Assesing Differentiation in All Phases of Teaching

ADAPT

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We highly welcome researchers and institutions around the world to collaborate with us and work with the ADAPT instrument. Please do not hesitate to contact us for more information about the use of ADAPT and possible (inter)national collaborations.

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Introduction

The aim of differentiated instruction is to adapt education to the students' diverse educational needs (e.g. Deunk et al, 2015), mostly their current level of knowledge and skills (Tomlinson et al., 2003). Roy et al. (2013, p. 1187) define differentiation as: "an approach by which teaching is varied and adapted to match students' abilities using systematic procedures for academic progress monitoring and data-based decisionmaking."

Providing education that matches students' needs can be considered "a cornerstone of effective instruction" (Parsons et al., 2017), but for successful implementation of differentiation, teachers need a broad range of skills and underlying knowledge (Van Geel et al., 2019). Based on a cognitive task analysis, Keuning and Van Geel (2021) not only distinguished four phases in which teachers prepare and perform differentiated instruction (1. prepare a period and module, 2. prepare a lesson, 3. perform a lesson, and 4. evaluate the lesson), but also identified five underlying principles for differentiation, that should be leading teachers' instructional decisions: 1) strong goal-orientation, 2) continuously monitor students' progress and understanding, 3) challenge all students, 4) adapt instructions and exercises in order to match students' needs, and 5) stimulate students' self-regulation (Keuning & Van Geel, 2021).

Because three out of four phases take place outside the classroom, and due to the importance of the cognitive aspect of differentiated instruction (teachers need to make deliberate instructional decisions, prior to and during the lesson), Van Geel et al. (2019) concluded that in order to assess the degree and quality of differentiated instruction, a classroom observation would not suffice. The ADAPT-instrument was developed: Assessing Differentiation in All Phases of Teaching (Keuning et al., 2020) in which 23 indicators are scored based on a classroom observation, combined with an interview with the teacher.
In Table 1 an overview of the 23 indicators divided over the 4 phases of differentiation is provided. For each indicator indicated which principle is involved

Phase	Indicator		Principle of differentiation				
							
1. Period and module preparation	1.1	Evaluation of student learning achievements	●	●			
	1.2	Insight into educational needs		●			
	1.3	Insight into the range of instruction offered	●				
	1.4	Prediction of support needs		●		●	
	1.5	Determination of supplementary remedial objectives and approaches	●			●	
	1.6	Formulation of supplementary enrichment objectives and compilation of a suitable range of instruction	●		●	●	
	1.7	Organisation of instructional sessions for groups of students				●	
	1.8	Involvement of students in the objectives and approach					●
2. Lesson preparation	2.1	Determination of lesson objectives	●				
	2.2	Composition of instructional groups		●		●	
	2.3	Preparation of instruction and processing for the core group				●	
	2.4	Preparation of instruction and processing for the intensive instructional group	●			●	
	2.5	Preparation of instruction and processing for the enrichment group	●		●	●	
	2.6	Preparation of encouragement for self-regulation					●
3. Actual teaching	3.1	Sharing of the lesson objective	●				
	3.2	Activation and inventory of prior knowledge		●			
	3.3	Provision of didactically sound and purposive core instruction	●				
	3.4	Monitoring of comprehension and the working process		●			
	3.5	Instruction and processing for the intensive group in the lesson	●		●	●	
	3.6	Challenging the enrichment group in the lesson			●	●	
	3.7	Encouragement of self-regulation during the lesson					●
	3.8	Conclusion of the lesson	●	●			
4.Evaluation	4.1	Evalueren en vervolgacties bepalen	●	●		●	

Table 1. Overview of all indicators and associated principles

Guidelines for using ADAPT

ADAPT was developed based on scientific insights, and the intention is for assessors to base their scores as much as possible on these insights, and not on personal preferences. Prior to using ADAPT, we recommend studying it carefully in its entirety and to review and follow the information provided below with regard to the assessment and scoring procedures.

Assessment procedure

ADAPT is scored according to: a) lesson observation and b) an interview with the teacher, supported by the examination of relevant documents. The lesson is observed first, and then the interview is held—either immediately after the lesson or on the same day after school. This allows the assessor to include questions in the interview about what was seen during the lesson. Although relevant documents can be requested prior to the observation, they are discussed primarily during the interview.

Lesson observation

It is recommended that, prior to the observation, the assessor should briefly ask the teacher what the lesson is about and be given a copy of the method manual and/or the student materials.

The assessor observes a complete lesson in which instruction is provided to students, either to the class as a whole or otherwise. The assessor should disturb the lesson as little as possible by observing from a fixed place in the classroom and not seeking to interact with the students. During the lesson, the assessor takes notes in the space provided on the scoring form and/or on specific indicators in order to substantiate the scores. The assessor does not assign any scores during the lesson.

Use of video

Video recordings can be used as an alternative to in-person observation. The following points are important in this regard:
If possible, two cameras should be used: one camera focused on the teacher (in front of the classroom) and one camera focused on the students.
The teacher should wear a microphone, so that individual instruction and instruction provided to smaller groups of students will also be clearly audible.

Interview

In the interview, the assessor collects all of the information needed to complete ADAPT as a whole from the indicators relating to the preparation of the period, the preparation and evaluation of the lesson, and the observed lesson.

During the interview, the teacher may talk about relevant documents that support their narrative (for example a group plan, module preparation or lesson preparation). To obtain a good overview of these documents, the assessor should ask the teacher to show these during the interview. This specifically refers to the relevant documents associated with the observed lesson.

Scoring procedure

At the end of the lesson observation (after the lesson and outside the classroom), the component relating to actual teaching is scored as far as possible, so that it is clear which information for this component has yet to be retrieved in the interview. After the interview, the other indicators are scored as well, and the scores and justification for actual teaching are adjusted and/or supplemented as needed, based on information from the interview. All indicators are scored. If an assessment is not possible due to the lack of information, the score ‘Cannot be assessed’ is assigned. In a few cases, an option of ‘Not applicable’ is available.

When scoring, the assessor always uses the comprehensive scoring information for each indicator. Providing justification for a score is mandatory, thereby ensuring that the assessor can properly consider and substantiate the assessment. The justification helps the teacher to understand why a certain score has been assigned, and it is therefore important when giving feedback.

The following points are important when conducting an assessment with ADAPT:

- The guidance of students with a personal learning pathway (PLP) is not included in the assessment.
- The assessor chooses the most appropriate score based on the descriptions. The descriptions of the scores may not be entirely applicable

to the situation in the teacher's classroom. In such cases, the assessor chooses the most appropriate score and justifies the choice.

- In case of doubt between two scores, the assessor assigns the lowest score: if a teacher meets the description for a score of 3 and it is unclear whether the teacher meets the description for a score of 4 (for example because this was not discussed during the interview), a score of 3 is assigned (the same applies for scores of 1/2 and 2/3).
- The assessor scores what the teacher does in the situation observed: the teacher's differentiation skills during the lesson and how the teacher prepared the lesson and period. Although teachers are quite likely to indicate that they normally do things differently, this is not relevant to this assessment.
- The assessor scores the indicators as fairly and objectively as possible, using the information that is available. The assessor should not make such assumptions as, 'based on what I have seen, I expect that the teacher would also do XX'.
- The assessor evaluates the indicators separately and includes in the assessment only information that is relevant to the indicator in question.
- If a teacher has a combined class and would not receive the same score for both groups (for example the teacher takes inventory of prior knowledge for Year 5 students, but not for Year 6 students), the assessor retains the highest score. The assessor notes in the justification for a score that this was not seen in the other group.

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Period and module preparation

The first phase in the process of differentiation is the preparation of periods and modules. The teacher prepares a period of several lessons (for example a week, module or teaching period). In the preparation of periods and modules, the teacher analyses the objectives as a whole and determines what is to be taught and assessed at which times. The teacher also charts the starting situations and educational needs of the students. The extent to which a teacher analyses results, sets objectives, has insight into the range of instruction offered and existing educational needs, and determines an appropriate instruction technique during the preparation of periods and modules is measured according to the following indicators:

1.1 Evaluation of student learning achievements
1.2 Insight into educational needs
1.3 Insight into the range of instruction offered
1.4 Prediction of support needs
1.5 Determination of supplementary remedial objectives and approaches
1.6 Formulation of supplementary enrichment objectives and compilation of a suitable range of instruction
1.7 Organisation of instructional sessions for groups of students
1.8 Involvement of students in the objectives and approach

Evaluation of student learning achievements

This indicator is used to score the extent to which the teacher evaluates student learning achievements. Information on student learning achievements can be obtained according to a variety of sources, including observations, daily work (digital or hard copy) and test scores. Test scores can be obtained for various types of tests (for example in the student monitoring system or the digital or other method). This could also include scores on shadow tests. For a high score on this indicator, teachers must also relate the scores of individual students to substantive objectives and determine why the objectives have been met, have been met only in part or have not been met. To this end, the teacher uses multiple sources of information.

