

Research for Teachers

Raising standards through classroom assessment

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For this TLA research summary, we selected, appraised and summarised a study that might be helpful to teachers wanting to find out more about using assessment 'formatively' - that is, as a teaching and learning tool in their classrooms. The study is:

Black, Paul and Dylan William. *Inside the Black Box*. London: King's College, 1998.

We have used our 'scaffolding' of questions to see what useful information the report contained for teachers. We have also searched out additional case study material to illustrate the main points made by the study.

You may also like to read our TLA research summary of the researchers' subsequent work, *Assessment for learning: putting it into practice*.

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Overview

Why is the issue important?

Assessment is a fundamental aspect of teaching that crosses all phases, subjects and age ranges, but practice can tend towards assessment of rather than assessment for learning. It is important to understand how the practice of assessment can be strengthened so that it enhances learning.

What did the research show?

All 20 quantitative studies exploring the impact of formative assessment on standards showed that innovations that included strengthening the practice of formative assessment produced significant, and often substantial, learning gains. Many of the studies showed that improved formative assessment helped low attaining pupils and those with learning difficulties more than the rest. When used in the right way, formative assessment raised pupils' self-esteem, fostered their beliefs in their ability, and helped them to attempt challenging tasks and overcome difficulties.

How was this achieved?

Examples of successful formative assessment innovations included:

- new ways of enhancing feedback between pupils and teachers
- actively involving students in the assessment process
- helping pupils to develop self-assessment skills.

How was the research designed to be trustworthy?

The study was a summary of a lengthy research review that began with a literature search yielding around 580 papers from which 250 were reviewed. The studies reviewed encompassed formative assessment work with five-year old pupils through to university undergraduates, and crossed several school subjects and countries. However, few of the included studies actually offered concrete examples of formative assessment strategies in use in the classroom.

What are the implications?

The study showed the value of:

- creating a school culture which stresses that all pupils can learn, whatever their ability
- giving pupils feedback about their learning, both orally and in writing
- giving comments rather than grades when marking pupils' work
- using a wide range of questioning techniques, such as: asking open ended questions, asking pupils to give the reasons for their answers, offering pupils a choice of answers to encourage thinking and giving pupils time to think before answering, by writing answers down first, or discussing them in pairs etc
- involving pupils in self- and peer assessment.

What do the case studies illustrate?

While the original study did not contain any case studies, those featured in the RfT show:

- how teachers developed new ways of enhancing pupil-teacher interactions
- the impact on pupils of different types of teacher feedback
- how pupils were encouraged to take active responsibility for their own learning through debriefing sessions in which they discussed how they did the tasks and talked about their solutions to problems
- why teachers' beliefs about learning mattered
- ways in which pupils can be involved in self-assessment
- how teachers helped pupils to develop self-assessment skills and encouraged them to take responsibility for their own learning
- how assessment was used to develop pupils' self-esteem.

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Study

What did this project set out to do?

The authors suggest that the classroom may be seen as a 'black box' whose inputs include pupils, teachers,

resources, tests, management rules and requirements, parental anxieties and so on. Then there are outputs from the black box: including, hopefully, pupils who are more knowledgeable and competent, perhaps better test results, and teachers who are satisfied (and exhausted) to varying degrees. But the authors want to know what it is that happens inside this black box. What goes on inside the classroom to create the outputs that we see coming from it?

This study is about some of what happens on the inside of the 'black box.' It explores how formative assessment contributes to effective teaching. Its authors make a case for policy makers and everyone interested in raising standards of teaching and learning to encourage and support teachers in using formative assessment in their every day work with pupils in classrooms.

What is meant by 'formative assessment'?

The authors use the term 'assessment' to refer to all those activities undertaken by teachers (and by their students in assessing themselves), which provide feedback to shape and develop the teaching and learning activities in which both teachers and pupils are engaged. This becomes 'formative assessment' when the evidence is actually used to adapt the teaching to meet the needs of the pupils, or by pupils themselves to change the way they work at their own learning. It is assessment for rather than of learning. By this definition, there is no one simple set of activities that constitute formative assessment - it is not a quick fix process with a single formula.

Why focus on formative assessment?

