient resources made available? Were successes recognized and shared? What was the impact on the organization? Did it affect the organization's climate and procedures?	The organization's advocacy, support, accommodation, facilitation and recognition.
4. Participants' use of new knowledge and skills	Did participants effectively apply the new knowledge and skills?	Degree and quality of implementation
5. Student learning outcomes	What was the impact on students? Did it affect student performance or achievement? Did it influence students' physical or emotional well-being? Are students more confident as learners? Is student attendance improving? Are dropouts decreasing?	Student learning outcomes: Cognitive (Performance and achievement), Affective (Attitudes and dispositions), Psychomotor (Skills & behaviors)

Research questions

For this research, two research questions were formulated. The first research question that fits the theoretical framework above is, "What does a TDP about AfL for primary education look like?"

To answer the research question, the following sub questions had to be answered:

- a) What are primary education teachers' needs for a TDP about AfL?
- b) What do consultants think is important during a TDP about AfL in terms of teacher needs and their own needs for this program?

- c) What aspects of the TDP for secondary education can be used in the design of the TDP from primary education?

The second research question is as follows: “How do primary education teachers and consultants experience the TDP?” To answer this research question, the following sub questions had to be answered:

- a) How did primary education teachers experience the TDP?
- b) How did the consultants experience the TDP?
- c) What are the recommendations for the TDP for primary education?

Needs analysis

Approach

A needs assessment was done to describe the gap between what exists and what is needed according to teachers and consultants.

Method

This part of the method focuses on the research question: “What does a TDP about AfL for primary education look like?”

Respondents

For this research, convenience sampling was used. Primary education teachers from the researcher’s network were contacted by e-mail whether they wanted to participate in the TDP about AfL. In total nine teachers, between the age of 20 and 65, from two different schools in Enschede participated. Also, three consultants, specialized in AfL, from Expertis participated to give their view from the consultant’s perspective.

Instruments

Interview scheme

The needs assessment interview was about what teachers and consultants thought is important during a TDP about AfL. The interview questions were based on Desimone’s (2009) theory (See Theoretical Framework) about characteristics of professional development that are crucial to increasing teacher knowledge and skills and improving their practice, and on guidelines for executing an interview (Emans, 2002; Baarda, Goede & Teunissen, 2009). An example question of the interview for consultants was: “What would you advise me to add in a training about AfL for primary education teachers?” An example question of the interview for primary education teachers was: “What aspect of AfL do you experience as difficult?” The whole interview for primary education teachers can be found in Appendix C and the interview for consultants in Appendix D.

Procedure

First, schools were approached by e-mail whether they wanted to participate in the TDP (See Appendix A), followed-up by a telephonic request. If their answer was yes, an informed consent was signed that given information has only been shared with the researcher and assessor of this research (See Appendix B). Then, the semi-structured interviews were conducted. These interviews are based on theory of Desimone (2009) (See Theoretical Framework) and were audio recorded by phone.

Data analysis

All generated data is qualitative data. According to Baarda, Goede and Teunissen (2009), an interview needs to be transcribed with the aim of having a better starting point to analyse the data. After the interview was transcribed, a table was created from coded fragments, with the aim to reduce the collected data. In this table, all relevant information from both teachers and consultants was presented. This information was used to design the TDP. To check the inter-rater reliability of the conducted interviews, Cohen's Kappa was calculated based on two raters' encodings. The interrater agreement was 85.96%. Cohen's K was 0.69, which means that there was a moderate level of agreement between the two raters.

Needs analysis results

A summary of the needs assessment results is shown below in Table 2. Table 2 shows both teachers' and consultants' needs and wishes regarding a TDP about AfL. The answer to the sub question: "What are primary education teachers' needs for a TDP about AfL?" is that from the interviews it appeared that teachers especially want information about what AfL entails and need practical tips with the aim to implement it in the classroom. The answer to the sub question: "What do consultants think is important during a TDP about AfL in terms of teacher needs and their own needs for this program?" is that consultants especially want to give information before the TDP about AfL on paper, give information about AfL and give practical tips. The results are linked to the theoretical framework (Desimone, 2009). In addition, the aspect 'coherence' was applied in the sense that the headmaster participated in the TDP and supports teachers where necessary. The results are categorized into three sections: the content, the design and the duration of the TDP. The content consists of three parts: before, during and after the TDP. The number between brackets shows how many times the term was mentioned by teachers and/or consultants. For illustration, the term 'effect', by which the intended effect of AfL is meant, was mentioned four times and was considered as important during the TDP. To clarify what the codes mean, they are defined below.

Content focus - knowledge (paper) transfer

Knowledge (paper) transfer refers to knowledge about AfL provided to teachers via paper or online before the start of the TDP. Knowledge (paper) transfer is related to 'content focus', because it is focused on the subject matter content that teachers learn during the TDP (Desimone, 2009).

Especially consultants suggested to give information about AfL via paper or online. A quote of a consultant regarding knowledge (paper) transfer: “It would be nice to do a part of the knowledge transfer via paper or online, because people often like it to receive information beforehand”. An example of knowledge (paper) transfer is that teachers receive an (online) article about AfL before the TDP that they have to read.

Content focus - information

Information means that information about implementing AfL in classroom is given. Information is related to ‘content focus’, because all the information that teachers receive is related to subject matter content (Desimone, 2009). An example of information is the explanation of the five strategies of AfL. A quote of a teacher that would like to have information about AfL: “I would like to learn what AfL entails and how I can use it in classroom”. Almost all teachers gave this as a response to the question what they would like to learn about AfL.

Content focus - effect

Effect, by which the intended effect of implemented AfL is meant, was mentioned often by teachers. Teachers said that they want to know what the effect of AfL is on children and whether it works. A quote of a teacher “I want to know what the idea behind AfL is and what the effect is on children”. Effect is related to ‘content focus’, because the activity focuses on subject matter content which could increase student achievement (Desimone, 2009). An example of effect is that AfL improves student achievement.

Content focus - definition

Definition, by which the definition of formative assessment, summative assessment and AfL is meant, is also related to ‘content focus’, because it focuses on subject matter content and how teachers learn that content (Desimone, 2009). All teachers mentioned in their interview that they want to know what the definition of AfL is: “You mentioned what AfL entails and I want to know everything about AfL; what the definition is and how I can use it in classroom”.

Content focus - differentiation

Differentiation means that instruction is tailored to meet individual’s needs. Differentiation is linked to ‘content focus’, because it focuses on subject matter content (Desimone, 2009). An example of differentiation is that teachers adapt their instruction to three different student levels by designing easy exercises for low ability children, normal exercises for average ability children and complex exercises for high ability children. Differentiation was mentioned by one teacher. A quote of the teacher that would like more information about differentiation during test moments is: “I wonder if

there is a possibility to differentiate during a test between different student levels, because sometimes low ability students are making a test while it is not on their own cognitive ability level”.

Content focus - assessment differentiation

Assessment differentiation means that assessment is tailored to individuals’ needs and is linked to content focus, because it focuses on subject matter content (Desimone, 2009). An example of assessment differentiation is that a test is adapted to individuals’ needs. Thus, all students are making the test on their own level. The quote that is mentioned above (at ‘differentiation’), fits the concept ‘assessment differentiation’. Nonetheless, the TDP is not about differentiation and therefore this concept was not implemented in the TDP.

Content focus - link between theory and practice

Link between theory and practice means that information is provided to teachers about how to bring the new knowledge into practice. This concept was mentioned by a consultant, who said that “as a trainer you need a lot of knowledge and show that you can apply this knowledge in different situations. For example, if you are telling something new to teachers, you should tell them how they can bring these ideas into practice.” The link between theory and practice is related to ‘content focus’, because the subject matter content should be brought into practice by teachers (Desimone, 2009).

Content focus - practical tips

Practical tips means that advice is given about how to implement AfL in classroom. Practical tips is linked to ‘content focus’, because it is focused on ways how to best apply the subject matter content in practice (Desimone, 2009). An example of practical tips is that teachers could implement wait time in their daily practice. Practical tips were mentioned by almost all teachers and consultants: “I would like to have practical tips that I can use the next day” and “I think teachers would be excited to receive practical tips to use in their daily practice”.

Active learning - strategies

Strategies are possibilities to make learning more active and is linked to ‘active learning’, because it refers to the opposite of passive learning (Desimone, 2009). An example of strategies is implementing didactic methods to make the TDP more active. Many teachers told that they prefer an active TDP. A quote of a teacher: “I think it is very important to keep it active, that you don’t have to listen all the time, because that is not going to work for me” and “I would add didactic methods to make it more active and have conversations with each other”.

Active learning - providing tools

Providing tools points to the tools that can be used in classroom and is linked to ‘active learning’, because it can be used in classroom and is therefore the opposite of passive learning

(Desimone, 2009). An example of a tool that is provided, is a learning logbook that can be used by children to give insight to the teacher what the children want to learn or learned. A few teachers and consultants mentioned this during the interviews: “I think it is important that you provide teachers with material that can be used in their own practice” and “I think it is important to provide the materials, because if you are excited after the TDP and then you have to look for materials yourself, then my motivation is gone”.

Collective participation - observation

Observation means that teachers are looking to each other’s lessons and give tips for improvement. Observation is linked to ‘collective participation’, because teachers are participating in a TDP with their colleagues, which is a powerful form of teacher learning (Desimone, 2009). A few teachers and one consultant advised to do observations and give each other feedback on their lessons. A quote from a consultant: “You could observe teachers or teachers observe each other after you have told some theory to see whether they brought it into practice”.

Collective participation - cooperating

Cooperating means that teachers are working together during the TDP. Cooperating is linked to ‘collective participation’, because teachers are participating in a TDP with their colleagues (Desimone, 2009). An example of cooperating is that teachers work together on an assignment during the TDP. A lot of teachers and consultants indicated that they would like to cooperate during the TDP. A consultant stated that: “Teachers come together to brainstorm, so I would give many collaborative assignments”.

Content focus - examples

Examples stands for illustrations of what good AfL in practice looks like. Examples are linked to content focus, because the examples are about the subject matter content, AfL (Desimone, 2009). All teachers said that they would like to have an example of how to implement AfL. An example of an illustration of what good AfL in practice looks like, is giving turns using ice lolly sticks. A quote of a teacher about examples: “I would like to see examples of how to apply formative assessment in practice”.

Content focus - video

Video is described as a short movie that shows how good AfL in practice looks like. An example of a video is a video about reflecting on cooperation which is linked to the strategy ‘activating learners as researchers of each other’. Video is linked to ‘content focus’ because it focuses on how students learn that content, which first has to be learned by teachers (Desimone, 2009). A consultant came with the idea to show a video about how others experienced AfL, as an example:

“What I always like is a video about experiences of teachers in which they tell what AfL has brought them”.

Active learning - active

An example of active is that teachers do not have to listen passively, but also get the chance to discuss about AfL. Almost all teachers stressed the importance of an active TDP: “I would like to get the opportunity to get in contact with other teachers and discuss together about AfL”.

Active learning - variety

By variety, variation in the TDP is meant, for example partial listening and partial exercising with acquired knowledge. Variety is linked to ‘active learning’, because it stresses the importance of being active during the TDP (Desimone, 2009). A few teachers mentioned that they would like variety in activities during the TDP. A quote of a teacher: “I think it’s important that you provide variety, that we don’t have to listen all the time”.

Duration - 1-3 hours

Teachers gave different responses to the question how long a session should last, the answers varied between one and three hours. This is linked to ‘duration’, because it includes the number of hours spent on the TDP (Desimone, 2009). It was striking that consultants indicated a longer duration of the session than teachers did. A quote of a consultant: “personally I think that a three-hour TDP is desirable, so that you can go into depth” and as a contrast, a quote of a teacher: “I think it should last one hour or one and a half hours, if I have to listen for two hours, I am done after ten minutes I think”.

Duration - 3-8 meetings

Most teachers answered that the TDP should include four meetings, each quartile one session. Consultants answered that the TDP should at least include four to six meetings. A quote from a teacher: “from experience I know that you can learn a lot from three to four meetings”. A quote from a consultant: “I think the TDP should not last too long, about four to eight meetings”. The number of meetings is linked to ‘duration’, because it describes the duration of the TDP (Desimone, 2009).

Duration - spread over 3 months – 1 year

The responses among teachers varied enormously. One teacher stated that the duration of the TDP should be three months: “You need some time, because you also need to evaluate the TDP and adapt goals, so I think three months would be sufficient”. Another teacher said that the duration of the TDP should be one year: “I think you can learn a lot in one year”. The duration of the TDP is linked to ‘duration’, because it describes the time the TDP should last (Desimone, 2009).