1.1

Score	Description	Explanatory notes	Example
1	The teacher: • *does not* consider student learning achievements.		• The teacher did not take time to evaluate student learning achievements. • The teacher deliberately does not consider the student learning achievements from the previous year, in order to form a current image of the students.
2	The teacher: • *considers student learning achievements.*	The student learning achievements and/or the levels emerging from them are determined for information purposes. The teacher considers whether these achievements meet expectations in broad terms.	• The teacher has considered the scores, but has no overview of where students are failing within each domain. • The teacher scrolls through the student learning achievements from the previous period on the dashboard of the adaptive software.
3	The teacher: • considers *individual* student learning achievements; • *relates the scores to the substantive objectives and uses this information to determine whether the substantive objectives have been met, have been met only in part or have not been met.*	Based on the tests, the teacher knows which students have not met specific objectives in the previous period.	• The teacher considers how many errors a student has made in each domain (and sub-domain). • The teacher administers a shadow test in order to know which students have already mastered certain lesson objectives.
4	The teacher: • considers individual student learning achievements; • relates the scores to the substantive objectives and uses this information to determine whether the substantive objectives have been met, have been met only in part or have not been met; • *determines why the objectives have been met, have been met only in part or have not been met. The teacher does this by combining a variety of sources of information.*	The teacher seeks an explanation for why the substantive objectives have or have not been met. The teacher investigates where students have gaps. Various sources of information could include students' work, diagnostic interviews, other tests or the dashboard of the adaptive software.	• The teacher considers the students' work to determine why students did not meet the objectives from the previous period on the test. • The teacher consults the adaptive software dashboard to identify the learning objectives that individual students are failing to meet, in addition to reviewing their work on note pads to determine why they are failing to meet these objectives.
Cannot be assessed	There is not enough information to determine whether the teacher evaluates student learning achievements.		

Insight into educational needs

This indicator is used to measure the extent to which the teacher has insight into the general pedagogical and subject-specific educational needs of students. This overview can be obtained in a variety of ways (for example by observing students during class or by conducting diagnostic interviews with students).

General educational needs often extend beyond the boundaries of specific subjects, and they are often related to the general learning process and/or social-emotional needs of individual students. For example, a student with a short attention span might need additional encouragement.

Subject-specific educational needs are related to the needs that students have with regard to specific subjects. These needs involve the instruction and guidance that individual students need in order to meet some or all of the objectives for specific subjects. For example, a student could have a need for concrete materials, while the rest of the class is no longer working with such materials.

A high score on this indicator is assigned to teachers who have insight into both the general and the subject-specific educational needs of the students and who also document this information.

1.2

Score	Description	Explanatory notes	Example
1	The teacher has *no* insight into the educational needs of students.		• The teacher would like to get to know the students personally at the beginning of the year and therefore does not use the insights of teachers from the previous school year.
2	The teacher has insight into the general pedagogical ***or*** subject-specific needs of students.		• The teacher has selected a number of students who have not yet memorised the multiplication tables and who are therefore allowed to work with a chart for larger multiplication problems, but has no insight into pedagogical needs. • There is a group plan containing the general pedagogical needs. Arithmetic teaching needs have not been charted.
3	The teacher has insight into the general pedagogical ***and*** subject-specific needs of students. *This information is documented only in part, if at all.*		• The teacher considers how many errors a student has made in each domain (and sub-domain). • The teacher administers a shadow test in order to know which students have already mastered certain lesson objectives.
4	The teacher has insight into the general pedagogical and subject-specific needs of students. *Both types of needs are documented.*	The teacher records this overview so that it can be consulted by others.	• The teacher has a group plan containing descriptions of both social-emotional needs and teaching/educational needs for the core subjects. • The teacher has a general group overview of general needs. In addition, the teacher prepares the period and charts the students who have specific arithmetic teaching needs.
NEI	There is not enough information to determine whether the teacher has insight into the educational needs of students.		

Insight into the range of instruction offered

This indicator is used to measure the extent to which the teacher studies the objectives and subject matter before starting a new period of several lessons (for example a module or teaching period). Teachers who relate the objectives for the upcoming period to earlier and later objectives in the course of learning score high on this indicator. This indicator focuses only on the range of instruction offered. For example, it does not consider whether students would have trouble with specific objectives.

1.3

Score	Description	Explanatory notes	Example
1	The teacher *does not* consider the subject matter before starting a period.		• The teacher knows the course of learning through personal experience and further relies completely on the digital software.
2	The teacher: • *develops an image* of what will be addressed in the upcoming period.		• The teacher considers the objectives for the upcoming module. The teacher considers the proposed approach for each lesson.
3	The teacher: • develops an image of what will be addressed in the upcoming period *and of how the students will master these objectives.*	The point here is that the teacher not only understands the objectives for this period, but also develops a rough idea of how these objectives will be presented.	• The teacher studies the objectives for the upcoming module and considers the proposed instructions and processing in the method manual.
4	The teacher: • develops an image of what will be addressed in the upcoming period and of how the students will master these objectives; • *considers the coherence between the objectives to be addressed and related objectives occurring earlier and later in the course of learning.*	The point here is that the teacher knows which objectives must have been met in previous periods or must be met in the upcoming period, before working on subsequent objectives in the upcoming period.	• The teacher prepares an overview of objectives for the upcoming module, indicating the learning objectives that belong together.
NEI	There is not enough information to determine whether the teacher considers the range of instruction offered prior to the beginning of the period.		

Prediction of support needs

This indicator is used to measure the extent to which the teacher predicts how much need students will have for support in the upcoming period by reviewing student learning achievements, educational needs and the planned range of instruction to be offered. The teacher can do this by proceeding from the achievements and educational needs of students (composing instructional groups) or by reasoning from the objectives (indicating which students are likely to have more or less trouble with each objective). To achieve a high score on this indicator, a teacher must draw on various types of sources.

1.4

Score	Description	Explanatory notes	Example
1	The teacher *does not* predict the extent to which students will need support in the upcoming period.		
2	*The teacher uses one or more sources to predict the extent to which students are likely to have a general need for support in the upcoming period.*	For example, the teacher composes instructional groups based on test scores.	• The teacher has composed four instructional groups for the first period of the new school year, based on achievements on the final test of the student and education monitoring system (LOVS) from the previous year. • The teacher uses a combination of achievements on LOVS tests (I–V) and method-based tests (<60%, 60–80%, >80%) to classify three instructional groups.
3	The teacher *uses one source (or type of source)* to predict the extent to which students are likely to need support in the upcoming period. *This is done for each domain or for each lesson in the upcoming period.*	The teacher uses the content for the upcoming period to determine which students are having trouble or are already very good at the topics to be covered.	• Based on the categorical analysis of each domain of the LOVS, the teacher makes a note of which students are still having trouble with specific domains and which students have already met the objectives or will probably meet them easily. • The teacher determines the objectives that will be addressed in the upcoming period. For each objective, the teacher consults the method-based tests from the previous modules to identify the students who failed to meet that objective.
4	The teacher *uses a variety of sources (or types of sources)* to predict the extent to which students are likely to need support. This is done for each domain or for each lesson in the upcoming period.	Multiple sources means that the teacher combines several different tests (e.g. standardised tests, method-related tests, shadow tests or pre-tests) and/or other sources of information (e.g. daily work, observations, conversations with students) in order to obtain the most complete picture possible.	• The teacher uses a combination of achievements on LOVS tests (I–V) and method-based tests (<60%, 60–80%, >80%) to classify students broadly into three instructional groups. The teacher also considers scores on the shadow test to determine which students are likely to have trouble with specific objectives in the upcoming period and which ones score higher than the other members of their proposed instructional group on specific objectives. • When preparing the period, the teacher uses the shadow test and previous tests to cluster students for each objective. The teacher uses this clustering as a suggestion when conducting discussions with students concerning the objectives for which they expect to need more or less instruction in the upcoming period.
NEI	There is not enough information to determine whether the teacher predicts the extent to which students are likely to need support in the upcoming period.		

Determination of supplementary remedial objectives and approaches

This indicator is used to chart the extent to which a teacher determines supplementary remedial objectives and approaches (instruction and processing) for students who are failing to meet objectives and/or components. This refers to objectives and an approach supplementary to the regular range of instruction offered (for example if prior achievements indicate that students have not yet mastered the objectives). The teacher ensures that these students receive a supplementary range of instruction, either before proceeding with the current domain (or sub-domain) in this period, or alongside the regular range of instruction offered because the particular domain (or sub-domain) will not be addressed in the upcoming period. Whether a teacher classifies students for additional instruction within the regular range of instruction offered based on their achievements thus does not figure into the scoring of this indicator.