The key message of this report is that learning is driven by what teachers and pupils do in classrooms. The authors argue that none of the many policy initiatives over the past decades has offered teachers any help with this task. On the contrary, they suggest that some of the changes that policy makers have introduced have resulted in 'inputs' into the 'black box' that may have been unintentionally counterproductive for pupils, making it harder for teachers to raise standards. For example, they cite the dominating influence of short, summative, external testing that can have the effect of drawing teachers away from formative work.

How was this research designed?

The research report that we are presenting this month is itself a summary version of a lengthy research review that began with a literature search yielding around 580 papers from which 250 were reviewed. The Assessment Reform Group of the British Educational Research Association initiated the review. The studies reviewed encompassed work with five-year old pupils through to university undergraduates, and crossed several school subjects and countries. As the authors point out, few studies actually offer concrete examples of formative assessment strategies in use in the classroom. Where we have referred to case study examples in this website summary they have been taken from other sources by the ROM team for the GTC to offer glimpses inside the 'black box' and illustrate for teachers the findings of the main study.

What were the main findings of the research review?

Firstly, the systematic weighing of evidence from many studies that they reviewed convinced the authors that formative assessment does raise standards.

Secondly, the evidence in the studies also showed that there is room for improvement in the way teachers use formative assessment.

Thirdly, there is evidence from the studies about how to improve formative assessment that could help teachers to develop this as a tool for learning.

How can formative assessment raise standards?

The report used evidence from 20 quantitative studies to explore the impact of formative assessment on standards. All of these showed that innovations that included strengthening the practice of formative

assessment produced significant, and often substantial, learning gains. Many of the studies showed that improved formative assessment helped low attaining pupils and those with learning difficulties more than the rest.

Examples of these innovations included:

- new ways of enhancing feedback between pupils and teachers
- actively involving students in the assessment process
- helping pupils to develop self assessment skills.

In what ways do current assessment policies inhibit effective learning?

There was evidence from the studies that:

- tests could encourage rote and superficial learning
- assessment methods were not often discussed by teachers in the same school, nor were they necessarily critically reviewed in relation to what they actually assessed
- there was a tendency, particularly in primary schools to emphasis quantity and presentation of work at the expense of quality in relation to learning.

Of course, many teachers will have identified these difficulties and started to tackle them. The study suggests that recognising how difficult formative assessment can be in the current policy context is an important part of making progress.

What can teachers do to counteract the negative impacts of assessment?

From their review of the studies, the authors recommended that Teachers need to:

- emphasise the learning function of assessment
- ensure that the advice they give is useful and targeted to the learning needs of the individual pupils
- reduce the emphasis on marks and grades
- ensure that pupils perceive the prime purpose to be personal improvement rather than competition when using approaches that involve comparing pupils' work
- avoid reinforcing low-attaining pupils' belief that they lacked 'ability'; pupils need to be motivated and believe that they are able to learn.

How can teachers be helped?

Teachers have to undertake some summative assessment for accountability purposes, but assessing pupils for external purposes is different from assessment of on-going work to monitor and improve progress. There is evidence that confusion in teachers' minds between these two roles impedes progress.

The report recommends:

- that the interactions between formative assessment and external testing need to be carefully studied to see how the models used in external tests can be made more helpful
- the contribution of teachers' assessments should be valued and developed rather than reduced in favour of external testing.

Can assessment have a managerial role that affects its impact on pupil learning?

The review found evidence that:

- teachers' feedback to pupils often fulfils social and managerial functions, such as reinforcing class rules; useful as these can be, teachers have to be careful that they do not impede the learning functions
- teachers are often required to predict pupils' results in external tests without knowing what their pupils' learning needs are; while acknowledging that all teachers are required to undertake some such summative assessment eg, to report to parents, Black and Wiliam argue that the priority currently given to summative assessment should be altered in favour

of enhancing the development of formative assessment skills by teachers

- the collecting of marks for record keeping for external purposes is given greater priority than the analysis of pupils' work to discern learning needs.

Again, of course, not all of these descriptions apply to all classrooms, but many teachers will recognise the pressures described here.

What can we do to improve formative assessment?

Having alerted us to the ways in which some aspects of our current assessment practices can be negative, and suggested ways in which we could counteract some of these, the study goes on to explore how formative assessment strategies can be developed and improved.