Table 2.
Results needs assessment primary education teachers and consultants

Content focus		Design		Duration
<i>Before TDP</i>	<i>During TDP</i>	<i>After TDP</i>	<i>Lay-out TDP</i>	
Knowledge transfer paper* (1)	Information*(16)	Providing tools** (4)	Cooperating *** (7)	1-3 hours ****
	Effect* (4)	Observation *** (3)	Examples* (9)	3-8 meetings ****
	Definition* (5)		Video *	
	Differentiation* (1)	Assessment differentiation * (1)	Active** (7)	Spread over 3 months -1 year****
	Link theory and practice* (1)		Variety** (2)	
	Practical tips* (8)		Strategies ** (5)	
<i>Note.</i> ‘Content’ is defined as the subjects that are included in the TDP. ‘Design’ is defined as what it should look like and how it should be organized. *= content focus, **= active learning, ***= collective participation, ****= duration (Desimone, 2009).				

Design and construction phase

The aspects mentioned in Table 2 were most relevant for the design of the TDP. All the concepts that were pointed out by teachers and consultants were applied in the TDP, except for the concepts ‘differentiation’ and ‘assessment differentiation’, because this is not the focus of the TDP. During the design and construction phase, the design of the TDP for secondary education teachers was described in detail. Then, the TDP for secondary education teachers was compared with results from the needs assessment and parts that are used for the TDP were further elaborated. Furthermore, a model for a TDP was explained. Finally, a systematic approach to arrive at the redesign was described.

TDP for secondary education teachers

This heading, together with the ‘systematic approach’ answers the sub question: “What aspects of the TDP for secondary education can be used in the design of the TDP from primary education?”

The TDP for secondary education teachers was focused on the subjects Dutch, English and Chemistry. The TDP for secondary education teachers consisted of five meetings, spread over six months and included twenty hours of contact time. The aim of the TDP for secondary education teachers was to offer multiple opportunities to practice the newly learned skills in teachers’ own

teaching practice. The meetings were provided by three trainers and contained for example videos and new material.

Given the fact that AfL is a complex skill, which requires an authentic learning environment, a whole-task approach was used. The AfL TDP for secondary education teachers was designed using the 4CID-model, as mentioned in the theoretical framework (Kirschner & Van Merriënboer, 2008). This means that learning tasks are realistic and meaningful. The TDP started with handing out the agenda, followed by the learning goals and testing teachers' prior knowledge, according to the theoretical framework, because both Wiliam and Leahy's theory (2015) and Kirschner and Van Merriënboer's theory (2008) were combined. According to Russell, McPherson and Training (2001) a TDP is considered as successful when it is based on research supported conceptions of teaching and learning, when it is focused on the specific context of the participants, and when it takes into account natural reactions of human beings.

Wolterinck, Poortman, Schildkamp and Visscher (2019) developed a hierarchy of skills that are required for AfL as depicted in Figure 4. According to them, four main skills are required during the process of AfL; first, a teacher prepares the lesson based on the evaluation of the previous lesson and based on the preparation of the lesson series in a lesson period. Secondly, the teacher tailors the instruction to the learning needs of the students, elicits evidence of learning and stimulates students as owners of their own learning. Finally, the lesson is being evaluated. The eleven skills that are depicted at the bottom of Figure 4, facilitate the four main skills that are required during the AfL process.

The TDP for secondary education teachers was based on the four main skills represented in Figure 4; preparing a lesson series, preparing a lesson, lesson execution and lesson evaluation. The first session was an introduction of the TDP for secondary education teachers. During the other four sessions, each skill was discussed and explained. The five key strategies of AfL (Wiliam & Thompson, 2008) were also part of the TDP for secondary education teachers. Each session also contained one of the key strategies of AfL.

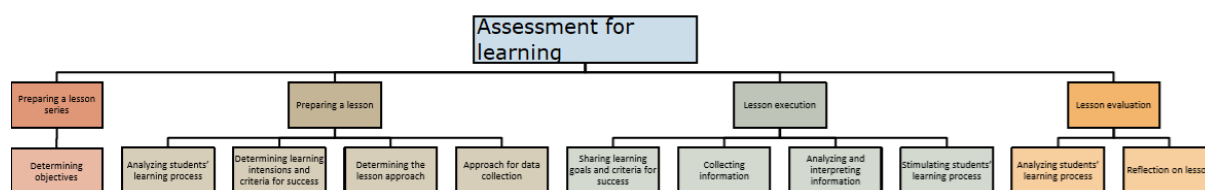


Figure 4. Hierarchy of skills required for AfL (Wolterinck et al., 2019).

According to the results of the needs assessment, primary education teachers benefit most from a TDP about the main skill 'lesson execution', especially the subskill 'collecting information'. It was remarkable that a lot of teachers mentioned practical tips and examples. Therefore, these were

certainly in the TDP and were reused from the TDP for secondary education teachers. However, teachers also wanted to have some information about what AfL entails and what the effect of AfL is. This information was also reused from the TDP for secondary education teachers.

Systematic approach

The ideas from the needs assessment for the TDP, are further elaborated in a morphological chart, as depicted in Table 3 (McKenney & Reeves, 2012). From this morphological chart, all the advantages and disadvantages of the ideas are represented in Table 4, with the aim to discover what aspects could be used in a TDP and what aspects could not be used (McKenney & Reeves, 2012). The needs analysis results and the current situation as regards the COVID-19 virus, lead to ideas that were most suitable in this situation. These ideas are marked in green in Table 4. Then, a skeleton design was made to indicate the scope of the TDP in terms of goals, people and time (McKenney & Reeves, 2012). The skeleton design is depicted in Table 5. Furthermore, the PowerPoints of the TDP for secondary education teachers were viewed to see what of the material could be used for the TDP. Finally, the structure of the TDP was described, including the slides of the PowerPoint and the information that was told during the TDP. Given the fact that the TDP is not about differentiation, this 'wish' from the needs assessment was not fulfilled during the design of the TDP. In Table 8 is described how the final design fits the wishes of the needs assessment.

Table 3
Morphological chart with ideas for the TDP

Broad propositions	Mid-level propositions	Specific propositions				
Give information about AfL	Definition Effect Link between theory and practice	Definition formative assessment and summative assessment	Definition AfL	Short videos about effect AfL	Information about five strategies Wiliam & Thompson.	Explaining one strategy Wiliam & Thompson
Implement interactive teaching methods	Cooperation	Think, pair, share	Ice lolly sticks	Exit-tickets	ABCD cards	
Provide tools	Observation sheet Checklist	Self-assessment	Peer observation sheet	Student reflection	Student feedback to teacher	Lesson planning sheet
Implement examples	Using the book 'formative assessment'	Video	Stories	Pictures	Examples from own practice	
Give practical tips	Based on theory Based on practice	Use the book 'embedding formative assessment'		Use the book 'formative assessment'		
Provide variety	Mixed groups Partial listening Partial acting	Providing information	Hands-on exercises	Practical tips	Giving the exercise to observe each other	

Table 4*Advantages and disadvantages ideas for TDP*

Aspect	Advantage	Disadvantage
Definition AfL	- Provide clarity about what AfL entails	- Some teachers might already know what it means
Short video about effect AfL	- Teacher might get excited to try it, to see whether it works	- Could take too much time during the TDP
Information about 5 strategies	- Teacher get more background knowledge	*
Explaining one strategy	- TDP is focused on one aspect - Teachers get not confused with the other strategies	- The total picture is missing
Answer the question: "Is differentiation during a test possible?"	- One teachers' question is answered	- Is not related to AfL
Use ice lolly sticks	- Teachers see that it works in practice	- The TDP is online and therefore teachers do not see my screen
Use exit-tickets	- Teachers see how the exit ticket works	*
Use ABCD-cards	- Teachers see how ABCD-cards can be used	- The TDP is online and I cannot see all teachers' screens, so the ABCD-cards do not work
Provide peer observation sheet	- Teachers can use this observation sheet to give tips to improve the use of formative assessment	*
Provide student reflection	- Teachers can use the student reflection to see what students want to learn and what they already learned during the lesson	- The student reflection only works if teachers taught students how to reflect, thus if teachers do not provide any explanation, it won't work
Provide student feedback form	- Teachers can use the student feedback form for receiving feedback from students and improve their lessons with this feedback	
Provide lesson planning sheet	- Teachers are more aware of formative assessment during the planning of their lesson	- Teachers do not know how to fill in the lesson planning sheet
Show videos	- Teachers see how AfL should be used in classroom	*
Tell examples	- Teachers get an idea of how to use AfL in classroom	- This might take too much time
Show pictures	- Pictures can make something very clear, what words can't do	*
Tell examples from own practice	- Teachers hear from someone in 'their field' that it works, which might stimulate them to try several things in practice	*
Give practical tips	- Teachers get tips about how to apply AfL in classroom	*

Provide information	- Teachers get more background knowledge about the topic	- Should not last too long
Provide hands-on exercises	- Teachers are processing the information in an active way	*
Give the exercise to observe each other	- Might stimulate them to put AfL directly into practice	- They might see it as 'homework' and therefore less motivated
<i>Note.</i> * = there is no relevant disadvantage		

The ideas that are marked green, were used in the TDP. The ideas that are not marked, were not used in the TDP because the advantages did not outweigh the disadvantages. In Table 5 the design tasks, materials and resources that were needed, activities that could be provided and participation are described in a skeleton design.

Table 5 <i>Skeleton design</i>			
Design task	Materials/resources	Activities/processes	Participation/implementation
Definition + strategies AfL	Book PowerPoint Software TDP agenda	Online lecture	Individuals
Implement videos	Book Digital tutorials	Discuss online about videos	Group
Hands-on exercises	Book Informative website	Can be executed during online lecture	Individuals/pairs
Show pictures	Pictures	Tell how AfL can be used in practice	Group
Exit tickets	Software Book	At the end of the lecture everybody answers a question about acquired knowledge	Individuals
Give practical tips	Book PowerPoint	Discuss online about what tips you would use	Group
Use examples from own practice	Own examples	Tell examples about when you used AfL	Group
Provide tools	Self-assessment Peer observation sheet Student reflection Student feedback to teacher Lesson planning	How-to courses	Group

The PowerPoint slides from the TDP for secondary education teachers that were reused for the TDP are depicted in Figure 5, Figure 6, Figure 7, Figure 8, Figure 9 and Figure 10.

Toetsen: informatie verzamelen

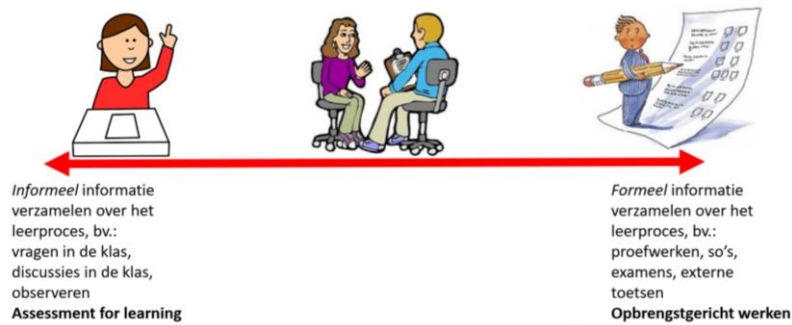


Figure 5. What is Assessment for Learning?

Figure 5 was used to describe what AfL entails and what the relationship is between Formative Assessment and AfL. The results of the needs assessment showed that teachers would like to know what the definition is of AfL.

	Waar werkt de leerling naartoe?	Waar is de leerling nu?	Hoe komt de leerling naar de gewenste situatie?
Leraar	1. Verhelderen van leerdoelen en delen van criteria voor succes	2. Realiseren van effectieve discussies, taken en activiteiten die bewijs leveren voor leren	3. Feedback geven gericht op verder leren
Mede-leerling	Begrijpen en delen van leerdoelen en criteria voor succes	4. Activeren van leerlingen als belangrijke informatiebronnen voor elkaar	
Leerling	Begrijpen van leerdoelen en criteria voor succes	5. Activeren van leerlingen in het stimuleren van eigenaarschap over het eigen leren	

Figuur 1: Vijf strategieën van formatief evalueren (Leahy, Lyon, Thompson & William, 2005).

Figure 6. PowerPoint slide TDP for secondary education teachers.

Figure 6 was useful because it provided information about the five essential strategies of AfL. Next to that, Strategy 2 was highlighted from this Figure in the TDP, because Strategy 2 was explained during the TDP. Strategy 2 was chosen because the results from the needs assessment showed that teachers needed information about this strategy the most.

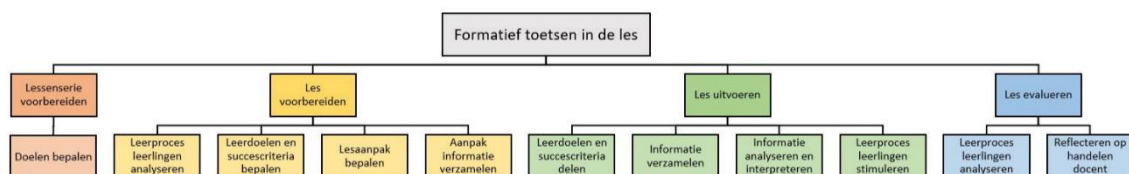


Figure 7. PowerPoint slide with hierarchy of skills required for AfL.