The point here is that the objectives and approach are customised to the needs of students and that they are based on objectives and not activities. Teachers receive high scores on this indicator if they compile a supplementary approach and formulate specific objectives for individual students based on their individual achievements.

1.5

Score	Description	Explanatory notes	Example
1	The teacher *does not* determine supplementary remedial objectives and a supplementary remedial approach, even though they are needed.		• The teacher focuses on students who are having trouble with specific course content, but does not consider whether students are also failing to meet other objectives and thus does not offer any supplementary remediation for them. • The teacher pays additional attention to students who have failed in specific domains (or sub-domains) when these topics are addressed again during the current period.
2	*The teacher plans an approach supplementary to the regular range of instruction offered (for individual students, small groups and/or the entire group).*	The teacher organises activities that are selected less according to the achievements of a particular group or individual students, and more according to general experience or the prior achievements of students at the school. The range of instruction offered focuses on activities instead of on objectives.	• The teacher begins every arithmetic lesson with memorisation, because this is the agreement established within the school. • The teacher begins every day by repeating the multiplication tables, because experience has taught that students in the higher years do not have a sufficient mastery of the tables.
3	The teacher uses *the achievements of the students* to plan an approach supplementary to the regular range of instruction offered (for individual students, small groups and/or the entire group).	The teacher has conducted an analysis of the current achievements of individual students and uses this information to determine which individual students or groups of students need supplementary work or instruction.	• The teacher schedules additional time with two students each week to memorise the multiplication tables together, based on test results indicating that students are still have considerable trouble with this. • The teacher copies a number of worksheets on telling time for the workbooks of three students, because their results from the previous module indicate that they are still having trouble with this. • The teacher has created a work package for each student based on the test.
4	The teacher uses the achievements of the students to *formulate supplementary remedial objectives* for individual students, small groups and/or the entire group, in addition to determining the approach supplementary to the regular range of instruction offered.	The point here is that the remedial objectives should match the achievements of the individual student. The objectives are formulated in such a way that, after a certain amount of time, the teacher can assess whether the objective has or has not been met. The approach is supplementary to the regular range of instruction offered.	• The teacher deliberately turns work packages on or off in the adaptive software based on the students' results. After three weeks, the teacher schedules an evaluation opportunity in order to assess whether the students have met the objectives by then. • Although telling time is not addressed in this period, the teacher formulates objectives (or remedial objectives) for five students who failed to meet the objectives on this topic, so that they will be able to work along with the base group again at the start of the next module. To this end, the teacher schedules an instruction session during the first week of the module and includes processing in the weekly tasks for the students. In the fourth week of the module, the teacher checks these worksheets in order to determine whether the students have met the objective by that time.
NEI	There is not enough information to assess whether the teacher formulates supplementary remedial objectives and a supplementary remedial approach.		
N/A	It is not necessary to formulate supplementary objectives and a supplementary remedial approach.		

Formulation of supplementary enrichment objectives and compilation of a suitable range of instruction

This indicator is used to chart the extent to which a teacher determines supplementary enrichment objectives and a supplementary approach (instruction and processing) for students who score high on objectives and/or components and who are not being sufficiently challenged within the regular range of challenges offered (for example the bonus exercises in the method). The point here is that these objectives and approaches should focus on objectives, and not on activities.

To receive a high score on this indicator, teachers must have rationally composed the range of instruction offered to students who are strong in this subject. The focus is on what the students will learn: the teacher proceeds from the objectives or domains on which the students will be working.

In practice, responsibility for instructing stronger students does not always rest with the group teacher. To achieve a high score on this indicator, however, a teacher must study the content of the range of instruction offered to these students.

1.6

Score	Description	Explanatory notes	Example
1	The teacher *does not compile any* challenging (broader or deeper) range of instruction in addition to any enrichment or in-depth material contained within the method, even though it is needed.	Standard enrichment assignments contained within the method are not counted as part of the supplementary range of challenging instruction offered.	• The agreement is that students who have completed the core instruction and the enrichment processing will work on their weekly tasks. These tasks do not include any specific challenging arithmetic exercises.
2	*The teacher compiles a challenging range of instruction, or school-wide agreements have been made in this regard. The teacher has little or no insight into the content of this challenging range of instruction.*	There is a general range of instruction for the enrichment group. This range of instruction is specifically selected according to the students in the enrichment group.	• All students who are strong in arithmetic work with a supplementary bonus method and follow the route book that accompanies the method. The remedial teacher provides instruction to these students once a week, and the teacher pays no further attention to it. • For students in need of additional challenge, the teacher makes copies from a bonus method available. Each day, the teacher copies the next pages from this method, without considering whether they correspond to the students or the regular range of instruction offered or whether a different lesson from the bonus method would be more suitable.
3	The teacher compiles a challenging range of instruction, or school-wide agreements have been made in this regard. *The teacher studies this range of instruction.*	When working with a particular enrichment method, the teacher should be knowledgeable about the content and objectives of the range of enrichment offered.	• The school-wide agreement is that stronger students are to work with bonus materials. The teacher studies these materials in order to be able to provide further assistance to these students as well. • The school has acquired mathematics books for the stronger students. Teachers also complete a number of exercises from each chapter each period in order to refresh their own knowledge and thus to provide further assistance to the students.
4	The teacher compiles a *reasoned* challenging range of instruction for individual students or for small groups of students. *The arithmetic objectives or domains serve as the starting point in this regard.*	The focus is not on the range of instruction offered, but on the objectives or domains on which the students in the enrichment group will be working. A range of instruction will be sought for these objectives. In this case as well, if this range of instruction is compiled by someone other than the group teacher, it is important for the teacher to study it in depth.	• The teacher makes additional challenging objectives available to students in the work package in the adaptive software based on an interview with students, in which they together discuss the areas in which they would like to develop further. • The teacher formulates supplementary objectives for students with high scores and searches for appropriate material in this regard (for example a supplementary bonus method). • Mathematics books for the stronger students are available at the school. The teacher selects a chapter on statistics for this module, because the students are learning how to create a survey in their world-orientation project, and the teacher would like to challenge the students to elaborate on their research data.
NEI	There is not enough information to assess whether the teacher compiles a challenging range of instruction.		
N/A	It is not necessary to compile a challenging range of instruction.		

Organisation of instructional sessions for groups of students

This indicator is used to measure the extent to which the teacher organises instructional sessions for the various groups of students at their own level. These instructional sessions can be determined during the preparation of the period and module, but the teacher may also organise these sessions week by week. Teachers will receive a high score if they do this for all groups of students in the class and if they pay attention to instruction aimed at the basic objectives (core instruction and additional instruction), as well as to supplementary instruction aimed at remediation and enhancement in depth or breadth.

1.7

Score	Description	Explanatory notes	Example
1	The teacher: • *does not* organise any fixed instructional sessions for various groups of students.	The term 'various groups of students' refers to groups of students based on level (for example a group of students who are strong in arithmetic and who need additional challenge) or specific achievements (for example a group of students who are failing to meet a particular objective).	• The teacher determines which students will receive instruction in each lesson.
2	The teacher: • *organises instruction for the entire group and additional instruction for the intensive group.*	The instruction provided to the entire group may or may not be provided in a compact form to stronger students.	• The teacher has a fixed lesson structure, starting with plenary class instruction followed by extended instruction at a teaching table.
3	The teacher: • organises instruction for the entire group and additional instruction for the intensive group; • *organises supplementary instruction for students who are still failing to meet specific lesson objectives that do not recur in the module,* ***or*** *the teacher organises enrichment instruction for the enrichment group.*	The point here is that these instructional sessions are scheduled and that attention is devoted to these students. The instruction given to these groups does not necessarily have to be provided by the teacher.	• The teacher determines which students are still failing to meet specific lesson objectives and schedules instructional sessions aimed at working on these objectives with these students. • The teacher schedules a fixed instructional session during the week to provide instructions on the enrichment work for students who are strong in arithmetic.
4	The teacher: • organises instruction for the entire group and additional instruction for the intensive group; • organises supplementary instruction for students who are still failing to meet specific lesson objectives that do not recur in the module, ***and*** the teacher organises enrichment instruction for the enrichment group.		• The teacher determines which students are still failing to meet specific lesson objectives and asks the remedial teacher to provide additional instruction to these students. Students with very high scores receive additional instruction from the remedial teacher once a week in the bonus class.
NEI	There is not enough information to assess whether the teacher organises fixed instructional sessions for the various groups of students.		