Inside the Black Box proposes several ways to improve formative assessment, based on the evidence found in the studies, which the authors reviewed:

- raising pupils' self-esteem
- developing pupils' self-assessment
- building in opportunities for pupils to explain themselves
- asking the right questions in the right way
- using dialogue and feedback
- evolving effective teaching.

How can pupils' self-esteem be developed?

To create a positive rather than a negative culture, feedback to any pupil should focus on the particular qualities of his or her work, with specific advice on what he or she can do to improve. Comparisons with other pupils should be avoided. Having feedback that they can act on helps pupils' learning, raises low self-esteem, fosters their beliefs in their own ability and helps them to overcome difficulties and fear of failure. It is particularly effective with low-achieving pupils and gives higher achievers the confidence to attempt tasks that are more challenging.

The report emphasises that assessment can work positively and negatively on self esteem. When the classroom culture focuses on 'gold stars' and 'place-in-the-class' pupils look for ways to obtain the best marks rather than at their learning needs. They avoid putting themselves in situations where they might fail, for example, avoiding challenging work and answering questions. Highachievers may do well in this culture but low-achievers may only learn that they will always do badly so that there is no point in trying. The overall result is to increase the frequency and extent of under-achievement.

The overall message in this part of the analysis is that formative assessment, if used in the right way, can be a powerful tool.

Why is pupils' self-assessment important?

This report proposes that self-assessment is an essential component of formative assessment, not a 'luxury' in classroom teaching. Pupils need a sufficiently clear picture of the targets that their learning is meant to attain in order to assess their own work. The report identifies the need for pupils to understand their target as one of the three distinct elements of feedback that all pupils need before they can take action to improve their learning:

- information about the desired targets
- evidence about their present position
- some understanding of a way to close the gap.

Building in opportunities for pupils to explain themselves

The evidence from the review studies showed that teachers need to build into their teaching opportunities for

pupils to express their understanding. The authors argue that dialogue between pupils and a teacher should give all pupils the chance to think and to express their ideas. There is no clear line between instruction and formative assessment.

We found some illustrations of this in the case studies. The debriefing process (Evans et al) gave pupils the opportunity to explain themselves, helping them to clarify their understanding and articulate their thinking. The discussion gave the teacher the opportunity to provide feedback to individual pupils - feedback they valued because it helped them to improve their work. In this way, the debriefing process was used for formative assessment.

In some of the Suffolk schools maths journals were used for pupils to record what they did and the ways in which they tackled problems, and for teachers to gain a very clear picture of the way pupils worked things out, what they knew, understood and could do.

Dylan Wiliam described work with mathematics teachers in which one student was appointed 'rapporteur' at the beginning of a whole class lesson. The lesson ended early to allow the rapporteur to summarise the main points of the lesson and answer questions from the rest of the class. Pupils were queuing up to take on the role of rapporteur.

Asking the right questions in the right way

Asking questions can be an effective means of finding out what pupils have understood. But all too often, as the studies showed, teachers unconsciously inhibited learning by:

- trying to direct the pupil towards giving the expected answer
- not providing enough quiet time for pupils to think out the answer
- asking mainly questions of fact.

The authors suggest that teachers can break this cycle when they give pupils:

- time to respond
- opportunities to discuss their thinking in small groups
- a choice between several possible answers and the chance to vote on the options
- opportunities to write down their answers from which teachers then read out a few.

Using dialogue and feedback

The dialogue between pupils and teacher needs to be thoughtful, reflective, focused to evoke and explore understanding, and conducted so that all pupils have an opportunity to think and express their ideas.

The report points out how a good test can be a developmental as well as an assessment experience. Test and homework exercises that support learning need to be clear and relevant to learning aims.

In follow up work by Dylan Wiliam, the author shows the effect that feedback to learners about their past performance has on their future performance and their attitudes towards learning. In particular, it highlights the types of feedback that are most effective in promoting learning.

Feedback should give each pupil specific guidance on how to improve and the opportunity and help to work at that improvement. In another case study, the teacher investigated the effectiveness of different 'categories' of feedback. He found that the most successful communication took place when:

- pupils made notes during the feedback
- a model answer was given
- pupils were first re-focused on the task.

When teachers gave individual feedback to pupils, the comments were pertinent to each pupil's response to the task and related precisely to the pupil's starting point. In 60 per cent of cases the pupils were able to recall

what the teacher had said.