Figure 7 was used in the TDP because the green part 'lesson execution' was useful, especially the part 'gathering information'. It emphasizes on what aspect we are focusing in the process of AfL.

Opdracht: Reflectie op eigen lespraktijk



Geef met **groene** stickers aan welke vaardigheden je reeds goed beheerst en geef met **rode** stickers aan welke vaardigheden aandacht behoeven.

Figure 8. PowerPoint slide with reflection on own practice.

Figure 8 was used in the TDP because it was an active way of reflecting on teachers' own practice. Due to the fact that the TDP was online, teachers sent 'yes, I do apply that in practice' or 'no, I don't apply that in practice'.

Hoe ziet succes eruit?

Gebruik van voorbeelden



Kijkvraag:

Welke vaardigheden zie je terug in deze fragmenten en licht toe?



[Les Engels](https://www.youtube.com/watch?v=vtYYBwjOY6M)

<https://www.youtube.com/watch?v=vtYYBwjOY6M>



[Les Wiskunde](https://www.youtube.com/watch?v=UG5iK7TMRuU&list=PLmFr8dtDPc_1lojBbndzkJZZUOIAnfLk&index=4)

https://www.youtube.com/watch?v=UG5iK7TMRuU&list=PLmFr8dtDPc_1lojBbndzkJZZUOIAnfLk&index=4

Figure 9. PowerPoint slide with videos about what success looks like.

Figure 9 was used, but with minor adjustments, such as different videos. These videos are made for secondary education teachers. Videos from the book 'formatieve assessment' were used, because these were suitable for primary education (Clarke, 2016). The question that was asked, remained the same: "What skills do you see in the video, illustrate".

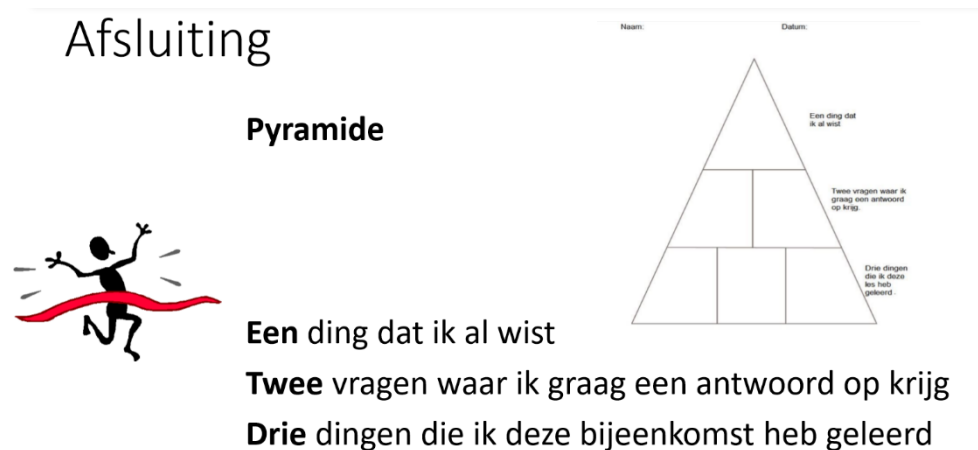


Figure 10. PowerPoint slide with short evaluation of the TDP.

Figure 10 was used for the TDP because it is another, attractive variant of evaluating. However, the teachers did not have to place their answers in a pyramid form, they have just put their answers in the chat.

The formative assessment cards from SLO (Silfhout, 2019), also used in the TDP for secondary education teachers, were used in the TDP. Next to that, lesson observers (Appendix E), were handed out to primary education teachers at the end of the TDP (Wiliam & Leahy, 2015). The rest of the PowerPoint slides were not used because most of the slides were focused on a TDP that existed of multiple sessions. Another reason that the rest of the slides were not used, was that these slides were either too complicated for novices in the field of AfL or that they were not relevant for the chosen strategy. Thus the answer to the sub question: “What aspects of the TDP for secondary education can be used in the design of the TDP from primary education?” is that the slides as depicted in Figure 5 to 10 and the formative assessment cards from SLO can be reused for primary education teachers.

Structure TDP

The whole TDP consists of six meetings over ten months, because from the needs assessment it appeared that teachers want to have between 3 to 8 meetings. Given the fact that from the needs assessment it also appeared that teachers would like to have a lot of information, six meetings are necessary to give teachers enough information. Next to that, the meetings are spread over ten months, because the teachers said in the needs assessment that they would like to have some time between the meetings to try the new strategies out in practice. The first meeting is an introduction to AfL. In every meeting one of the five key strategies of Wiliam and Thompson (2008) is discussed, because teachers said in the needs assessment that they want more information about these topics. A global scheme for the topics and schedule of the TDP is depicted in Table 6. Next to that, a global planning of the whole TDP is depicted in Table 6. One session was fully developed for teachers and was also presented. The

PowerPoint slides of this session are depicted in Appendix H. The TDP session for teachers is worked out as a partly detailed product, because the other sessions of the TDP still have to be finished. Following the Evaluation Matchbord (SLO, 2019), a focus group in the form of an interview was done with quality aspects that measured the relevancy and consistency.

Table 6.
Scheme whole TDP

Session	Topic	Subtopics	Date	Duration
1	Introduction	<ul style="list-style-type: none"> - Getting to know each other while drinking coffee. - What is formative assessment, summative assessment, relationship between the two. - Ratio formative assessment and summative assessment in education currently. - Why should we use it? - Content of the TDP. - Structure of the TDP. - Dates of all sessions, where are the sessions? Do they have to bring their own meal? - Total amount of work load. - Explanation five strategies. - ‘Homework’: reading articles about strategy next session. - Exit ticket: What would you like to learn during the TDP? 	September	3 hours
2	Clarifying, sharing and understanding learning intentions	<ul style="list-style-type: none"> - Starting with coffee. - Discussion about homework in groups. - Why should we use this strategy? - What’s the difference with now? - What works, how does it work and when does it not work? - Good and bad examples of the strategy, followed by a discussion. - Break with coffee/tea - Effect on students. - Discussion about how you would apply this in practice. - ‘Homework’: make a short video when you implement this strategy in classroom. - Exit ticket: What did you learn today? What are you going to bring into practice? 	October	3 hours
3	Engineering effective discussions, tasks and activities that	<ul style="list-style-type: none"> - Starting with coffee. - Showing videos and giving feedback in groups. - Why should we use this strategy? - What’s the difference with now? 	January	3 hours

	elicit evidence of learning	<ul style="list-style-type: none"> - What works, how does it work and when does it not work? - Break with coffee/tea - Good and bad examples of the strategy, followed by a discussion. - Effect on students. - Discussion about how you would apply this in practice. - ‘Homework’: make a short video when you implement this strategy in classroom. - Quiz: testing teachers’ knowledge about both strategies (Kahoot). 		
4	Activating students as learning resources for one another	<ul style="list-style-type: none"> - Starting with coffee. - Showing videos and giving feedback in groups (fits this strategy). - Why should we use this strategy? - What’s the difference with now? - What works, how does it work and when does it not work? - Break with coffee/tea - Good and bad examples of the strategy, followed by a discussion. - Effect on students. - Discussion about how you would apply this in practice. - ‘Homework’: make a short video (max 3 minutes) in which you tell other teachers how you applied this strategy. 	March	3 hours
5	Activating students as owners of their own learning	<ul style="list-style-type: none"> - Starting with coffee. - Watching the short videos in groups. - Why should we use this strategy? - What’s the difference with now? - What works, how does it work and when does it not work? - Break with coffee/tea - Good and bad examples of the strategy, followed by a discussion. - Effect on students. - Discussion about how you would apply this in practice. - ‘Homework’: make a video in which you discuss the collaboration process with two students during a lesson (only show the highlights). 	April	3 hours
6	Providing feedback that moves the learner forward	<ul style="list-style-type: none"> - Starting with coffee. - Discuss the videos and provide feedback in groups. - Why should we use this strategy? - What’s the difference with now? - What works, how does it work and when does it not work? - Break with coffee/tea - Good and bad examples of the strategy during a role play of teachers. 	June	3 hours

-
- Effect on students.
 - Discussion about how you would apply this in practice.
 - ‘Homework’: fill in the questionnaire about the TDP. What did you learn?
 - Distribute exit tickets from the first session; discuss in groups: did you learn what you wanted to learn?
-

During this study, a combination of session 1 and session 3 for the TDP is elaborated and teachers and consultants participated in this TDP session. The session is adapted to the current situation in which the teachers did not know anything about formative and summative assessment. Thus, subtopics from the introduction and session 3 were combined into one session. Next to that, the TDP was online due to the COVID-19 virus. The PowerPoint slides of the TDP session are depicted in Appendix H.

Evaluation and reflection phase

During the evaluation and reflection phase the respondents, instruments, procedure and data analysis that answer the second research question are described. The sub questions from the second research question are answered: “How did primary education teachers experience the TDP?”, “How did the consultants experience the TDP?”, and “What are the recommendations for the TDP for primary education?” Next to that, the results of the focus groups are described.

Method

After consultants and teachers had participated in the TDP session, the TDP session was evaluated by two focus groups. In these focus groups questions to the teachers and consultants were asked verbally. In the focus group, relevancy and consistency of the TDP was measured. The method for the research question: “How do primary education teachers and consultants experience the TDP?” is described below. The following three sub questions are answered in the evaluation and reflection phase: “How did primary education teachers experience the TDP?”, “How did the consultants experience the TDP?”, and “What are the recommendations for a TDP for Expertis?”

Respondents

To answer the research question about how teachers experienced the TDP, a focus group was conducted among four primary education teachers and three consultants. The respondents that were participating in the focus group, were the same respondents that were participating in the needs assessment. The respondents were asked to respond to several statements.

Instruments

Focus group scheme

The focus group was about the satisfaction, organization and new knowledge and skills that participants generated during the TDP. The focus group was based on Guskey's (2002) theory about an effective evaluation. An example of a statement during the TDP for primary education teachers was: "I experienced the Teacher Development Program as useful". An example of a statement during the TDP for consultants was: "I think that the participants acquired the intended skills".

Procedure

The participants signed an informed consent at the beginning of the study. After the participants had participated in the TDP session, there was a focus group about the satisfaction, organization and new knowledge and skills that participants generated during the TDP. There were two focus groups, one focus group consisting of four primary education teachers and one focus group consisting of three consultants of Expertis. The focus groups answered statements about their experience with the TDP (See Appendix F and G). The statements were based on four critical levels that are included in an effective evaluation (Guskey, 2002) (See Theoretical Framework). First, statements about whether the teachers and consultants liked the TDP were asked. These statements were based on Guskey's theory (2002) about an effective evaluation. Then, statements that were about the knowledge and skills that teachers acquired were asked. These statements were also based on Guskey's theory (2002) about an effective evaluation. For consultants these statements were focused on whether they thought that teachers acquired new skills and knowledge. Third, statements about the organization of the TDP were asked to teachers and consultants. And finally, statements about teachers' use of new knowledge and skills were asked. For consultants, statements about whether the teachers would apply these new knowledge and skills in practice were asked. The focus groups were audio recorded. The focus group for both teachers and consultants started with an introduction, as recommended by Lederman (1990), in which the purpose and the ground rules of the focus group were mentioned. Then, several warm up questions were asked and next the questions containing all the relevant information were asked.

Data analysis

According to Baarda, Goede and Teunissen (2009), focus groups should be transcribed and then be labelled, because it should lead to a useful reduction of the collected data. A table was created from the collected data and this information was used to give the improvements to Expertis so that they can further develop the TDP. To check the inter-rater reliability of the focus groups, Cohen's Kappa was calculated based on two raters' encodings. The interrater agreement was 75%. Cohen's K was 0.49, which means that there is moderate level of agreement between the two raters.

Focus group results

A summary of the focus group results is shown in Table 7. Table 7 answers the sub questions: “How did primary education teachers experience the TDP?”, “How did the consultants experience the TDP?” and “What are the recommendations for a TDP for Expertis?” Table 7 shows both teachers’ and consultants’ positive comments, points of improvement and advice regarding to the designed TDP about AfL. The results are categorized into two sections: teachers experiences with the TDP and consultants experiences with the TDP. These two sub questions are categorized in the following sections: the positives, the points of improvement and advice from teachers and consultants of the TDP.