Involvement of students in the objectives and approach

This indicator is used to measure whether the teacher devotes attention to involving students in the objectives and approach when preparing the period and module. One way that a teacher could do this would be to discuss the objectives with students (for example the objectives that the student has already met or the ones that need additional attention). Another way for a teacher to involve a student in preparing a period or module would be to have the student provide input into the schedule and whether or not to follow instruction, in addition to considering collaboration, the amount of processing or the use of certain materials. Teachers who work with all (or nearly all) students to determine the objectives and/or approach for the upcoming period score high on this indicator.

1.8

Score	Description	Explanatory notes	Example
1	The teacher *does not* involve the students in the objectives and approach at the period level.		• The teacher does not do this at the beginning of the period, but does devote attention to it at the beginning of a lesson or allows the students to determine this during the lesson.
2	The teacher *shares at least some of the objectives and/or approach for the upcoming period with the students, but the students have no input in this regard.*	The teacher determines the objectives and/or approach for the period and shares them with the students.	• The objectives for a period are posted in back of the classroom. • The students are able to consult the objectives themselves in the adaptive software.
3	The teacher *encourages self-regulation by working with a number of students to determine at least some of the objectives and/or approach for the upcoming period.*	The teacher could also do this (at least in part) by allowing the students to determine the objectives and/or approach themselves, while taking care to maintain an overview of this.	• The teacher conducts a learning interview with a number of students. • Several students are allowed to set their own objectives for the supplementary work package. The teacher monitors whether the objectives they have selected are suitable.
4	The teacher encourages self-regulation by working with *all (or nearly all) students* to determine at least some of the objectives and/or approach for the upcoming period.		• At the beginning of a period, the teacher conducts a learning interview with all students, in which they together discuss the objectives and approach. • The objectives are posted in the back of the classroom, and students can sign up for additional instruction (based on the shadow test). The teacher monitors whether students who are failing certain components are also signing up.
NEI	It is not clear whether the teacher involves the students in the objectives and/or approach at the period level.		

Lesson preparation

The second phase in the process of differentiation is the preparation of lessons. The teacher determines the lesson objective and charts educational needs with regard to this objective. The teacher uses this information to prepare instruction that will allow the groups of students that have been composed to meet the formulated objectives. The extent to which teachers demonstrate the skills associated with this phase is measured according to the following indicators:

2.1 Determination of lesson objectives
2.2 Composition of instructional groups
2.3 Preparation of instruction and processing for the core group
2.4 Preparation of instruction and processing for the intensive instructional group
2.5 Preparation of instruction and processing for the enrichment group
2.6 Preparation of encouragement for self-regulation

Determination of lesson objectives

This indicator is used to measure whether the teacher determines the lesson objective for the entire group. It thus refers to objectives that apply to all students. The teacher does not simply take the objectives from the method/software at face value, but verifies whether they have been formulated in such a way that it is clear what the students are going to *learn*, and not what they are going to do (activity). The teacher also examines whether the objectives are comprehensible to the students. If they are not, the teacher reformulates the objectives. For a high score on this indicator, teachers must position the objectives within the complete course of learning.

2.1

Score	Description	Explanatory notes	Example
1	The teacher *does not* determine the objective of the lesson prior to the start of the lesson.		• While a student hands out the workbooks, the teacher decides what the objective of the lesson will be. • The teacher opens the dashboard right before the start of the arithmetic lesson to see what the lesson is about.
2	The teacher: • *develops an image of the lesson objective.*	The teacher takes the objectives at face value.	• The teacher reads the lesson objectives in advance.
3	The teacher: • develops an image of the lesson objective; • *considers the lesson objective critically, adjusting it as needed.*	The teacher ensures that the lesson objective meets the following two characteristics: • the objective describes the subject matter (new or review) to be taught: what students are going to learn. A good objective thus does not merely describe what the lesson is about (the topic) and/or what the students are going to do in the lesson (activity) • the objective is comprehensible to the students.	• The teacher considers the objective ('calculating area') in the adaptive software and formulates (or reformulates) it as an 'I can' statement. 'I can calculate the area of rectangles'.
4	The teacher: • develops an image of the lesson objective; • considers the lesson objective critically, adjusting it as needed. • *has an image of the coherence between the lesson objective and related objectives occurring earlier and later in the course of learning.*		• The teacher has set a concrete objective and knows that this objective was addressed for the first time earlier in the week by the team-teaching partner. • The teacher determines that the objective is well-formulated and exactly what the students should be able to do at the end of the lesson. The teacher is aware that the students should have completely mastered this objective at the end of the module, as a prerequisite for the next module.
NEI	There is not enough information to determine whether the teacher has determined the objective of the lesson in advance.		

Composition of instructional groups

This indicator is used to measure the extent to which the teacher composes instructional groups for a particular lesson. To receive a high score on this indicator, teachers must search for the most efficient grouping for specific lesson objectives, thereby meeting the needs of all students. In this regard, there is no set number of instructional groups.

2.2

Score	Description	Explanatory notes	Example
1	The teacher *does not* consider the composition of instructional groups.		• The teacher provides standard instruction to the entire group and then identifies which students have questions.
2	The teacher *uses the instructional groups that were composed earlier or that were created by the software without any further consideration.*	For example, previously created instructional groups might be included in the preparation of a period or a group plan.	• When preparing a lesson, the teacher does not consider the composition of instructional groups, because the adaptive software suggests extended instructional groups during the lesson.
3	The teacher *critically examines the needs of some students with regard to the lesson objective and uses this information to compose instructional groups (but not a fixed number).*	In this regard, a teacher may deviate from the usual number of instructional groups from the period preparation or school-wide agreements, although this is not required.	• The teacher determines that the three instructional groups from the group plan indeed constitute the best number for this lesson objective. In addition, in the period preparation, the teacher had already noted that two students who are normally in the core group will probably need extended instruction in this lesson. Based on the previous two lessons, the teacher considers this a realistic estimate, and keeps it that way. • The teacher determines which students have already met the lesson objective and may thus skip the plenary class instruction. The teacher does not also identify students who need extended instruction, but uses the extended instruction group from the group plan.
4	The teacher critically examines the needs of *all students* with regard to the lesson objective, and uses this information to compose instructional groups (but not a fixed number).	In this regard, a teacher may deviate from the usual number of instructional groups from the period preparation or school-wide agreements, although this is not required.	• The teacher determines that the three instructional groups from the group plan indeed constitute the best number for this lesson objective, but also notes that two students who would normally be in the core group will probably need extended instruction for this lesson. In addition, the teacher establishes that a student who usually follows extended instruction has already mastered this objective reasonably well, and determines that this student may choose during the lesson whether to start working independently right away.
NEI	There is not enough information to determine whether the teacher considers the composition of instructional groups when preparing the lesson.		

Preparation of instruction and processing for the core group

This indicator is used to measure the extent to which the teacher prepares the instruction and processing for the core group by critically examining the suggestions in the method. A teacher can adjust the proposed instruction and processing based on practical considerations or according to the educational needs of the students. For example, if a choice has been made to use other materials for processing (for example pancakes instead of fraction cards), it must be for an educational or didactic reason. For a high score on this indicator, teachers do not necessarily have to adjust the instruction and processing. The important point is for them to consider the suggestions from the method: whether the suggestions are suited to the core group. In this regard, the instruction is more important than the processing. For this reason, considering only the instruction is sufficient for a score of 3. This indicator does not concern the supplementary instruction and processing provided to the intensive group or the enrichment group.

2.3

Score	Description	Explanatory notes	Example
1	The teacher *does not* critically examine the suggestions from the method with regard to the instruction and/or processing for the core group.		• The teacher provides the instruction as suggested by the adaptive software or method manual, without further consideration of whether this is appropriate.
2	The teacher *critically examines the suggestions from the method with regard to the instruction and/or the processing (or the amount thereof) for the core group. The teacher adjusts this as needed based on practical considerations or in order to make it more enjoyable.*	These considerations are explicitly practical (for example time, space or available materials). This can also be done in order to make the teaching more enjoyable or attractive.	• The teacher chooses to have all students skip Assignment 3, as they would each need a mirror for this and not enough of them are available.
3	The teacher critically examines the suggestions from the method with regard to the instruction for the core group. The teacher adjusts this as needed *based on the educational needs of the students.*	This requires a critical examination of the method. It may not be necessary to do anything other than what the method suggests.	• The teacher decides it would be better to shorten the instruction, as the students have picked up the material well in a previous lesson on this objective. The teacher does not consider adjusting the processing associated with this lesson.
4	The teacher critically examines the suggestions from the method with regard to the *instruction and the processing (or the amount thereof)* for the core group. The teacher adjusts this as needed based on the educational needs of the students.	This requires a critical examination of the method. It may not be necessary to do anything other than what the method suggests.	• The teacher shortens the instruction, but deliberately has the students complete all of the processing assignments. Although the students already understand the material, they need more practice with it. • The teacher follows the instruction suggested in the method manual, as it seems well suited to the level of the students. The teacher eliminates the Assignment 3, because it does not correspond to the lesson objective. Instead of this assignment, the teacher provides an alternative assignment that does correspond to the objective.
NEI	There is not enough information to determine whether the teacher considers the instruction and processing for the core group.		

