Mentor handbook | S10 | Examining pupils' responses

Study

Get yourself into a strong position to mentor your teacher by working through the following:

Key takeaways for this module

Your teacher can reach conclusions about next steps from formative assessment if they:

- Take a systematic approach to identify patterns of understanding.
- Try to understand pupils' thinking, by seeking common misconceptions and knowledge gaps, rather than just looking for the correct answer.
- Judge the prevalence and importance of misconceptions and knowledge gaps when deciding whether and how to adapt their teaching.

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READ THE EVIDENCE SUMMARY

Teaching challenge:
Mr Jones is designing and using assessments frequently to check pupil understanding and misconceptions. However, he finds the amount of information they provide challenging to manage, particularly with so many pupil responses. He must decide what to do next rapidly, either during the lesson, or before the next. Doing this slowly during a lesson risks losing pupils' attention; doing this slowly after the lesson adds to his workload dramatically. How can he use the information available to identify rapidly what pupils have understood, their misconceptions and their knowledge gaps?

Key idea:
Teachers need a simple, systematic approach to decide how to respond to pupils' knowledge gaps and misconceptions.

Identifying critical knowledge gaps and misconceptions

When faced with an array of pupil responses, Mr Jones must be able to identify the crucial points rapidly. Since his goal is to develop pupils' mental models, his focus must be on what pupils are thinking, not just on whether they have got the correct answer. Understanding pupils' thinking allows teachers to recognise the strengths and gaps in their mental models, and to plan ways to respond (Wiliam, 2011). Mr Jones can do this best by taking a systematic approach. Teachers can use their knowledge of likely misconceptions and knowledge gaps (Ball et al., 2010) to design tasks which will reveal them. Similarly, they can analyse

assessments with the most likely misconceptions and knowledge gaps in mind. Mr Jones' previous work with colleagues, breaking learning down, specifying goals, sequencing ideas and identifying misconceptions should allow him to look for evidence of their knowledge and understanding of the most fundamental and important ideas.

Deciding on next steps

In reviewing pupils' work, Mr Jones must decide whether to revisit an idea or to move on. His decision will reflect the importance of the idea: if a pupil misconception is core to understanding the subject, or to understanding the current topic, it is worth reviewing immediately. If a misconception is peripheral to the subject or the topic, it may not be a priority (Wiliam, 2011). Mr Jones may also be influenced by the prevalence of the misconception or knowledge gap: the more pupils who hold it, the more important it is to address.

Having identified the prevalence and importance of the knowledge gap or misconception, he can choose how to adapt his teaching and/or how to provide feedback to pupils. For example, if an assessment activity shows him that a handful of pupils have retained a misconception from a previous unit, he may defer addressing it since it is not foundational to the subject or the current unit. Conversely, if pupils have a fundamental misconception, or many pupils have the same knowledge gap, he may offer a fresh explanation, a new learning task and then reassess pupils' understanding. His mental model of the subject and his sense of pupils' developing mental models should allow him to prioritise the most crucial barriers to their understanding, drawing on the support of colleagues and resources where necessary.

Learning and performance are distinct

Learning and performance are different things. Performance is a temporary change in behaviour or knowledge which can be measured immediately after acquisition; learning is a lasting change in behaviour or knowledge (Christodoulou, 2017). Pupils' responses during or after a lesson that introduced new information are an indication of their performance, not of their learning. For example, pupils may answer correctly initially but subsequently forget new information. In analysing pupils' responses, Mr Jones prioritises using them to identify knowledge gaps and misconceptions, rather than seeing them as a guarantee that pupils will recall key ideas: his plans to revisit key ideas will check and support pupils' subsequent retention.

Nuances and caveats

Whatever the process Mr Jones follows, it must be quick. Within a lesson, the process could take a few seconds; after the lesson, he needs to have enough time having examined pupil responses to plan a next step. Equally, it is difficult for teachers new to an idea to identify misconceptions or gaps in pupils' mental models immediately. Mr Jones may usefully review assessments and decide on next steps in collaboration with his mentor or a more experienced teacher. They can help him decide best what to do next and can model their approach to reviewing assessments.