The results are linked to the theoretical framework (Guskey, 2002). The levels initial satisfaction, new knowledge and skills, organization’s advocacy, support, accommodation, facilitation and recognition, and degree and quality of implementation were measured. The aspects that belong to ‘advice’ cannot be linked to Guskey’s theory (2002), because these advices were aspects that teachers and consultants came with to improve the TDP. Nonetheless, they are used for improving the TDP. The number between brackets shows how many times the term was mentioned by teachers and/or consultants. For illustration, the term ‘prior knowledge’, which is defined as teachers having a lot of prior knowledge which does not fit the difficulty level of the TDP, was mentioned seven times as negative. To clarify what the codes mean, they are defined below. From the focus groups it appeared that teachers and consultants especially missed in-depth information about AfL and that the TDP did not fit teachers’ prior knowledge. The explanation below is ordered as in Table 7; first teachers’ positive comments, then teachers’ points of improvement, followed by consultants’ positive comments and consultants’ points of improvement and finally, both teachers’ and consultants’ advice. The advice is based on questions from the needs assessment and ways to correct the points of improvement.

Level 1 – kept teachers’ attention

By kept teachers’ attention is meant that the TDP kept teachers’ attention, they were not bored and almost all teachers told: “I did not experience the TDP as boring, time passed quickly”. Consultants confirmed this opinion: “I think teachers did learn something during TDP”. Kept teachers’ attention is linked to ‘initial satisfaction with the experience’, because the teacher answered this to the question whether he liked the TDP or not (Guskey, 2002).

Level 1 - combination info + videos

By combination info + videos, the combination of receiving information and showing videos is meant. Teachers and consultants indicated that they liked the variety between the two. Combination info + videos is linked to ‘initial satisfaction’, because it is an answer to the question whether they liked the TDP (Guskey, 2002).

Level 1 - varied working methods

Varied working methods means that different methods were used to make the TDP active, partly listening and partly doing assignments. Consultants indicated that they liked it that the TDP was not monotonous, due to the assignments that teachers had to do, videos that they had to watch and the statements that they had to answer. A quote of a consultant: “You had a nice variety of working methods, teachers did not have to listen all time”. Teachers did not mention this aspect. Varied working methods is linked to ‘initial satisfaction’, because consultants answered what they liked about the TDP (Guskey, 2002).

Level 1 - clear videos

By clear videos is meant that the videos were relevant for the topic of the TDP and that they were evident. The teachers thought the videos were clear, whereas the consultants thought the English language would be a barrier for the teachers. A quote of a teacher: “The videos you showed were clear and matched the goal of the TDP”. A quote of the consultants: “I think the videos were not appropriate, because they were in English”. Seen the fact that the target group, teachers, thought the videos were clear, this has not been changed in the TDP. Clear videos is linked to ‘initial satisfaction with the TDP’, because teachers indicated that the material did make sense (Guskey, 2002).

Level 2 - new information

New information means that teachers did receive information that they did not know yet. All teachers in the focus group indicated that they received some new information. A quote of a teacher: “I know more about formative assessment now”. A consultant also thought that teachers got new information. New information is linked to ‘new knowledge and skills of the participants’, because the participants learnt something new (Guskey, 2002).

Level 1 - clear assignments

Clear assignments means that the assignments were self-evident and did not raise any questions. Both teachers and consultants indicated that the assignments were clear. Consultants said: “I think the assignments were really clear and worthwhile”. Clear assignments are linked to initial satisfaction, because it answers the question whether the material made sense (Guskey, 2002).

Level 1 - responded correctly

Responded correctly means that the trainer was helpful and if there were problems, he/she helped. Consultants said that the trainer responded correctly to the question whether the trainer was knowledgeable and helpful, whereas teachers answered more in the direction of knowledge. Responded correctly is linked to initial satisfaction, because it answers the question whether the trainer was knowledgeable and helpful (Guskey, 2002).

Level 1 - listened well

Listened well means that the trainer listened well to questions or problems. The consultants indicated that the trainer listened well, while no teachers did say that. Listened well is linked to 'initial satisfaction', because it answers the question whether the trainer was knowledgeable and helpful (Guskey, 2002).

Level 3 - problems solved

Problems solved means that problems were quickly addressed. Both teachers and consultants said that small technical problems were quickly addressed. A quote from a teacher: "If a link of a video did not work, I saw you busy solving the problem". Problems solved is linked to 'organization's support', because it answers the question whether problems were addressed quickly and efficiently (Guskey, 2002).

Level 1 - being flexible

Being flexible means that the trainer was flexible when unexpected things happened. A teacher said that the trainer was flexible: "I think you were very flexible, because you did the TDP online due to the COVID-19 virus". Being flexible was not mentioned by consultants. Being flexible is linked to 'initial satisfaction', because it answers the question whether the leader was knowledgeable/helpful (Guskey, 2002).

Level 1 - enough knowledge

Enough knowledge means that the trainer had enough knowledge about FA. All teachers and consultants said that they did not doubt the trainer's knowledge about formative assessment. A quote from a teacher: "I do not doubt your knowledge about formative assessment, it would be nice if you give more concrete examples next time". A quote from a consultant: "I think you have enough knowledge about formative assessment, but next time you could tell more about formative assessment than you did now". Enough knowledge is linked to 'initial satisfaction', because it answers the question whether the leader was knowledgeable (Guskey, 2002).

Level 1 - time well spent

By time well spent, it is meant that teachers did not spill their time by participating in the TDP. Both teachers and consultants said that they thought teachers spent their time well. A quote from a teacher: "I think I spent my time well, apart from the information that we already knew". A quote from a consultant: "I am sure that teachers did learn something new and that they spent their time well". Time well spent is linked to 'initial satisfaction', because the question was whether teachers spent their time well (Guskey, 2002).

Level 2 - more awareness

More awareness means that teachers experience more consciousness about applying formative assessment in classroom. Consultants did not mention more awareness, but teachers did. A quote of a teacher: “I am more aware now about the way I ask questions and that I give students enough time to think”. More awareness is linked to ‘new knowledge and skills’, because teachers acquired another attitude towards formative assessment and more knowledge (Guskey, 2002).

Level 4 - applied new info

By applied new info is meant that teachers applied the information that they received in the TDP to their own practice. Teachers ten times mentioned that they applied the newly learned information: “I tried out not giving turns to students, but randomly choosing a name. This works very well for me, because the students are more active now”. Consultants did say: “I do not think teachers will try the new information in practice”. Thus, consultants differed in opinion from teachers. Applied new info is linked to ‘degree and quality of implementation’, because teachers tried their new knowledge in practice (Guskey, 2002).

Level 2 - basic knowledge FA

Basic knowledge FA means knowing the basic information about formative assessment. Consultants did not mention this, but teachers said that they have acquired the basic knowledge about formative assessment now, and that they hope that there will be a sequel in the future. Basic knowledge FA is linked to new knowledge and skills of the participants, because it answers the question whether participants acquired the intended knowledge and skills (Guskey, 2002).

Level 1 - lengthy

Lengthy means that the duration of the TDP took too long. Lengthy was mentioned once by a teacher: “The TDP took long”. The comment that the TDP took too long, was not mentioned by a consultant. Lengthy is linked to ‘initial satisfaction with the TDP’, because this teachers’ first comment on the TDP was that it took too long (Guskey, 2002).

Level 2 - prior knowledge

Prior knowledge means that teachers had more knowledge before the TDP than they learnt during the TDP. Prior knowledge was mentioned seven times by both teachers and consultants, teachers said: “many information that we received, was already known among us”, and consultants said: “the TDP was not adapted to the prior knowledge of teachers”. Teachers and consultants gave the advice to better research prior knowledge before the TDP. Prior knowledge is linked to ‘new knowledge and skills of the participants’, because in general the participants did not acquire new knowledge or skills (Guskey, 2002).

Level 2 - superficial

Superficial means that the TDP is not going into depth concerning the content. Both teachers and consultants indicated that the TDP was superficial. A quote from a teacher: “I think the TDP was superficial, I missed the depth in the TDP”, and a quote from a consultant: “I experienced the TDP as superficial, you explained several things but you did not go into depth”. This problem can be solved by explaining the concept formative assessment in more detail. Superficial is linked to ‘new knowledge and skills of the participants’, because the participants missed the depth and did not acquire a lot of new knowledge (Guskey, 2002).

Level 2 - no added value

No added value means that the TDP did not add anything to teachers’ professional development. No added value was mentioned by two consultants, not by teachers. Consultants said that: “I think the TDP had no added value for the teachers, because it did not fit their prior knowledge”. This problem could be solved by researching teachers’ prior knowledge before the TDP. No added value is linked to ‘new knowledge and skills of the participants’, because the participants did not acquire new skills according to the consultants (Guskey, 2002).

Level 3 - responding via chat

Responding via chat means that teachers had to answer questions via the Teams chat, due to the COVID-19 virus. One teacher said that she experienced difficulty with opening videos during the TDP, because the link did not work. This problem is solved during the whole TDP by not giving the TDP online, but showing the video to teachers and let them talk to each other. Consultants said that they did not prefer answering via the chat. Yet, answering via chat has yielded useful insights from teachers and consultants about the TDP. Responding via chat is related to ‘the organization’s facilitation’, because responding via chat has to do with organizational aspects of the TDP (Guskey, 2002).

Level 2 - more depth

More depth means diving deeper into a topic with the aim to acquire more knowledge about the topic, and was mentioned by all teachers and consultants. A quote from a consultant: “I think you can deepen the subject, for example by comparing the relationship between summative assessment and formative assessment in education now to what is desired”. A quote of a teacher: “I would like to go more into depth; I want to know what formative assessment entails, because I think it is more than ways of giving turns”. More depth is linked to ‘new knowledge and skills of the participants’, because there is a lack of skills and knowledge that participants learned (Guskey, 2002). For the next TDP, consultants and teachers advised to go into depth by *explaining in more detail*, for example the PowerPoint slide in which the model of Leahy, Leon, Thompson and Wiliam was explained, was very unclear to teachers. This problem could be addressed by explaining in more detail. Next to that,

consultants advised to *explain what the differences in effects* mean, that are in PowerPoint slide 9 (Appendix H), to get more an idea what effect sizes mean. Next to that, teachers advised to give a broader *definition of formative assessment*, because a teacher stated that: “now I only know that formative assessment is focused on the process, but what else is formative assessment?” Finally, consultants advised to explain to teachers’ the *importance of formative assessment* more clearly, e.g. by showing a video of how formative assessment is used in the Netherlands.

Level 2 - research prior knowledge

By research prior knowledge is meant that a trainer first has to research what teachers know before they participate in the TDP. This aspect was mentioned by both teachers and consultants. A quote from a teacher: “Maybe you should first check how far we are with formative assessment, because now we knew already a lot of the things you mentioned”. A consultant: “What did you do to research prior knowledge, because you could research this in more depth next time”. Research prior knowledge is linked to ‘new knowledge and skills of the participants’, because the participants did not acquire the intended knowledge and skills (Guskey, 2002). Therefore, the advice is to research prior knowledge beforehand next time.

Control of understanding

Control of understanding means that a trainer should check whether all participants understand what was just explained. Consultants mentioned control of understanding: “Maybe you should first check whether all teachers did understand what you explained, because in the model of Leahy, Leon, Thompson and Wiliam, teachers did not see that some key strategies had to be done by the teacher for example. Teachers did not mention anything about control of understanding. Control of understanding is not linked to Guskey’s theory (2002), because it does not answer questions that are related to this theory.

Definitions aspects effect on learning

Definitions aspects effect on learning means explaining what the aspects that are mentioned in PowerPoint slide 9 (Appendix H) mean. Consultants advised to explain the definitions of the aspects: “I think teachers cannot rank these aspects from what has the most effect to what has the least effect if they do not know what these aspects mean”. Teachers did not mention this. Definitions aspects effect on learning is not linked to Guskey’s theory (2002), because it does not answer questions that are related to this theory. Next time these definition aspects that have an effect on learning should be explained.

Sharing thoughts

Sharing thoughts means that teachers can share their thoughts with each other. This was mentioned by a consultant who said that: “After everything is normal again, it would be nice if teachers can share their thoughts about a video they just watched and talk about it”. Teachers also said that they would like to discuss with their colleagues, because they missed the interaction with their ‘peers’. Sharing thoughts is not linked to Guskey’s theory (2002), because it does not answer questions that are related to this theory, but it is an advice.

New materials

New materials means new materials that match with the topic of the next TDP session. A teacher said that: “I think there were sufficient materials for now, but for a new session it would be nice if there are more materials”. Consultants did not say anything about this. New materials is not linked to Guskey’s theory (2002), because it does not answer a question that is related to this theory, but it is an advice.

Tell from experience

Tell from experience means that concrete examples from own experience are used by the trainer. A teacher said: “I would like to have more concrete examples”. Consultants did not say anything about telling from experience. Consultants advised to ‘*model*’ as a trainer, which means that the trainer shows what he wants participants to do in classroom. A quote from a consultant: “As a trainer, I always try to model a strategy that teachers can use, often I exaggerate a bit when I am doing this”. Another consultant advised to use *imperfect examples*, so that you can have a discussion with teachers what they are doing wrong and why. These three examples are not linked to Guskey’s theory (2002), because they do not answer questions that are related to this theory, but it is an advice.