Preparation of instruction and processing for the intensive instructional group

This indicator is used to measure the extent to which the teacher prepares the instruction and processing for students for whom the core instruction is not sufficient to meet the lesson objective. This applies to students who are having trouble with the specific lesson objective and who thus need additional attention in order to meet this lesson objective. The composition of this group can thus differ from one lesson to another. Additional instruction for these students could took place during extended instruction or pre-teaching.

To receive a high score on this indicator, teachers must have explicitly prepared this instruction and processing, they must not repeat what was done in the plenary class instruction and they must have considered the balance between processing and instruction time. This indicator concerns instruction and processing for the intensive instructional group with regard to the regular lesson objective, and not the remedial objectives that have been addressed previously.

2.4

Score	Description	Explanatory notes	Example
1	The teacher *does not* consider instruction or processing for the intensive instructional group.		• The teacher follows the instruction for students who are weaker in arithmetic as presented in the method manual, without considering its relative suitability. • The teacher does not prepare the instruction for students who are weaker in arithmetic, but allows it to depend on reactions to the instruction provided during class.
2	The teacher *considers the instruction and/or processing for the intensive instruction group in advance, but does not focus on meeting the lesson objective.*	The lesson is taught only at a level lower than the lesson objective, meaning that students may not have met the regular lesson objective by the end of the lesson.	• The teacher allows students to work only in the supplementary workbook, as it is better suited to their level (the teacher is not aware that they are not meeting the lesson objective by doing so).
3	The teacher considers the instruction for the intensive instructional group in advance *and, in the process, focuses on meeting the lesson objective.*	It is important for the teacher to have a clear image of how to ensure that the students in the intensive instructional group are also able to meet the regular lesson objective.	• The teacher has decided to provide students who are weak in arithmetic with extended instruction using concrete material, following the core instruction. The teacher uses the supplementary workbook during the guided practice, but then also has the students complete exercises from the regular workbook, so that they will also be completing exercises at the level of the regular lesson objective. The teacher does not consider the quantity of tasks in relation to the time that students have available for processing.
4	The teacher considers *the instruction and processing (or the amount thereof)* for the intensive instructional group in advance and, in the process, focuses on meeting the lesson objective.	For a score of 4 on this indicator, teachers must consider the balance between instruction and processing.	• The teacher has decided to provide pre-teaching instruction using concrete material. In addition, after the core instruction, the teacher uses the supplementary workbook for guided practice and selects a number of exercises from the regular workbook so that the students will also complete exercises at the level of the regular lesson objective. The total amount of processing exercises is feasible for the students within the arithmetic lesson.
NEI	There is not enough information to determine whether the teacher considers the instruction and processing for the intensive instructional group.		

Preparation of instruction and processing for the enrichment group

This indicator is used to measure the extent to which the teacher prepares the instruction and processing for the enrichment group. These are students who have already met or can meet the objective of the current lesson without or after very limited instruction from the teacher.The composition of this group can thus differ from one lesson to another.

Teachers will receive a high score on this indicator if they have compacted the core instruction and processing for these students and have selected enriching (in depth or breadth) processing material that corresponds to the lesson objective or that demonstrably corresponds to the individual objectives of the students. In this regard, the teacher should actually study the material in order to know what these students are working on.

For a maximum score, the teacher must have determined in advance how the enrichment group will be involved at their own level in the various components of plenary class instruction (e.g. introduction, instruction or conclusion).

2.5

Score	Description	Explanatory notes	Example
1	The teacher *does not consider* instruction and processing for the enrichment group and/*or selects the enriching processing material that students in the enrichment group will complete.This material does not necessarily correspond to the lesson objective and/or the individual objectives of students.*		
2	The teacher: • *determines which part of the core instruction the enrichment group should follow and selects which core processing these students should complete (compacting);* • selects which enriching processing material the students in the enrichment group will complete. This material does not necessarily correspond to the lesson objective and/or the individual objectives of students.	The teacher follows the method suggestions for compacting the core processing. The enriching (in depth or breadth) material serves more to keep students busy than it does to contribute to meeting learning objectives. The teacher has little or no insight into what the students should do for the enriching processing material.	• Stronger students work in their supplementary bonus method when they have completed the processing, and the teacher has no overview of the exercises that they must complete. • The teacher decides that the stronger students may work on the computer when they have completed the processing, but does not specify what they should do.
3	The teacher: • determines which part of the core instruction the enrichment group should follow and selects which core processing these students should complete (compacting); • selects enriching processing material that the students in the enrichment group will complete. *This material corresponds to the lesson objective and/or the individual objectives of students.* • *The teacher makes sure to stay abreast of the exercises on which these students will be working.*		• The teacher develops several supplementary challenging assignments for the stronger students that are related to the lesson objective. • The teacher has decided that students can start working on the assignments in the work package more quickly in the adaptive software. This allows them to work towards individual learning objectives. • Stronger students work in their supplementary bonus method when they have completed the regular processing. The teacher has selected exercises that correspond to the lesson objective.
4	The teacher: • determines which part of the core instruction the enrichment group should follow and selects which core processing these students should complete (compacting); • selects enriching processing material that the students in the enrichment group will complete. This material corresponds to the lesson objective and/or the individual objectives of students; • The teacher makes sure to stay abreast of the exercises on which these students will be working; • *The teacher determines how the enrichment group will be involved at their own level in the various components of plenary class instruction (e.g. introduction, instruction or conclusion).*		• The teacher prepares a number of advanced questions that will be presented during the core instruction to students who are stronger in arithmetic. • The teacher seeks a connection between core and advanced exercises, in order to ask further questions about them at the end of the lesson.
NEI	There is not enough information to determine whether the teacher considers the instruction and processing for the enrichment group.		
N/A	There is no enrichment group for the lesson objective.		

Preparation of encouragement for self-regulation

This indicator is used to measure the extent to which the teacher plans the choices that students will have in the upcoming lesson with regard to their own approach (with the goal of encouraging self-regulation). To receive a high score on this indicator, teachers must plan choices for students, while also retaining control by setting limits to the freedom of choice for some or all students.

2.6

Score	Description	Explanatory notes	Example
1	The teacher *does not prepare* the choices to be presented to students.		• The teacher considers the students not yet independent enough to make their own choices.
2	The teacher: • *prepares what the students will be able to choose for themselves, but students have no influence on the approach to and/or the achievement of the learning objectives.*	Influence on the approach could include planning for oneself, following or not following instructions, or choosing whether to collaborate and which processing to do.	• All of the students must solve Problems 1–3, and they may decide for themselves the order in which they will solve them. • For Problem 3, all students may always choose which two rows they will complete. • The teacher assigns a weekly task, but it already contains what must be done and when (it is more like a calendar/ schedule). In principle, every student should be able to complete the tasks for that day within the lesson.
3	The teacher: • prepares what the students will be able to choose for themselves, *and some or all of the students thus have (or have had) an influence on the approach to and/or the achievement of the learning objectives.*		• The teacher has decided in advance to allow students to choose whether they do or do not wish to participate in the instruction. • The teacher assigns a weekly task. Students are responsible for the scheduling and completion of the assignments. During the week, 'weekly task time' is scheduled, in which students are free to decide what they will work on and when.
4	The teacher: • prepares what the students will be able to choose for themselves, and some or all of the students thus have (or have had) an influence on the approach to and/or the achievement of the learning objectives; • *has considered the limits (if any) and guidance that students will need during the lesson.*	The teacher considers in advance the limits to be placed on the freedom of choice that individual students will have. For example, some students will not be allowed to start working independently before the core instruction.	• The teacher has decided in advance to allow students to choose whether they do or do not wish to participate in the instruction. The teacher has also decided which students will be given complete freedom and which students will receive guidance when they have made the 'wrong choice'.
NEI	There is not enough information to determine whether the teacher prepares the choices to be presented to students.		

Actual teaching

The third phase in the process of differentiation is the actual teaching. During the actual teaching, the teacher introduces the lesson, provides differentiated instruction, promotes self-regulation and then concludes the lesson. The extent to which teachers demonstrate the skills associated with this phase is measured according to the following indicators:

3.1 Sharing of the lesson objective
3.2 Activation and inventory of prior knowledge
3.3 Provision of didactically sound and purposive core instruction
3.4 Monitoring of comprehension and the working process
3.5 Instruction and processing for the intensive group in the lesson
3.6 Challenging the enrichment group in the lesson
3.7 Encouragement of self-regulation during the lesson
3.8 Conclusion of the lesson

Sharing of the lesson objective

This indicator is used to measure whether the teacher states the lesson objective, whether it is stated in language that is comprehensible to the students and whether the teacher also indicates the relevance of the objective. The objective that is shared is a comprehensible objective, and it is not formulated as an activity or a topic (this is what is addressed in the lesson).