SELECT A DEVELOPMENT AREA

Consider the development areas for this module (below). Then make a note of the area you plan to zoom in on and when you plan to visit so you can observe your teacher in this area. Familiarise yourself with the focused development areas. You will select one later when you observe your teacher.

Development areas	Focused development areas
Systematically examining pupils' responses	> Teacher, with the support of a colleague, ensures they are clear on what pupils' responses would look or sound like if pupils had secure knowledge. > Teacher, with the support of a colleague, has identified in advance of the assessment common misconceptions, potential gaps in knowledge and errors pupils may make and knows what these would sound or look like in pupils' responses. > **Teacher intentionally and efficiently checks pupils' responses for previously identified misconceptions, gaps in knowledge and errors.** > Teacher analyses pupil responses over time, spotting patterns in pupils' understanding of critical knowledge and skills e.g. spotting common misconceptions, gaps in knowledge and error.
Examining responses from diagnostic questions	> Teacher knows which answers to the diagnostic questions they have set would constitute misconceptions, gaps in knowledge or errors. > Teacher examines pupils' responses and probes further for information they need in order to make inferences about pupils' understanding, e.g. asking questions to see where misconceptions stem from. > Teacher actively looks for and efficiently gathers an appropriate range of pupil responses from diagnostic questions, e.g. by scanning whole class to see which answers pupils have chosen and tallying incorrect responses.
Making inferences from pupils' responses	> Teacher, during lessons, makes appropriate inferences from pupils' responses and draws tentative conclusions about how to respond, e.g. where many pupils show they hold a common misconception about critical knowledge, the teacher may pause the lesson to address this. > Teacher, with the support of a colleague, makes appropriate inferences from patterns of pupils' responses over time, e.g. from a series of exit tasks, and plans when and how to address these

EXAMPLES OF PRECISE TARGETS

If your teacher is..	Then your precise target might be…
Not doing it at all…	Intentionally circulate to check pupils' responses, paying particular attention to misconceptions, gaps in knowledge and errors you think pupils may have.
Doing it but needs some improvement…	Plan to capture pupils' responses to questions in a simple format as you circulate, paying particular attention to responses to questions that target misconceptions, gaps in knowledge and errors you anticipated pupils making.
Doing it well and needs some stretch…	Plan to capture pupils' responses to questions in a simple format as you circulate, particularly capturing information on the number of pupils who have misconceptions, gaps in knowledge and errors and the types that you see, in order to target your feedback.

Observe

Consider the following questions based on a short (approximately 15 minute) observation of your teacher.

What was your teacher's previous target? Are they meeting it? How do you know?

Thinking about the development area you have selected for this module, what is your teacher already doing well in this area? Which focused development area best aligns with what your teacher needs to get better at? What one precise target (bite-sized action) might you work with them on during your mentor meeting?

REMINDER: You can choose to stick with this previous target if they have not made enough progress. When moving on to a new precise target, you can select one from the table above or, if this doesn't fit your teacher's needs, you can write your own.

How will you model the target to your teacher to show them what good looks like? What questions will you ask to check your teacher understands the model? For example, 'How it is different from your current practice?' and 'What impact might it have on your practice and pupils?'

Reminder: Your model should help your teacher develop their ability in some of the following:

- Be aware of common misconceptions.
- Draw conclusions about what pupils have learned by looking at patterns of performance over a number of assessments (e.g. appreciating that assessments draw inferences about learning from performance).
- Use assessments to check for prior knowledge and pre-existing misconceptions.
- Monitor pupil work during lessons, including checking for misconceptions.

Next, meet with your teacher to work through the 'feedback' stage of instructional coaching.

References

Ball, D. Thames, M. & Phelps, G. (2008). Content Knowledge for Teaching: What Makes It Special? Journal of Teacher Education, 59(5), 389-407.

Christodoulou, D. (2017). Making Good Progress: The Future of Assessment for Learning. Oxford, OUP.

Soderstrom, N., Bjork, R. (2015.) Learning Versus Performance: An Integrative Review. Perspectives on Psychological Science, 10(2), 176–199.

Wiliam, D. (2011). Embedded formative assessment. Bloomington, Solution Tree Press.