Table 7*Focus group results teachers and consultants*

Teachers		Consultants		<i>Advice</i>
<i>Positive</i>	<i>Negative</i>	<i>Positive</i>	<i>Negative</i>	
Kept teachers' attention*	Lengthy*	Kept teachers' attention*	Prior knowledge** (3)	More depth** (9)
Combination videos + info*	Prior knowledge** (4)	Combination videos + info*	Superficial** (1)	Explain in more detail (2)
Clear videos* (4)	Superficial** (2)	Varied working methods*	No added value** (2)	Explaining differences in effects
New information** (2)	Responding via chat***	New information** (2)	Responding via chat***	Definition FA (2)
Problems solved*** (4)		Clear assignment* (2)		Importance FA (3)
Being flexible*		Responded correctly*		Research prior knowledge** (3)
Enough knowledge*		Listened well*		Control of understanding
Time well spent*		Problem solving*** (2)		Definitions aspects effect on learning
More awareness ** (4)		Enough knowledge*		Sharing thoughts
Applied new info **** (4)		Time well spent*		New materials
Basic knowledge FA** (2)				Tell from experience
				Modelling (3)
				Imperfect examples

Note. 'negative' is defined as negative comments of teachers and consultants on the TDP, 'positive' is defined as positive comments of teachers and consultants on the TDP and 'advice' is defined as improvements for the TDP. *= initial satisfaction with the experience, **= new knowledge and skills of the participants, ***=the organization's advocacy, support, accommodation, facilitation and recognition, ****= degree and quality of implementation (Guskey, 2002).

Recommendations TDP

The focus group interviews shows that a number of aspects of the TDP can be improved. In Table 8 the improved PowerPoint slides are depicted. Table 8 answers the sub question: “What are recommendations for a TDP for Expertis?” The red marked words are the improvements. The new PowerPoint is shown to Expertis. Slides 1 to 27 and 38 can be used for the introduction session as depicted in Table 6.

Table 8. <i>Slides improved PowerPoint TDP.</i>	
<p>1.</p>  <p>→ word of welcome → turn microphones off → picture fits formative assessment (FA) because you work towards a goal</p>	<p>2.</p> <p>Agenda</p> <ul style="list-style-type: none"> <input type="checkbox"/> Wat weten we al? <input type="checkbox"/> Definitie Formatief toetsen <input checked="" type="checkbox"/> Relatie formatief en summatief toetsen in het onderwijs nu <input type="checkbox"/> Effect Formatief toetsen <input type="checkbox"/> Modellen Formatief Toetsen <input type="checkbox"/> Quiz: Wat doen we al? <input type="checkbox"/> Tips & Tricks <input type="checkbox"/> Hoe ziet succes eruit? <input type="checkbox"/> Afsluiting <p>→ what does the program look like? → breaks during TDP</p> <ul style="list-style-type: none"> ○ Fits the advice: more depth.
<p>3.</p> <p>Leerdoelen</p> <ul style="list-style-type: none"> • Aan het einde van de sessie weet ik wat Formatief Toetsen is • Aan het einde van de sessie weet ik hoe ik bewijs van het leren kan verzamelen tijdens de les. • Aan het einde van de sessie weet ik wat Formatief Toetsen mij kan brengen. <p>→ learning intentions</p> <ul style="list-style-type: none"> ○ Fits the advice: importance FA. 	<p>4.</p> <p>Wat weten we al?</p> <ul style="list-style-type: none"> • Welke 5 kaartjes geven het begrip 'formatief toetsen' het beste weer volgens jullie? • https://www.formatief-toetsen.nl/uc/fa7f8178201024b07350061456c01aed1e9605b416f8f00/kaartjes%20wat%20is%20en%20hoo%20rt%20bij%20formatief%20evalueren%20SLO.pdf • Jullie hebben 5 minuten om dit te overleggen. <p>→ prior knowledge: what five cards represent the concept 'FA' best? → talk with your neighbour and put the five cards on the table.</p> <ul style="list-style-type: none"> ○ Solves the problem: responding via chat. ○ Fits the advice: modelling, because the trainer uses ice lolly sticks.
<p>5.</p> <p>Relatie formatief en summatief toetsen in het onderwijs nu</p> <ul style="list-style-type: none"> • Toetsen zouden veel meer als feedbackinstrument kunnen worden gebruikt. • Volgens SLO (2014) blijkt dat dit nu nog niet zo is. 17% van de onderbouwdocenten in voortgezet onderwijs, gebruikt toetsresultaten als nulmeting om te weten wat de beginsituatie van een leerling is. 22% gebruikt de resultaten als tussenmeting om te bepalen wat de leerlingen nodig hebben om de gestelde doelen te bereiken. 84% van de docenten gebruikt toetsresultaten alleen als eindmeting om te bepalen wat een leerling kan. • Resultaten primair onderwijs onbekend. <p>→ relationship formative and summative assessment in education now.</p> <ul style="list-style-type: none"> ○ Fits the advice: more depth 	<p>6.</p> <p>Termen</p> <ul style="list-style-type: none"> • Formatief toetsen → het is geen toetsen • Formatieve evaluatie → het gaat verder dan evalueren • Assessment for learning gekozen → toetsen zet ons op het verkeerde been. Het gaat om het verzamelen van informatie over het leren van de leerlingen: discussies in de klas, vragen stellen, opdrachten, observaties, huiswerk. <p>→ what terms are used? → why do we not use 'formatief toetsen'.</p> <ul style="list-style-type: none"> ○ Fits the advice: Definition FA.

7.

Definitie assessment for learning

"voor zover bewijs over de prestaties van studenten wordt opgewekt, geïnterpreteerd en gebruikt door leraren, leerlingen of hun leeftijdsgenoten, om beslissingen te nemen over de volgende stappen in het onderwijs die waarschijnlijk beter of beter onderbouwd zijn dan de beslissingen die ze zouden hebben genomen bij gebrek aan bewijs dat was opgewekt" (William & Leahy, 2015).

→ definition assessment for learning
Fits the advice: definition FA

8.

Formatief en summatief toetsen

- Formatief toetsen: een kok die de soep proeft en zich afvraagt of er nog wat toegevoegd moet worden; is gefocust op het proces.
- Summatief toetsen: een gast die de soep proeft en zich afvraagt of de soep goed smaakt; is gefocust op een oordeel.

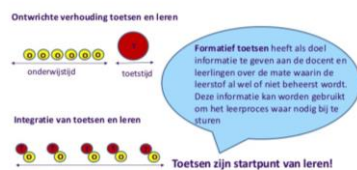


(Wolfrink, Doorman, Schildkamp & Vrachter, 2019)

→ formative assessment is focused on process, summative assessment is focused on a judgement

9.

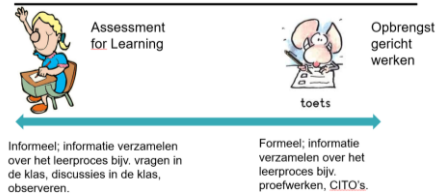
Assessment for Learning



- summative assessment: long time education then the test.
- formative assessment: first you got the test, then you adapt your education to results
 - Term 'assessment for learning' has changed due to confusion teachers

10.

Assessment for Learning



- formative assessment goes from informal formative assessment (Assessment for Learning) to formal formative assessment (yield-oriented working).
- Term 'assessment for learning' has changed due to confusion teachers

11.

Voor welke leeftijd? Bij welke vakken?

- Assessment for Learning is toe te passen bij alle leeftijden. Het werkt even goed bij 5 jaar oude kinderen, als bij 20 jarigen.
- Assessment for Learning is curriculum neutraal, het is compleet onafhankelijk van wat leerlingen leren. Het enige dat vereist is, is dat je duidelijk weet wat je leerlingen wilt leren (anders onbekend welk bewijs je verzamelt of hoe je leerlingen moet helpen).

- age assessment for learning
- subjects assessment for learning.
- Fits the advice: importance FA

12.

Wanneer werkt assessment for learning het best?

- Hoe korter de tijd tussen het verzamelen van bewijs van het leren en het gebruiken ervan om je instructie te verbeteren, hoe groter de mogelijke impact op het leren.

- when does assessment for learning result in biggest effect on learning?
- Fits the advice: importance FA

13.

Effect op het leren

Effect op het leren	Aantal onderzoeken	Rangorde
Formatieve evaluatie geven	30	
Jezelf op voorhand een cijfer geven/verwachtingen van leerlingen	209	?
Relatie leraar-leerling	229	
Metacognitieve strategieën	63	
Feedback	1310	
Klassengesprek	42	

→ Hattie researched 150 influences on student achievement. The basic elements of assessment for learning are also on that list.

14.

Effect op het leren

Effect op het leren	Aantal onderzoeken	Rangorde
Jezelf op voorhand een cijfer geven/verwachtingen van leerlingen	209	1
Formatieve evaluatie geven	30	2
Klassengesprek	42	4
Feedback	1310	5
Relatie leraar-leerling	229	6
Metacognitieve strategieën	63	7

(Hattie, 2014)

- Fits the advice: explaining why there is difference in effects.

→ Which influences do you think are most effective?
Rank order these influences from most effective (1) to least effective (6).

- Fits the advice: explaining definitions of effects.

15.

Effect op het leren

https://www.youtube.com/watch?v=5ysh_pv81W4&feature=youtu.be

Praat samen over wat je hiervan vindt
St Stephen's Primary school, Westminster.

(Clarke, 2016)

→ a video of a school in England that implemented assessment for learning
→ talk together with your neighbour about this video.

- Fits the advice: sharing thoughts

16.

Pauze



Break

17.

De ingrediënten van assessment for learning

Je krijgt een lijst met ingrediënten voor assessment for learning. Welke hebben jullie al op school en in de klas? Praat er samen over.



→ teachers receive a printed list of ingredients for formative assessment.
→ which one do you already use in school or in your classroom? Talk with your neighbour.
○ Fits the advice: more depth

18.

De ideale leercultuur creëren voor assessment for learning voorwaarden:

1. Een growth mindset ontwikkelen.
2. Metacognitieve strategieën integreren.
3. Leren in heterogene groepen.

→ requirements for creating a assessment for learning culture.
○ Fits the advice: more depth
○ Could be used when teachers are more advanced with AfL.

19.

Growth mindset ontwikkelen

Fixed mindset (prestatiegericht)	Growth mindset (leren)
Intelligentie is een vaststaand gegeven. Je moet alles overkanten!	Intelligentie kan groter worden. Ik wil meer leren!
Vermijdt uitdagingen	Grijpt uitdagingen met beide handen aan
Geeft snel op	Zet door bij tegenvallen
Je scoorten heeft geen zin	Je scoorten is de manier
Beïnvloedt een negatieve kritiek	Leert van kritiek
Kent waarschijnlijk vroeg tot sluitend en heeft niet alles in de hand	Bereikt een steeds hoger prestatieniveau

lg 2.1 Kennen van een kind en growth mindset

→ Niet langer leerlingen met hoogste cijfers naar voren komen bij de weekafsluiting, maar...
3 willekeurige leerlingen die mogen vertellen wat ze die week hebben bereikt.
→ Praat met leerlingen over wat intelligentie is. Zet deze beroemdheden op volgorde van intelligentie
<https://www.youtube.com/watch?v=VbUJhQWGMQ&feature=youtu.be> "Er is niet een manier waarop je slim kunt zijn".
→ Praten over verschillende mindsets met leerlingen, scenario's voorleggen, wat doen de lin?

→ examples how a growth mindset can be developed.
○ Fits the advice: more depth
○ Could be used when teachers are more advanced with AfL.

20.

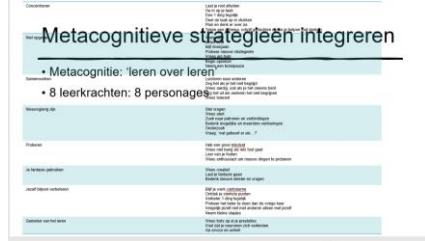
Voor jullie

Checklist voor leraren

- Heb je het concept van growth mindset onder de aandacht gebracht?
- Hangt er iets in je lokaal wat leerlingen wijst op een groei mindset? Is de groei mindset zichtbaar gemaakt in de weergegeven?
- Weeten de leerlingen dat leren draait om het leerproces en zien ze daarin kansen om te groeien?
- Vier je regelmatig successen op het gebied van:
 - leren
 - uitdagingen
 - moedige keuzes
 - fouten – en van je fouten leren, bijvoorbeeld 'fout van de week'?
- Herinner je je leerlingen regelmatig aan hun doelen en de volgende stap in het leerproces? Weeten zij waar ze de doelen kunnen vinden?
- Bekijk je – aan het eind van een onderwerp – de vragen die leerlingen vooraf hadden bedacht om te checken of alles begrepen hebben (vbz door gebruik te maken van een vragenwand)
- Vragen die je aan leerlingen kunt stellen:
 - Wat heeft je juf/leerster je verteld over het 'leerproces'/groeien
 - Wat betekent 'leren'?
 - Wat doet je juf/leerster om je te helpen met leren? – Wanneer praat je met je juf/leerster over uitdagingen?