To achieve a high score on this indicator, teachers must explain the objective in comprehensible language and clarify during the lesson why it is important for students to learn this. The relevance of the lesson objective can also be clarified during the introduction, as well as during the core instruction.

3.1

Score	Description	Explanatory notes	Example
1	The teacher does not share the objective.		• The teacher immediately starts with instruction. • The teacher says, 'We are going to complete Page 34'.
2	*The teacher indicates the activity or topic for the lesson or shares/states an objective that is not formulated at the level of the students.*	Teachers who do not clarify what the students will be learning but who do say what the lesson is about (topic) and/or what they will be doing in the lesson (activity) will receive a score of 2 on this indicator. Examples of activities and topics: • We are going to practise addition in columns; • Today we are going to work on something handy: multiplication of monetary units; • The lesson is about structuring numbers up to 100. Teachers who only shows the objective on the board and who do not devote explicit attention to it will always receive a score of 2 on this indicator, regardless of how the objective is formulated.	• The teacher in Year 3 reads aloud from the book: 'You will learn how to divide numbers and quantities up to 10 in a division table'. • The teacher writes on the board: 'I can calculate the volume of an object in cubic units and litres'. The teacher has a student read this aloud. It is accompanied by a sample equation: 34 dm3 = 340 dl. During the lesson, it becomes apparent that this formulation was still too abstract for students.
3	*The teacher shares the objective in comprehensible language or provides a comprehensible explanation of the objective.*	The teacher states the objective of the lesson: what the students are going to learn. The following are examples of how objectives could be formulated: • We are going to learn to add up to 10; • We will learn to count backwards by 10s on the number line; • Today, you will learn to multiply by large numbers using estimation; • Today we will explore how to measure temperature; • At the end of the lesson, you will be able to add to 10 and subtract from 10; • After today, you will be able to apply several different weight measurements. For a score of 3 on this indicator, the objectives must also be comprehensible for the students. The formulation of the objective corresponds to the age and level of the students, or the teacher explains the objective.	• The following is written on the board: 'The objective of this lesson is: I can do partial sums for the addition tables, for example 32: 4.' The teacher has a student read this aloud and asks students to think of examples of such partial sums, thus indicating that the students understand the objective.
4	The teacher shares the objective in comprehensible language or provides a comprehensible explanation of the objective. *The teacher also clarifies the relevance of the objective.*	The teacher explains why it is important for students to learn this (for example by stating the relevance in everyday life or noting that the objective is a prerequisite for being able to do something else). Relevance is not intended to refer to any relationship with assessment (for example that it is relevant to repeat a section because the students did not score well on it). The relevance of the objective does not have to be clear to the students immediately during the introduction. It may also be clarified during the core instruction.	• The following is written on the board: 'The objective of this lesson is: I can do partial sums for the addition tables, for example 32: 4.' The teacher has a student read this aloud. The teacher then explains, 'On the field trip next week, we will be going in groups of 4. How many groups do we have in this class? We can use this to figure that out'.
NEI	It is not possible to assess whether the teacher shares the objective with the students.		

Activation and inventory of prior knowledge

This indicator is used to measure the extent to which the teacher activates and takes inventory of the relevant prior knowledge that students have. This explicitly refers to prior knowledge that is related to the lesson objective. To receive a high score on this indicator, teachers must activate and take inventory of the prior knowledge of all students, in order to be able to draw connections to it during the lesson.

3.2

Score	Description	Explanatory notes	Example
1	The teacher *does not* activate any relevant prior knowledge.		• The teacher has the students calculate a number of large multiplications on their erasable tablets. The teacher then starts the lesson, which is about adding decimals. • The teacher begins the arithmetic lesson with the memorisation assignment in the book or the adaptive software. It is unrelated to the objective of the lesson. The teacher then starts the arithmetic lesson without activating any prior knowledge.
2	The teacher: • *activates relevant prior knowledge;* • *does not take inventory of prior knowledge, or does so only with a few students.*		• The teacher discusses with the students that they had learned about calculating area in the previous lesson and that they will now continue with this. • The teacher gives the students a relevant assignment and walks past a few students. • The teacher has students solve relevant problems on the erasable tablets, but hardly ever checks what the students have written down.
3	The teacher: • activates relevant prior knowledge; • *takes inventory of prior knowledge for a purposive selection of students.*	The teacher deliberately selects students with whom to activate prior knowledge. These could be students from different level groups or students that the teacher is following more closely (for example because of previous performance).	• The teacher writes several problems on the board. All students are given time to solve the problem. The teacher asks a number of students about their strategies. In doing so, the teacher deliberately asks students who are not expected to have the necessary prior knowledge.
4	The teacher: • activates relevant prior knowledge; • takes inventory of prior knowledge for *all* students.		• The teacher has students solve relevant problems on erasable tablets and carefully examines the mistakes that are still being made. For example, these could be evident based on comments made by the teacher during the lesson, or from the interview. • The teacher writes a problem on the board and asks the students to solve it on a piece of scratch paper. The teacher walks around to see whether the students are able to solve the problem.
NEI	It is not possible to assess whether the teacher activates prior knowledge.		

Provision of didactically sound and purposive core instruction

This indicator is used to measure the extent to which the teacher provides didactically sound core instruction to students. Core instruction is understood as the first instruction that students receive. With this instruction, the teacher tries to meet the lesson objective with the students who have an average level for the subject. In this regard, no distinction is made between stronger and weaker students (although stronger students may not be required to follow this instruction). This instruction can be supplemented with extended instruction if the students do not meet the lesson objective with the core instruction.

For a high score on this indicator, teachers must provide correct explanations in a manner that is meaningful to all students. Although the instruction in a processing lesson is often shorter, it is still correct, focused on meeting the lesson objective and meaningful to students.

3.3

Score	Description	Explanatory notes	Example
1	The teacher provides core instruction that *is not purposive and that is not didactically sound.*	For example, the teacher provides only working instructions: what the students must do. The teacher does not provide any further substantive instruction.	• The teacher says, 'Solve Problems 1, 2 and 3'.
2	The teacher provides core instruction that is not purposive ***or*** that is not didactically sound.		• The lesson is on calculating with decimals. The exercises have to do with weighing fruit and vegetables. The teacher starts a class discussion on favourite vegetables and creates a bar chart with the students to see which vegetable is most popular. Although this is arithmetically correct and relevant, it does not fall within the framework of the lesson objective. • The teacher explains a concept, approaching it very purposively, but explains the content of the concept incorrectly.
3	The teacher provides core instruction *that is purposive* ***and*** *that is didactically sound.*	Didactically sound instruction could entail the following elements (this is not a checklist): • the teacher does not make any mistakes; • the level of action corresponds to the level of the student; • the teacher teaches students strategies instead of tricks; • the lesson focuses on a concept; • the teacher uses correct representations and models.	• The teacher provides a lesson on addition. The book contains examples having to do with adding up stacks of bricks. The teacher uses this problem in the purposive explanation. The teacher then solves five plain problems together with the students.
4	The teacher provides core instruction that is purposive and that is didactically sound. *The instruction is meaningful to the students.*	Meaningful indicates that the teacher positions the core instruction within a meaningful context for the students. **Important:** The use of a random context or example does not necessarily mean that the instruction is also meaningful to students. The point here is that the context should add value to the understanding of the content and relevance of the learning objective.	• The teacher provides a lesson on geometry and has students measure their own desks during the instruction. When discussing the measurements, the teacher always refers back to this context.
NEI	There is not enough information to determine whether the teacher provides substantive instruction.		
N/A	No substantive plenary class instruction is provided.		

Monitoring of comprehension and the working process

This indicator is used to measure the extent to which the teacher monitors the comprehension and working processes of students. It refers to monitoring during both instruction and processing. Monitoring can be done in many different ways (for example by examining students' work, asking questions, observing or looking at the dashboard). This indicator measures the extent to which the teacher monitors, and not the effect of monitoring. For a high score on this indicator, teachers must regularly monitor comprehension and working processes of students of all levels with regard to the lesson objective, during both instruction and processing.