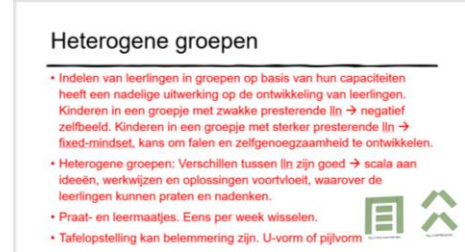
→ checklist for teachers for a growth mindset.
→ what do you already do in classroom? Discuss with your neighbour.
○ Fits the advice: more depth
○ Could be used when teachers are more advanced with AfL.

21.



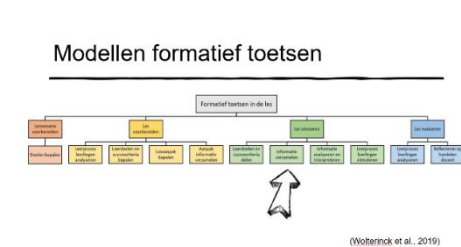
- integrating metacognitive strategies: definition.
- 8 learning powers (leer-krachten) for in class.
 - Fits the advice: more concrete examples
 - Could be used when teachers are more advanced with AfL.

22.



- why not make homogeneous groups
- why you should make heterogenous groups
- talk- and study buddies.
 - Fits the advice: more depth
 - Could be used when teachers are more advanced with AfL.

23.



- Wolterinck designed a model for formative assessment in which the different steps are distinguished
- this session is focused on implementing, especially gathering information

24.

Model

	Waar werkt de leerling naartoe?	Waar is de leerling nu?	Hoe komt de leerling naar de gewenste situatie?
Leraar	1. Verhelderen van leerdoelen en delen van criteria voor succes	2. Realiseren van effectieve discussies, taken en activiteiten die bewijs leveren voor leren	3. Feedback geven gericht op verder leren
Mede-leerling	Begrijpen en delen van leerdoelen en criteria voor succes	4. Activeren van leerlingen als belangrijke informatiebronnen voor elkaar	
Leerling	Begrijpen van leerdoelen en criteria voor succes	5. Activeren van leerlingen in het stimuleren van eigenaarschap over het eigen leren	

- Model Leahy, Leon, Thompson and Wiliam
- how to read model.
- three processes in formative assessment
- five strategies during formative assessment
- strategies have been worked out for teachers, students, peers
 - Fits the advice: explaining in more detail.

25.

Welke strategie?

<https://www.youtube.com/watch?v=49b7KqDypYQ&feature=youtu.be>

Kijkvraag: Bij welke strategieën past dit filmpje? Waarom?

Deel het met je buurman/buurvrouw

(Clarke, 2018)

- watch the video: which strategy fits the video best? Share with your neighbour.
 - Fits the advice: sharing thoughts.

26.

Welke strategie behandelen wij?

	Waar werkt de leerling naartoe?	Waar is de leerling nu?	Hoe komt de leerling naar de gewenste situatie?
Leraar	1. Verhelderen van leerdoelen en delen van criteria voor succes	2. Realiseren van effectieve discussies, taken en activiteiten die bewijs leveren voor leren	3. Feedback geven gericht op verder leren
Mede-leerling	Begrijpen en delen van leerdoelen en criteria voor succes	4. Activeren van leerlingen als belangrijke informatiebronnen voor elkaar	
Leerling	Begrijpen van leerdoelen en criteria voor succes	5. Activeren van leerlingen in het stimuleren van eigenaarschap over het eigen leren	

- what strategy are we dealing with?

27.

Quiz

Geef met een 'groen briefje' aan dat je het toepast in de praktijk.

Geef met een 'rood briefje' aan dat je dit nog niet toepast.

28.

Stelling 1

"Ik laat leerlingen niet meer hun vinger opsteken, maar ik kies ze willekeurig"

Leg uit aan je buurman/buurvrouw hoe je dit doet.

(William & Leahy, 2015)

<p>→ examples of strategy 2. Do you apply these in classroom? Green → I do apply, Red → I do not apply</p> <ul style="list-style-type: none"> ○ Solution for the negative: responding via chat. 	<p>→ My students do not raise their hand, I choose them at random</p> <p>→ discuss with your neighbour</p> <ul style="list-style-type: none"> ○ Fits the advice: sharing thoughts.
<p>29.</p> <p>Stelling 2</p> <hr/> <p>"Ik kies leerlingen aan de hand van beurtenstokjes, een app/programma op het digibord"</p> <p>Leg uit aan je buurman/buurvrouw wat je gebruikt hiervoor.</p> <p><small>(William & Leahy, 2015)</small></p> <p>→ I choose students by means of ice lolly sticks, an app/program on the whiteboard</p> <p>→ discuss with your neighbour</p> <ul style="list-style-type: none"> ○ Fits the advice: sharing thoughts. 	<p>30.</p> <p>Stelling 3</p> <hr/> <p>"Ik kies eerst een leerling en stel dan een vraag"</p> <p>Leg uit aan je buurman/buurvrouw waarom je dit doet.</p> <p><small>(William & Leahy, 2015)</small></p> <p>→ first I choose the student, then I ask the question</p> <p>→ explain to your neighbour why you do this.</p> <ul style="list-style-type: none"> ○ Fits the advice: sharing thoughts.
<p>31.</p> <p>Stelling 4</p> <hr/> <p>"Ik geef leerlingen een aantal seconden denktijd als ik een vraag stel"</p> <p>Leg uit aan je buurman/buurvrouw hoeveel tijd je leerlingen geeft.</p> <p><small>(William & Leahy, 2015)</small></p> <p>→ I implement wait-time in the questions that I ask students</p> <p>→ explain to your neighbour how much time you give students.</p> <ul style="list-style-type: none"> ○ Fits the advice: sharing thoughts. 	<p>32.</p> <p>Stelling 5</p> <hr/> <p>"Ik stel af en toe een vraag die de hele klas tegelijk beantwoordt, bijv. door wisbordjes te gebruiken of bij de kleuters rode/groene kaartjes"</p> <p>Leg uit aan je buurman/buurvrouw wat je precies doet.</p> <p><small>(William & Leahy, 2015)</small></p> <p>→ I use all-student response systems</p> <p>→ explain to your neighbour what you exactly do.</p> <ul style="list-style-type: none"> ○ Fits the advice: sharing thoughts.
<p>33.</p> <p>Tips & Tricks</p> <hr/> <p>Welke gebruik je al? Welke raad je anderen aan? Welke zou je het liefst willen uitproberen?</p> <ul style="list-style-type: none"> • Geen vingers opsteken, behalve or • Kies leerlingen willekeurig (ijsstokje) • 2 willekeurige leerlingen, dan 'vrijw' • Als een leerling het niet weet → "w extra informatie nodig" "bel-een-vri" • Interpreterend luisteren vs. evaluer • Gebruik cartoons: wie heeft gelijk? • ABCD kaartjes (kleuters: rood/groen exit tickets (anoniem/met naam), Al <p><small>(William & Leahy, 2015)</small></p> <p>→ examples of this strategy to use in practice</p> <p>→ discuss with your neighbour: which one you use, which one you would advise to others, which one you would like to try.</p> <ul style="list-style-type: none"> ○ Fits the advice: sharing thoughts and tell from experience 	<p>34.</p> <p>Tips en tricks deel 2</p> <hr/> <p>• Rode sticker → hulp nodig</p> <p>• Oranje sticker → bezig met leerdoel, beetje hulp nodig</p> <p>• Groene sticker → leerdoel behaald</p> <p>→ examples talk and study buddies</p> <p>→ examples reflecting on own work</p> <ul style="list-style-type: none"> ○ Fits the advice: tell from experience.

Conclusion and recommendations

The problem statement in this study was that at the University of Twente an AfL TDP has been developed for secondary education teachers. However, formative assessment is also an upcoming theme in primary schools, because it has enormous potential to change teaching and learning with the aim to increase student achievement (Earl, 2012). Therefore, the aim of this study was to redesign the TDP for secondary education about AfL for primary education teachers. The two research questions for this study were: “What does a TDP about AfL for primary education look like?” and “How do primary education teachers and consultants experience the TDP?”

To answer the first research question, a needs assessment interview has been conducted among primary education teachers and consultants with the aim to get insight in their needs and wishes with regards to a TDP about AfL. From the needs assessment interviews it appeared that teachers and consultants wanted to have information about the effect of AfL, what AfL entails, the link between theory and practice and receive useful tools for implementing AfL in practice. They also wanted that the TDP is active, provides varied working methods and possibilities to cooperate. Ideally, according to teachers and consultants, the TDP takes about one to three hours, contains three to eight meetings and is spread over three months to one year. The fact that some teachers preferred a TDP to be spread over three months, surprised the researcher, because most teachers indicated that they wanted the TDP to be spread over one year, with the idea that they have more time to implement the strategies in the classroom.

The answer to the first research question is that the whole TDP is based on the five key strategies of Wiliam and Thompson (2008), that have proven effective, and developed according to the 4CID-model. The whole TDP consists of six sessions, from which the introduction session, an introduction to AfL, is completely developed and the final design is shown in Table 6. The answer to the second research question is that overall teachers and consultants were positive about the TDP, but they missed depth. Teachers especially liked the varied working methods that were used in the first session of the TDP, for example the statements that they had to answer.

A point of improvement was that the TDP did not fit teachers' prior knowledge, teachers knew more than expected, and therefore teachers and consultants advised to research prior knowledge beforehand and go more into depth during the TDP, they wanted more information about AfL, for example what requirements are necessary for implementing AfL in classroom. Therefore, the final design, as depicted in Table 8, contains more in-depth information about AfL. Timperley (2008) confirms that prior knowledge needs to be researched before the TDP by saying that it is important to consider teachers' prior knowledge of curriculum and assessment and how they view existing practice. Although teachers in the needs assessment indicated that they did not know what AfL means, during the TDP it appeared that they already knew various aspects of AfL.

The practical relevance of this study is that a global schedule for the whole TDP has been designed and that the first session of the TDP has been completely developed and has been formatively evaluated and adapted. Next to that, Expertis will further develop the other sessions of the TDP and use them in practice. The scientific relevance of this study was that Guskey's theory (2002) about evaluating a TDP worked well; it is clear now what aspects of the TDP about formative assessment could be improved.

Discussion

Implications for practice

This study has implications for teachers' practice. First, teachers that participated in the TDP can use their acquired knowledge in the classroom now. Secondly, if a follow-up session of the TDP is developed, the teachers that participated in this TDP can participate in the follow-up sessions as well. This study also has implications for consultants' practice. An implication is that the introduction session of the TDP for primary education teachers about AfL could be used in practice by Expertis. Although, first the other sessions of the TDP should be developed.

Limitations and implications for further research

There are some comments to be made in this study, namely that for this study opinions about the design for the TDP are based on nine primary education teachers and three consultants. Further research could focus on more participants to see how they experience the TDP. Also, further (design) research could be focused on developing, trying and evaluating more sessions of this TDP.

Secondly, when the TDP was developed, the prior knowledge of teachers about AfL has not sufficiently been taken into account. Although teachers had been asked how they understood formative assessment and what they were currently doing in the classroom with formative assessment, this was apparently not enough. This could be because of the fact that they did not know the concept 'formative assessment', but they did know aspects that are commonly used when applying formative assessment. So, the questions that were asked during the needs assessment were not clear enough, because they probably did not know what is meant by formative assessment. In a new study, prior knowledge of teachers should be researched more extensively before a TDP is developed, for example by observing the teachers in the classroom.

Finally, due to the COVID-19 virus, the TDP could not be presented live in person, but had to be done online. The improvements that have been made in the TDP are aimed at providing online TDP. There might be differences when the TDP is held in person. Although some improvements that have been made do focus on a TDP in person, such as the green and red notes that are used during the TDP. According to Salter (2003), moving a TDP online may decrease rather than increase access. Nonetheless, most of the techniques that are used in a good TDP, are applicable regardless of whether the learning environment is online or face-to-face (Salter, 2003).

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Appendix

Appendix A

E-mail to teachers primary school

Dag collega's ,

Ik ben Karlijn Hegeman en ik werk als leerkracht bij Consent. Daarnaast studeer ik de master Onderwijskunde aan de Universiteit Twente. Ik ben momenteel bezig met mijn afstudeeronderzoek bij Expertis. Er is door de Universiteit Twente een training over formatief toetsen ontwikkeld voor het voortgezet onderwijs die ik zal aanpassen voor leerkrachten in het basisonderwijs.