3.4

Score	Description	Explanatory notes	Example
1	The teacher *does not* monitor comprehension and/or the working process, or monitors them *only superficially and/or not purposively.*		• The teacher asks superficial questions (e.g. 'Year 5 students, is everything okay?'). • The teacher does not check on the students until the end of the processing time.
2	The teacher monitors comprehension and the working process regularly and purposively during instruction ***or*** processing.	Regularly means that the teacher does this at multiple times. It is also important for the monitoring activities and strategies to be aimed at obtaining information related to the lesson objective.	• During the processing phase, the teacher passes by all students once to check whether they are using the right strategy. Those who are having trouble in this regard are visited an additional time.
3	During both instruction ***and*** processing, the teacher regularly and purposively monitors comprehension and the working process.		• The teacher asks many questions during instruction. During processing, the teacher makes a number of rounds helping only those pupils who have indicated they need assistance.
4	During both instruction and processing, the teacher regularly and purposively monitors comprehension and the working process *for students of all levels.*	All levels explicitly means that the teacher has an overview of students of different levels. To this end, the teacher need not explicitly ask each student a question, but can use various forms of monitoring.	• The teacher asks many questions during instruction, walks around a lot during processing and pays attention to students of all levels. In the meantime, the teacher consults the dashboard in the adaptive software to see how far the students are and how it is going. • During instruction, the teacher asks a question. The teacher gives all students time to think before giving them a turn. While a student is answering, the teacher observes the reactions of all students. The teacher then asks another student, 'Do you disagree?' The teacher also pays attention to all level groups during processing.
NEI	There is not enough information to determine whether the teacher monitors comprehension and the working process.		

Instruction and processing for the intensive group in the lesson

This indicator is used to measure the extent to which the teacher coordinates instruction and processing to the needs of the intensive group in the lesson, focusing on ensuring that these students meet the lesson objective and have sufficient time for suitable processing. The following applies in this regard:

- these students need more than core instruction from the teacher in order to meet the lesson objective;
- it is not necessary to identify in advance the students who will follow this instruction (it could be a predetermined group, a group assembled on the spot and/or individual students);
- only the instruction and processing in the intensive group corresponding to the content of the lesson objective are included in the assessment of this indicator. It involves additional instruction, and not supplementary instruction (aimed at a different objective);
- the additional instruction can be provided both before the core instruction (pre-teaching) and after the core instruction (extended instruction);
- the provision of instruction is a proactive activity. Briefly responding to students' questions is thus not classified as instruction.

For a high score on this indicator, this instruction must be focused on the correct completion of the assignments, as well as on meeting the lesson objective. The maximum score further requires that students have sufficient time for processing, so that they can actually complete the assignments independently.

Important: It could be that a teacher provides additional instruction or pre-teaching at a time outside of the lesson (for example at the beginning of the day). This indicator nevertheless concerns the attention paid to the intensive group within the lesson.

3.5

Score	Description	Explanatory notes	Example
1	The teacher *does not provide any* additional instruction, even though some students are having trouble meeting the lesson objective.	Assessors can identify students who are having trouble meeting the lesson objective by: 1. observing student behaviour (students who give a lot of wrong answers during instruction; students who spend a lot of time processing; students who ask a lot of questions relating to the content of the lesson); 2. examining documents (for example the group plan, group overview, module plan); 3. asking the teacher after the lesson.	• After the core instruction, all students start to work independently. A few students do not manage this well: as soon as the teacher approaches them, they indicate that they do not understand. After a brief explanation by the teacher, they still do not work properly (they are distracted a lot and leaning back in their chairs). At the end of the lesson, the students have written hardly anything on paper independently.
2	The teacher *provides additional instruction, but it is not aimed at ensuring that the students in the intensive group meet the lesson objective.*	The teacher aims for a lower objective with the intensive group.	• During extended instruction, the teacher allows students to work only in the supplementary workbook, as it is better suited to their level. Because the students do not work on the regular assignments, they cannot meet the lesson objective. • The teacher gives a brief explanation to weaker students before starting the core instruction (pre-teaching). In this explanation, the teacher focuses primarily on the work instruction (explanation of 'the intention' of the exercises, but not their content). After the core instruction, the students still have not had enough substantive instruction to be able to work independently.
3	The teacher provides additional instruction that: • *focuses on meeting the lesson objective with the students in the intensive group;* • *corresponds to the presumed level of the students.* *However, the students who needed additional instruction have either too much or too little time for independent processing.*	The instruction must meet both of the quality requirements. Otherwise, a score of 2 will be assigned.	• The teacher uses concrete material and models step by step how students can apply the strategy. The extended instruction takes up so much time, however, that students no longer have time for independent processing. • The teacher sits at the instruction table and solves the problems together with the students. In the process, the teacher gives increasing responsibility to the students (guided practice). At the end of the lesson, the students are able to complete the exercises independently. There is no time left for actually practising this with completely independent work.
4	The teacher provides additional instruction that: • focuses on meeting the lesson objective with the students in the intensive group; • corresponds to the presumed level of the students. *The students who needed additional instruction have sufficient time for independent processing.*		• Following core instruction on numerical addition, the teacher takes out the MAB material at the instruction table. The teacher has the students use the MAB material to work out the problem. During the modelling, the teacher makes it clear that 10 cubes of 1 are the same as 1 bar of 10, and that a 0 must therefore come under the E and a 1 under the T, which must be added to the tens from the original problem.The students then complete a selection of core assignments independently (choosing whether or not to use the MAB materials). • The teacher gives a brief explanation to weaker students before starting the core instruction (pre-teaching). After the core instruction, the students are able to start working independently.
NEI	There is not enough information available to determine whether the teacher provides instruction to the intensive group or whether the instruction to the intensive group is provided on another day.		
N/A	There is no intensive group with regard to this lesson objective.		

Challenging the enrichment group in the lesson

This indicator is used to measure the extent to which the teacher, during instruction and processing, challenges students who have very little difficulty in meeting the lesson objective.

The following applies in this regard:
- these students can meet the objective of the current lesson without or after very limited instruction from the teacher, or they have already met the lesson objective before the start of the lesson;
- it is not necessary to identify in advance the students concerned (it could be a predetermined group, a group assembled on the spot and/or individual students).

To achieve a high score on this indicator, teachers must devote explicit, proactive attention to these students, as part of the group as a whole. The processing for these students must also be challenging.

Important: It could be that a teacher provides broader or more advanced instruction at a time outside of the lesson (for example with remedial teachers or in a bonus class). This indicator nevertheless concerns the attention paid to the enrichment group within the lesson.

3.6

Score	Description	Explanatory notes	Example
1	During instruction and processing, the teacher devotes *little or no substantive attention* to the enrichment group, taking their level into consideration.	Assessors can identify students who have very little difficulty meeting the lesson objective by: 1. Observing students' behaviour (students who are allowed to start working sooner because they already understand the material; students who ask hardly any questions and/or who complete the work quickly; students who are allowed to work outside the classroom) 2. examining documents (for example the group plan, group overview, module plan) 3. asking the teacher after the lesson.	• These students have to follow the entire core instruction, even though it is beneath their level. • The teacher notices that the students already understand the material, but takes no action.
2	During instruction, the teacher devotes little or no substantive attention to the enrichment group, taking their level into consideration. *The processing for the enrichment group is adjusted to their level.*	The instruction is not adjusted. Students are sufficiently challenged in the processing. Such processing could consist of both compacted core processing and broader or more advanced processing.	• Students who are stronger in arithmetic participate in the plenary class instruction, during which the teacher does not take their level into consideration. Thereafter, these students start working on independent processing (bonus assignments) outside the classroom. They can always ask questions of the teacher.
3	The teacher *devotes attention to the students in the enrichment group at their own level, separate from the plenary class instruction.* The processing for the enrichment group is adjusted to their level.	The attention to the enrichment group is not related to the instruction provided to the other students.	• The students who are stronger in arithmetic start working independently. After providing instruction to the rest of the class, the teacher stops by them to provide brief instructions for their enrichment work.
4	The teacher *involves students from the enrichment group at their own level in at least part of the plenary class instruction.* The processing for the enrichment group is adjusted to their level.	During the plenary class explanation, the teacher can involve the students from the enrichment group at their own level in the introduction, explanation and/or the conclusion.	• During the introduction to the lesson, the teacher poses more challenging questions to the stronger students. They then start working on the bonus exercises.
NEI	There is not enough information available to determine whether the teacher provides instruction to the enrichment group or whether the instruction to these students is provided on another day.		
N/A	There is no enrichment group in relation to this lesson objective, or the teacher is not responsible for teaching these students during this lesson. This indicator is also not applicable if the students are working with another teacher during this lesson (this does NOT include: working independently at another location).		

Encouragement of self-regulation during the lesson

This indicator is used to measure the extent to which the teacher encourages students (or groups of students) in the regulation of their own learning processes. To receive a high score on this indicator, teachers must do this at different times and in different ways, in addition to monitoring and, if deemed necessary, intervening.