Het doel van formatief toetsen is het leren van leerlingen bevorderen door hun resultaten te gebruiken om hun leren te verbeteren. Het kan op een informele manier, Assessment for Learning genoemd, waarbij informatie wordt verzameld over het leerproces (bvb door wisbordjes, observeren) of op een formele manier, waarbij toetsen worden gebruikt om informatie te verzamelen.

In de training waar u naartoe kunt, wordt vooral gefocust op de informele manier van toetsen. Er zullen handige tips worden gegeven over hoe je Assessment for Learning kunt toepassen in de klas en daarmee het leren van de leerlingen kunt bevorderen.

Op het moment dat u wilt meedoen aan mijn afstudeeronderzoek, zal er een interview plaatsvinden met ongeveer drie leerkrachten van uw school over wat zij belangrijk vinden in een training over Assessment for Learning. Deze interviews zullen waarschijnlijk plaatsvinden in februari of maart. Op basis van de behoeften van leerkrachten, kan de training aangepast worden.

Vervolgens zal de training gegeven worden. Het is nog onbekend hoe deze er precies uit ziet, maar waarschijnlijk is het één bijeenkomst waarin een onderdeel van Assessment for Learning besproken zal worden. Leerkrachten leren in de training hoe zij Assessment for Learning kunnen toepassen in de klas en daarmee het leren van de leerlingen kunnen bevorderen. De training zal ongeveer in april/mei plaatsvinden. Een precieze datum volgt nog.

Ten slotte zal er met ongeveer drie leerkrachten een interview plaatsvinden waarin de training geëvalueerd wordt door hen.

Zoals eerder genoemd, kan de training over Assessment for Learning ervoor zorgen dat leerling resultaten omhoog gaan door de tips toe te passen die worden gegeven in de training.

Op het moment dat u en uw collega's belangstelling hebben voor deelname aan deze training, kunt u een email sturen naar K.Hegeman@consentscholen.nl

De hierboven staande data kunnen nog veranderen in verband met het onderzoeksproces.

Met vriendelijke groet,

Karlijn Hegeman

Appendix B

Informed consent primary teachers and consultants

Informatieblad voor onderzoek 'Assessment for Learning in primary education'

Doel van het onderzoek

Dit onderzoek wordt geleid door Karlijn Hegeman.

Het doel van dit onderzoek is om de training over formatief toetsen voor docenten in het voortgezet onderwijs aan te passen voor docenten in het primair onderwijs. De onderzoeksgegevens zullen worden gebruikt om de behoeften van leerkrachten uit het primair onderwijs in beeld te brengen.

Hoe gaan we te werk?

U neemt deel aan een onderzoek waarbij we informatie zullen vergaren door:

- U te interviewen en uw antwoorden op te nemen via een audio-opname. Er zal ook een transcript worden uitgewerkt van het interview. Een voorbeeld van een interviewvraag is: "Wat wordt er gedaan in uw klas op het gebied van formatief toetsen?"
- U stellingen voor te leggen over wat u van de training vond en uw antwoorden op te nemen via een audio-opname. Er zal ook een transcript worden uitgewerkt van het gesprek.

Potentiële risico's en ongemakken ○ Er zijn geen fysieke, juridische of economische risico's verbonden aan uw deelname aan deze studie. U hoeft geen vragen te beantwoorden die u niet wilt beantwoorden. Uw deelname is vrijwillig en u kunt uw deelname op elk gewenst moment stoppen.

Vergoeding

U ontvangt voor deelname aan dit onderzoek geen vergoeding.

Vertrouwelijkheid van gegevens

Wij doen er alles aan uw privacy zo goed mogelijk te beschermen. Er wordt op geen enkele wijze vertrouwelijke informatie of persoonsgegevens van of over u naar buiten gebracht, waardoor iemand u zal kunnen herkennen.

Voordat onze onderzoeksgegevens naar buiten gebracht worden, worden uw gegevens zoveel mogelijk geanonimiseerd, tenzij u in ons toestemmingsformulier expliciet toestemming heeft gegeven voor het vermelden van uw naam, bijvoorbeeld bij een quote.

In een publicatie zullen anonieme gegevens of pseudoniemen worden gebruikt. De audio-opnamen, formulieren en andere documenten die in het kader van deze studie worden gemaakt of verzameld, worden opgeslagen op een vergrendelde telefoon. De onderzoeksgegevens worden bewaard voor een periode van vijf maanden. Uiterlijk na het verstrijken van deze termijn zullen de gegevens worden verwijderd of worden geanonimiseerd zodat ze niet meer te herleiden zijn tot een persoon. De onderzoeksgegevens worden indien nodig (bijvoorbeeld voor een controle op wetenschappelijke

integriteit) en alleen in anonieme vorm ter beschikking gesteld aan personen buiten de onderzoeksgroep.

Tot slot is dit onderzoek beoordeeld en goedgekeurd door de ethische commissie van de faculteit BMS.

Vrijwilligheid

Deelname aan dit onderzoek is geheel vrijwillig. U kunt als deelnemer uw medewerking aan het onderzoek te allen tijde stoppen, of weigeren dat uw gegevens voor het onderzoek mogen worden gebruikt, zonder opgaaf van redenen. Het stopzetten van deelname heeft geen nadelige gevolgen voor u of de eventueel reeds ontvangen vergoeding.

Als u tijdens het onderzoek besluit om uw medewerking te staken, zullen de gegevens die u reeds hebt verstrekt tot het moment van intrekking van de toestemming in het onderzoek gebruikt worden.

Wilt u stoppen met het onderzoek, of heeft u vragen en/of klachten? Neem dan contact op met de onderzoeksleider.

Karlijn Hegeman (k.a.t.hegeman@student.utwente.nl)

Voor bezwaren met betrekking tot de opzet en of uitvoering van het onderzoek kunt u zich ook wenden tot de Secretaris van de Ethische Commissie van de faculteit Behavioural, Management and Social Sciences op de Universiteit Twente via ethicscommittee-bms@utwente.nl. Dit onderzoek wordt uitgevoerd vanuit de Universiteit Twente, faculteit Behavioural, Management and Social Sciences. Indien u specifieke vragen hebt over de omgang met persoonsgegevens kun u deze ook richten aan de Functionaris Gegevensbescherming van de UT door een mail te sturen naar dpo@utwente.nl.

Tot slot heeft u het recht een verzoek tot inzage, wijziging, verwijdering of aanpassing van uw gegevens te doen bij de Onderzoeksleider.

Door dit toestemmingsformulier te ondertekenen erken ik het volgende:

1. Ik ben voldoende geïnformeerd over het onderzoek door middel van een separaat informatieblad. Ik heb het informatieblad gelezen en heb daarna de mogelijkheid gehad vragen te kunnen stellen. Deze vragen zijn voldoende beantwoord.
2. Ik neem vrijwillig deel aan dit onderzoek. Er is geen expliciete of impliciete dwang voor mij om aan dit onderzoek deel te nemen. Het is mij duidelijk dat ik deelname aan het onderzoek op elk moment, zonder opgaaf van reden, kan beëindigen. Ik hoef een vraag niet te beantwoorden als ik dat niet wil.

Naast het bovenstaande is het hieronder mogelijk voor verschillende onderdelen van het onderzoek specifiek toestemming te geven. U kunt er per onderdeel voor kiezen wel of geen toestemming te geven. Indien u voor alles toestemming wil geven, is dat mogelijk via de aanvinkbox onderaan de stellingen.

3. Ik geef toestemming om de gegevens die gedurende het onderzoek bij mij worden verzameld te verwerken zoals is opgenomen in het bijgevoegde informatieblad.	JA <input type="checkbox"/>	NEE <input type="checkbox"/>
4. Ik geef toestemming om tijdens het interview opnames (geluid) te maken en mijn antwoorden uit te werken in een transcript.	<input type="checkbox"/>	<input type="checkbox"/>
5. Ik geef toestemming om de bij mij verzamelde onderzoeksdata te bewaren en te gebruiken voor toekomstig onderzoek en voor onderwijsdoeleinden.	<input type="checkbox"/>	<input type="checkbox"/>
Ik geef toestemming voor alles dat hierboven beschreven staat.	<input type="checkbox"/>	

Naam Deelnemer:

Naam Onderzoeker:

Handtekening:

Handtekening:

Datum:

Datum:

Appendix C

Interview Primary education teachers

1. Waar denkt u aan bij formatief toetsen?

Het doel van formatief toetsen is het leren van de leerlingen bevorderen door toetsinformatie te gebruiken om sturing te geven aan het onderwijsleerproces van de leerlingen. Het kan op een informele manier – assessment for learning – waarbij je informatie verzamelt in de klas over het leerproces, door bijvoorbeeld vragen die worden gesteld in de klas, wisbordjes, observeren; ook kan het op een formele manier – opbrengstgericht werken genoemd – waarbij je toetsen of externe toetsen gebruikt om informatie te verzamelen over het leerproces van de leerlingen.

2. Wat wordt er gedaan in uw klas op het gebied van formatief toetsen?
3. Zijn er schoolbrede afspraken op het gebied van formatief toetsen? Zo ja, welke zijn dit?
4. Hebt u het idee dat u de ruimte krijgt om formatief toetsen toe te passen in de klas? Waarom wel/niet?
5. Wat vindt u lastig als het gaat om formatief toetsen?
6. Wat zou u nog meer willen leren over formatief toetsen?
7. Wanneer is een training volgens u nuttig?
8. Hoe lang moet volgens u een training zijn (bvb halfjaar, jaar)?
9. Hoeveel trainingssessies moeten er dan volgens u zijn?
10. Hoe lang moet volgens u een sessie zijn (uren)?
11. Hoe lang zou een training volgens u moeten zijn op de woensdagmiddag (tijden)?
12. Wat zou u me aanraden om zeker toe te voegen in een training over formatief toetsen voor basisschooldocenten (bvb werkvormen)?

Appendix D

Interview consultants of Expertis

1. Waar denkt u aan bij formatief toetsen?

Het doel van formatief toetsen is het leren van de leerlingen bevorderen door toetsinformatie te gebruiken om sturing te geven aan het onderwijsleerproces van de leerlingen. Het kan op een informele manier – assessment for learning – waarbij je informatie verzamelt in de klas over het leerproces, door bijvoorbeeld vragen die worden gesteld in de klas, wisbordjes, observeren; ook kan het op een formele manier – opbrengstgericht werken genoemd – waarbij je toetsen of externe toetsen gebruikt om informatie te verzamelen over het leerproces van de leerlingen.

2. Wat vindt u een aspect van formatief toetsen dat leraren zeker moeten kennen?
3. Zijn er vanuit Expertis materialen gemaakt voor leerkrachten over formatief toetsen (boeken etc.)?
4. Wat is volgens u het verschil tussen een training over formatief toetsen voor basisschool leerkrachten en middelbare school leerkrachten?
5. Wanneer is een training volgens u nuttig?
6. Hoe lang moet een training volgens u duren (Hier wordt een tijdsperiode gevraagd, bijvoorbeeld een jaar, twee jaar of een half jaar o.i.d.)?
7. Hoe lang moet een sessie volgens u duren (Hier wordt het aantal uren gevraagd dat één bijeenkomst van de training zou moeten duren)?
8. Welke materialen vindt u belangrijk tijdens een training?
9. Welke aspecten vindt u dat er in een training moeten zitten (bv werkvormen)?
10. Over welke vaardigheden moet een trainer volgens u beschikken om een training te geven aan basisschooldocenten over formatief toetsen?
11. Wat zou u me aanraden om zeker toe te voegen in een training over formatief toetsen voor basisschooldocenten (bv. een bepaald onderdeel van formatief toetsen of een manier van training geven of iets anders) ?

Reflectie checklist voor strategie 2: effectieve discussies, taken en activiteiten ontwerpen die het bewijs van het leren laten zien van de leerlingen.

	Ik doe dit niet	Ik doe dit soms	Dit doe ik automatisch	Ik zou iemand er zelfs mee kunnen helpen
Ik kom er tijdens de les (minimaal 1x) achter wat elke leerling weet door een 'alle leerlingen systeem'* te gebruiken.				
Ik zorg ervoor dat alle leerlingen tijd hebben om na te denken over een antwoord.				
Ik stel de vraag voordat ik kies wie de vraag beantwoordt.				
Op het moment dat een leerling het antwoord niet weet, bied ik hem/haar de mogelijkheid om na te denken. Even later kom ik terug bij die leerling.				
De leerlingen stellen hun eigen vragen die vervolgens beantwoord worden door andere leerlingen.				
Ik heb 'geen vingers' als standaard beleid in de klas.				
Ik gebruik stellingen in plaats van vragen om diepere antwoorden aan te moedigen.				
Ik gebruik exit kaarten of een andere manier om uitgebreide antwoorden te verzamelen van alle studenten.				
Ik toets de leerlingen, kijk naar hun antwoorden en daarna spijk ik de gebieden waarmee de leerlingen moeite hebben bij, voordat ik verder ga.				
Andere technieken die ik gebruik voor deze strategie om het leren van de leerlingen te verbeteren.				

* een alle leerlingen systeem zijn bijvoorbeeld de ABCD kaartjes, de ABCD hoeken of het gebruik maken van 'vingerstemmen'.

Lesvoorbereiding

De techniek die ik ga gebruiken:
Waarom ik deze ga gebruiken en de resultaten die ik verwacht:
Groep en datum:
Vorbereiding voor de les:
Wat ik op probeer te letten:
Reflectie op hoe de techniek werkte, inclusief bewijs om mijn beweringen te ondersteunen:
Wat ik de volgende keer ga doen:

Observatieblad

Datum en groep die ik observeer:
Naam van degene die observeert:
Techniek die ik ga observeren:
Waar ik wil dat op gelet wordt tijdens deze les:
Commentaar van degene die observeert:
Reflectie op het lezen van het commentaar op mijn les en na het erover gehad te hebben met degene die mij observeerde:
Wat ik de volgende keer ga doen:

Leerling enquête (basisschool, midden/bovenbouw)

Naam:					Datum:
<i>Kruis aan wat je vond van deze les.</i>					
Ik vond dat de les ging	Heel langzaam	Langzaam	Niet te snel, niet te langzaam	Snel	Heel snel
Ik vond de les...	Heel makkelijk	Makkelijk	Niet moeilijk en niet makkelijk	Een beetje moeilijk	Heel moeilijk
Ik vond de les...	Heel saai	Een beetje saai	Niet saai, maar ook niet leuk	Best leuk	Heel leuk!
Ik snap nu ... van <i>onderwerp</i>	Niks	Een klein beetje	Best veel	Veel	
Ik heb ... geleerd deze les	Niks	weinig	een aantal dingen	Best veel	Heel veel

Feedback aan de leerkracht (geen naam erop schrijven)

	Nooit	Soms	Vaak
Mijn juf/meester vertelt mij wat ik moet doen als ik een opdracht krijg.			
Ik vergelijk opdrachten zonder namen om te begrijpen hoe een goede opdracht eruit ziet.			
Mijn juf/meester vraagt mij wat ik heb geleerd aan het einde van de les.			
Mijn juf/meester kiest iemand niet zelf om een beurt te geven.			
Mijn juf/meester wacht drie seconden nadat hij/zij de vraag heeft gesteld.			
Mijn juf/meester vraagt ons wel eens om allemaal tegelijk het antwoord op de vraag op te schrijven/ te zeggen.			
Als mijn juf/meester een toets heeft nagekeken, begrijp ik wat ik fout heb gedaan.			
Ik kijk het werk van mijn klasgenoten wel eens na.			
Ik werk wel eens met andere kinderen in een groepje.			

Mijn leer dagboek

Naam: _____ Vak: _____ Datum: _____

Ik zou meer geleerd
hebben als.....

Ik was verrast door.....

Ik vond dit het interessantst:

1 ding wat ik geleerd heb
is:

Het belangrijkste dat ik in deze
les geleerd heb is:

Ik wil meer weten
over.....

Ik weet nog niet zo goed of..

Wat ik het leukste vond in
deze les was:

Appendix F

Focus group teachers

The aim of the focus group is to hear your opinions about the TDP and whether you experienced the TDP as useful. The focus group will be audio recorded. I give you a statement and you can talk about that statement and how you experienced it. When you want to say anything, you can tell the others and the ground rule is that only one person is talking; otherwise it becomes complicated to hear you during an online session. I will start with the first statement:

1. I liked the TDP.
2. I have the idea that I spent my time well.
3. I experienced the TDP as useful.
4. I think the leader was knowledgeable about the topic.

If we look back to the goals we had at the beginning of the session,

5. Did you acquire the intended knowledge and skills?
6. I think sufficient resources were made available.
7. Problems were addressed quickly and efficiently.
8. I think I can apply the new knowledge and skills in classroom now.

Appendix G

Focus group consultants

The aim of the focus group is to hear your opinions about the TDP and whether you think that teachers experienced the TDP as useful. The focus group will be audio recorded. I give you a statement and you can talk about that statement and how you experienced it. When you want to say anything, you can tell the others and the ground rule is that only one person is talking; otherwise it becomes complicated to hear you during an online session. I will start with the first statement:

1. I liked the TDP.
2. I have the idea that teachers spent their time well.
3. I think teachers experiences the TDP as useful.
4. I think the leader was knowledgeable about the topic.
5. I think teachers acquired the intended knowledge and skills.
6. I think sufficient resources were made available.
7. I think problems were addressed quickly and efficiently.
8. I think teachers can apply the new knowledge and skills in classroom now.

Appendix H

Slides PowerPoint TDP.

1.



- word of welcome
- turn microphones off
- picture fits formative assessment (FA) because you work towards a goal

2.

Agenda

- ☐ Wat weten we al?
- ☐ Definitie Formatief toetsen
- ☐ Effect Formatief toetsen
- ☐ Modellen Formatief Toetsen
- ☐ Quiz: Wat doen we al?
- ☐ Tips & Tricks
- ☐ Hoe ziet succes eruit?
- ☐ Afsluiting

- what does the program look like?
- breaks during TDP

3.

Leerdoelen

- Aan het einde van de sessie weet ik wat Formatief Toetsen is
- Aan het einde van de sessie weet ik hoe ik bewijs van het leren kan verzamelen tijdens de les.

- learning intentions

4.

Wat weten we al?

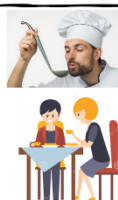
- Welke 5 kaartjes geven het begrip 'formatief toetsen' het beste weer volgens jullie?
- <https://www.formatief-toetsen.nl/uc/fa7f8178201024b07350061456c01aed1e9605b416f8f00/kaartjes%20wat%20is%20en%20hoort%20bij%20formatief%20evalueren%20SLO.pdf>
- Jullie hebben 5 minuten om dit te overleggen in de groepschat van Teams.

- prior knowledge: what five cards represent the concept 'FA' best?
- type answers in 'Teams' chat

5.

Formatief en summatief toetsen

- Formatief toetsen: een kok die de soep proeft en zich afvraagt of er nog wat toegevoegd moet worden; is gefocust op het proces.
- Summatief toetsen: een gast die de soep proeft en zich afvraagt of de soep goed smaakt; is gefocust op een oordeel.

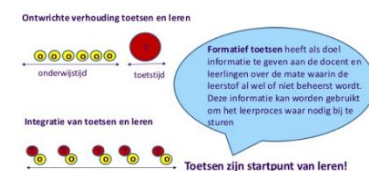


(Walterinck, Poortman, Schildkamp & Visscher, 2019)

- formative assessment is focused on process,
- summative assessment is focused on a judgement

6.

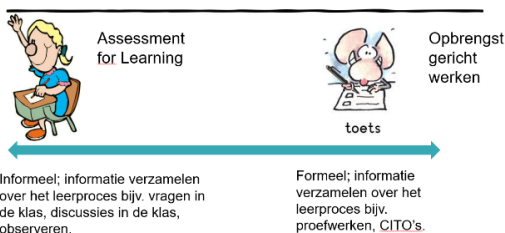
Formatief toetsen



- summative assessment: long time education then the test.
- formative assessment: first you got the test, then you adapt your education to results

7.

Formatief toetsen



8.

Effect op het leren

Effect op het leren	Aantal onderzoeken	Rangorde
Formatieve evaluatie geven	30	
Jezelf op voorhand een cijfer geven/verwachtingen van leerlingen	209	?
Relatie leraar-leerling	229	
Metacognitieve strategieën	63	
Feedback	1310	
Klassengesprek	42	

→ formative assessment goes from informal formative assessment (Assessment for Learning) to formal formative assessment (yield-oriented working).

→ Hattie researched 150 influences on student achievement. The basis elements of formative assessment are also on that list.
→ Which influences do you think are most effective? Rank order these influences from most effective (1) to least effective (6).

9.

Effect op het leren

Effect op het leren	Aantal onderzoeken	Rangorde
Jezelf op voorhand een cijfer geven/verwachtingen van leerlingen	209	1
Formatieve evaluatie geven	30	2
Klassengesprek	42	4
Feedback	1310	5
Relatie leraar-leerling	229	6
Metacognitieve strategieën	63	7

(Hattie, 2014)

→ formative evaluation and feedback are the same
→ metacognitive strategies are the basis for formative assessment because they belong to a growth mindset culture.

10.

Effect op het leren

https://www.youtube.com/watch?v=5ysh_pv81W4&feature=youtu.be

St Stephen's Primary school, Westminster.

(Clarke, 2016)

→ a video of a school in England that implemented formative assessment

11.

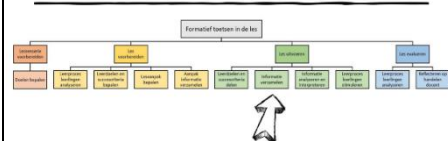
Pauze



Break

12.

Modellen formatief toetsen



(Wolterinck et al., 2019)

→ Wolterinck designed a model for formative assessment in which the different steps are distinguished
→ this session is focused on implementing, especially gathering information

13.

Model

	Waar werkt de leerling naartoe?	Waar is de leerling nu?	Hoe komt de leerling naar de gewenste situatie?
Leraar	1. Verhelderen van leerdoelen en delen van criteria voor succes	2. Realiseren van effectieve discussies, taken en activiteiten die bewijs leveren voor leren	3. Feedback geven gericht op verder leren
Mede-leerling	Begrijpen en delen van leerdoelen en criteria voor succes	4. Activeren van leerlingen als belangrijke informatiebronnen voor elkaar	
Leerling	Begrijpen van leerdoelen en criteria voor succes	5. Activeren van leerlingen in het stimuleren van eigenaarschap over het eigen leren	

Figuur 1: Vijf strategieën van formatief evalueren (Leahy, Lyon, Thompson & Wiliam, 2005).

- Model Leahy, Leon, Thompson and Wiliam
- three processes in formative assessment
- five strategies during formative assessment
- strategies have been worked out for teachers, students, peers

14.

Welke strategie?

<https://www.youtube.com/watch?v=49b7KqDypYQ&feature=youtu.be>

Kijkvraag: Bij welke strategieën past dit filmpje? Waarom?

(Clarke, 2016)

- watch the video: which strategy fits the video best?

15.

Welke strategie behandelen wij?

	Waar werkt de leerling naartoe?	Waar is de leerling nu?	Hoe komt de leerling naar de gewenste situatie?
Leraar	1. Verhelderen van leerdoelen en delen van criteria voor succes	2. Realiseren van effectieve discussies, taken en activiteiten die bewijs leveren voor leren	3. Feedback geven gericht op verder leren
Mede-leerling	Begrijpen en delen van leerdoelen en criteria voor succes	4. Activeren van leerlingen als belangrijke informatiebronnen voor elkaar	
Leerling	Begrijpen van leerdoelen en criteria voor succes	5. Activeren van leerlingen in het stimuleren van eigenaarschap over het eigen leren	

Figuur 1: Vijf strategieën van formatief evalueren (Leahy, Lyon, Thompson & Wiliam, 2005).

- what strategy are we dealing with?

16.

Quiz

Geef met een 'ja' aan in de chat dat je het toepast in de praktijk.

Geef met een 'nee' aan in de chat dat je dit nog niet toepast.

Normaalgesproken met rode en groene briefjes.

- examples of strategy 2. Do you apply these in classroom? Yes → I do apply, No → I do not apply

17.

Stelling 1

"Ik laat leerlingen niet meer hun vinger opsteken, maar ik kies ze willekeurig"

(Wiliam & Leahy, 2015)

- My students do not raise their hand, I choose them at random

18.

Stelling 2

"Ik kies leerlingen aan de hand van beurtstokjes, een app/programma op het digibord"

(Wiliam & Leahy, 2015)

- I choose students by means of ice lolly sticks, an app/program on the whiteboard

19.

Stelling 3

"Ik kies eerst een leerling en stel dan een vraag"

(Wiliam & Leahy, 2015)

- first I choose the student, then I ask the question

20.

Stelling 4

"Ik geef leerlingen een aantal seconden denktijd als ik een vraag stel"

(Wiliam & Leahy, 2015)

- I implement wait-time in the questions that I ask students

→ I use all-student response systems

→ examples of this strategy to use in practice

→ Watch the video. You see two ways of choosing names, which?

→ What advice do you give this teacher as regards giving turns?

→ documents to use: peer observation sheet, lesson preparation sheet, learning logs, reflection form, student feedback form.

→ questions?

→ exit ticket: type in 'Teams': one thing that I do differently tomorrow; two questions that I would like to be answered; three things that I learned this lesson.