The following are examples of different ways of encouraging self-regulation during the lesson:

- Having students determine where they stand with regard to the objective;
- Allowing students to choose for themselves whether they will participate in the instruction;
- Providing students with choices during processing;
- Allowing students to choose the final product themselves;
- Having students engage in conscious reflection during the lesson;
- Having students engage in conscious evaluation after the lesson.

3.7

Score	Description	Explanatory notes	Example
1	The teacher provides *either no choice or no meaningful choice* to the group or to individual students.	A meaningful choice means that the teacher provides students with a choice related to meeting the lesson objective. The teacher encourages the students to think about what they need in order to achieve the objective.	• The students are free to choose the order in which they will solve the problems.
2	The teacher provides *one or more meaningful choices* to the group or to individual students. *The teacher does not monitor.*	The teacher provides one or more meaningful choices to the group or to individual students. The teacher does not monitor.	• The teacher has multiple types of processing or instructional groups, and the students are free to make their own choices in this regard. The teacher has no overview of the students' choices.
3	The teacher provides choices to the group or to individual students *in a single, specific manner. In addition, the teacher monitors these choices, intervening as needed.*	A single, specific manner means that the teacher can provide choices at different times, but that it is always the same type of choice. One example could be the choice of whether or not to follow the explanation. Intervention means that the teacher has the students reconsider their choices or makes the choices for them.	• After providing the core instruction, the teacher allows the students to decide for themselves whether they wish to participate in the extended instruction. In this regard, the teacher maintains an overview of whether certain students do indeed sign up for the instruction. If they do not do this, the teacher briefly checks whether the students truly do already understand the material. • Once students have made the choice to complete an enrichment assignment, the teacher monitors whether this choice was appropriate. The teacher discusses with the students whether the assignment was indeed sufficiently challenging. If the students report that it was not, the teacher asks them what they will choose next time in order to ensure that it is sufficiently challenging.
4	The teacher provides meaningful choices to the group or individual students *in multiple ways.* In addition, the teacher monitors these choices, intervening as needed.	For a high score on this indicator, teachers must demonstrate that they have a broad repertoire of self-regulation activities and that they apply them in multiple ways during the lesson.	• In addition to having the students consider whether they do or do not wish to follow the instruction, the teacher allows them to choose which processing exercises they wish to complete. In this regard, the teacher encourages the students to choose the five exercises that they find most difficult.
NEI	There is not enough information to determine whether the teacher provides meaningful choices to the group or to individual students.		

Conclusion of the lesson

This indicator is used to measure the extent to which the teacher concludes the lesson. At the end of the lesson, the teacher engages in evaluation with all students with regard to whether they have achieved the lesson objective. For a high score on this indicator, teachers must involve all students in the evaluation of the lesson objective during the conclusion of the lesson. It is not necessary for all students to have answered the question, but all students must be activated. To achieve the maximum score on this indicator, teachers must check to ensure that the students have arrived at the correct answer, as well as to ensure that they have properly understood the strategy being taught and that they have understood what they were doing.

3.8

Score	Description	Explanatory notes	Example
1	The teacher does not devote any attention to the conclusion of the lesson in order to determine whether the objective has been met.		• While the students are still working on the processing, the bell sounds and the arithmetic lesson is over. • The teacher says, 'Everybody, close your books. Now we're going to do spelling'.
2	• *The teacher concludes the lesson, but does not do much of anything to involve students in the conclusion of the lesson;* ***or*** • *The teacher discusses (either with or without students) the process (working attitude) and/or the product (completed work) of the students. The conclusion of the lesson does not focus on determining whether the objective of the lesson has been met by all students;* ***or*** • *The teacher meets all of the conditions for a score of 3 or 4, but only a few students are involved in this.*	If the teacher only discusses the working process or the product (e.g. the number of wrong answers on the exercises), this does not automatically mean that the students have met the objective.	• The teacher asks, 'How was it?' and has one or two students answer. • The teacher says, 'You all did great!' or, 'Good job! Next time, Year 5 could be a bit quieter when Year 6 is having instruction'. • The teacher repeats what they have done this lesson, but does not involve the students. • The teacher asks one student to tell how the problems could be solved. • The teacher asks the students how many exercises they have gotten wrong during the processing.
3	*At the end of the lesson, the teacher engages in evaluation with all students concerning whether they have met the objective by checking whether the students are now able to give the right answer.*	At the end of the lesson, the teacher checks whether students are now able to do it (answer check). It is still unclear whether the students have used the right strategy or whether they actually understand the material and are not simply applying a trick.	• At the end of the lesson, the teacher has all students solve three problems on erasable boards and checks whether the answers are correct. • The teacher quizzes the students and only looks at the correct answers. • The teacher writes two problems on the board and has all students think about them. The teacher then asks two students for the answers.
4	At the end of the lesson, the teacher engages in evaluation with all students concerning whether they have met the objective by checking whether the students *actually understand what has been taught.*	At the end of the lesson, the teacher checks whether the students now understand the material (strategy check). This is actually more about the 'how' question: the strategy. The teacher evaluates whether the objective has been met (for example by solving a problem together or by having the students express their solution strategies). Although it is not necessary for all students to have a turn to speak, they are all encouraged to think about it.	• At the end of the lesson, the teacher has all students solve a number of problems with a quiz. The teacher checks which strategies the students are using to solve the problems and repeatedly emphasises the strategy that was central to the lesson. • The teacher writes a few problems on the board and has all students think about them. The teacher asks two students to explain what they have done and what the answers are. The teacher then asks the rest of the class if they have also solved the problems in this way.
NEI	There is not enough information to determine whether a lesson conclusion has taken place.		

Evaluation

The fourth and final phase in the process of differentiation is the evaluation that takes place after the lesson. During this phase, the teacher evaluates whether the lesson objective has been met by the students. The extent to which teachers demonstrate the skills associated with this phase is measured according to the following indicator:

4.1 Evaluation and determination of follow-up actions

Evaluation and determination of follow-up actions

The teacher looks back on the lesson, examines the extent to which the lesson objective has been met by all students and whether and, if so, what follow-up actions may be necessary.

To achieve a high score on this indicator, teachers must base these follow-up actions on an explanation of whether the objective has or has not been met.

4.1

Score	Description	Explanatory notes	Example
1	After the lesson, the teacher *does not* chart the extent to which the students have met the lesson objective.	If a score of 3 or 4 has been assigned for indicator 3.8, a score of 1 is not possible here.	• Students must correct their work themselves. This is their own responsibility. The teacher does not examine the results further.
2	The teacher: • *charts the extent to which the students have met the lesson objective.*	The teacher checks only to see which students have met the lesson objective.	• At the end of the lesson, the teacher consults the dashboard to see whether all students have completed a sufficient number of exercises correctly. • Students correct their own work. If they have made more than three mistakes, they must note this on the list next to the submission box. The teacher checks this list at the end of the afternoon.
3	The teacher: • charts the extent to which the students have met the lesson objective; • *determines whether and, if so, what follow-up actions are needed.*	Follow-up actions could include: • a brief remedial action that ensures that students still meet the lesson objective (for example an additional instruction session later in the day); • a note regarding the presumed instructional needs of one or more students in a subsequent lesson on the same topic (do/do not allow them to join the extended instruction, pre-teaching, assign bonus exercises).	• The teacher notices that a number of students in the core group finished quickly and met the objective quickly as well. The teacher notes that, in the next lesson on this topic, these students could complete some more challenging processing assignments. • One student from the core group had made a lot of mistakes in the work. The teacher requests to meet with this student to explain the assignment again during the weekly task time. • The teacher checks to see which students have still made a lot of mistakes and notes their names in the logbook to 'keep an eye on them' during the next lesson on the topic.
4	The teacher: • charts the extent to which the students have met the lesson objective; • *the teacher evaluates why the students have/have not met the objective;* • the teacher determines whether and, if so, what follow-up actions are needed.	The teacher can obtain information about why students have/have not met the objective during the lesson, during the evaluation with students at the end of the lesson or by checking the students' work after the lesson. The teacher does not necessarily have to be able to provide an explanation, but must be active in searching for an explanation.	• The teacher observes that the students who have been working at the instruction table have not met the lesson objective. The teacher notes having remained stuck in the instruction with concrete material for a long time, so that the translation has not yet been made. The teacher decides to pay attention to the abstract representation on the number line in a pre-teaching session before the next lesson on this topic. • One student from the core group had made a lot of mistakes in the work. The teacher requests to meet with this student during the weekly task time to determine what the problem was. The teacher plans further follow-up actions based on this conversation.
NEI	It is not possible to assess whether the teacher evaluates the objective and whether the teacher evaluates the approach and/or determines follow-up actions.		