How can teachers' beliefs about the pupils affect their learning?

The study showed that what teachers believed about their pupils' learning, and their ability to learn, had an impact on the learning of their pupils.

The basic issues were:

- the nature of the teacher's beliefs about learning
- teachers' beliefs about the potential of all their pupils to learn.

Why do teachers' beliefs about learning matter?

Some teachers believe that knowledge is transmitted and learnt, so that clear instruction accompanied by rewards for patient reception are the essentials of good teaching. The authors of *Inside the Black Box* argue that the evidence of their study shows this to be wrong. If teachers accept the messages from *Inside the Black Box* then they will also accept that the above model is not how learning works. If teachers teach through interaction, building on each pupil's developing understanding, then formative assessment becomes an essential component of a classroom culture of questioning and thinking, where pupils learn from shared discussions with the teacher and each other.

They also argue that pupils do not have a fixed, inherited intelligence that determines ability to learn. Rather, ability is a complex of skills that can be learnt and pupils can learn more effectively if obstacles to their learning can be removed. Their evidence shows that teachers can use formative assessment to develop all pupils' learning, particularly that of lower achievers.

How can teachers make a start?

The authors suggest that teachers need to focus on the inside of the 'black box' and explore the potential of formative assessment to raise standards directly, as an integral part of each pupil's learning. This could be accomplished by:

- improving the quality of teacher-pupil interactions
- providing stimulus and help for pupils to take active responsibility for their own learning
- helping to move pupils out of the 'low-attainment' trap
- developing the habits needed to foster life-long learning in their pupils.

All of this will take time. The authors urge teachers to consider undertaking action research as a vehicle for relating the messages of the study to their own classroom experiences - not least because of the need to collect a range of data about what teachers and pupils do, to ensure that all aspects of their broad-ranging approach are in place.

For example, the report identifies the need for teachers to see concrete examples of what doing better' means in practice. One way of doing this might be through setting up small groups of local schools covering a range of phases and subject areas to give teachers the opportunity to try out some of the ideas presented in the study in a collaborative way. The authors stress that some of the most important questions can only be answered through a programme of practical implementation.

Implications for practice

Head teachers and senior staff may wish to consider the following implications:

- The researchers found that school leaders need to create a school culture which stresses that all pupils can learn, whatever their ability. To what extent does your school's system for rewarding pupils promote positive interactions between pupils and teachers?
- The Norfolk Area Schools Consortium has developed some tools for reviewing systems of rewards and sanctions.

Would it be useful to use these or other tools to investigate the effectiveness of the system within your school? Teachers wishing to support formative assessment of their pupils' learning may wish to consider the following implications of the findings of this research:

- The researchers found a wide range of questioning techniques which supported formative assessment. These included checking back with pupils the reasons for their answers, asking open ended questions when possible, offering pupils a choice of answers to encourage thinking and giving pupils time to think before answering, for example by writing answers down first, or discussing them in pairs. Would it be helpful to review your questioning techniques to see to what extent they support formative assessment?
- Teaching strategies that allowed the teacher to be explicit about what and how pupils learnt were identified as supporting formative assessment. How could your teaching strategies be more explicit about how learning takes place and what is learnt?
- The researchers found that giving feedback to pupils about their learning both orally and in writing was a key component of using formative assessment to improve attainment. The timing of feedback, emphasis of positive achievement in individual feedback, the use of comments rather than grades in marking and the use of clear criteria in marking were all found to support formative assessment. Would it be useful to discuss approaches to feedback with your colleagues and to share good practice?
- The researchers identified a number of ways in which pupils could be involved in formative assessment, particularly in self-assessment. Would you find it helpful to consider how you might involve pupils more in self-assessment and peer assessment?

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Case studies

Inside the Black Box does not contain any case studies or classroom based examples and illustrations. Indeed this was a weakness of the studies reviewed, according to the report, and it is why the authors have recommended setting up teacher research projects.

We have found some examples from our own searches to help teachers get a flavour of the types of classroom strategies that might be effective in developing their approaches to formative assessment.

Communications between students and their teachers through learning

The Effective Learning Group (ELG), John Mason School, Abingdon
(1999)
TTA Publication Number 68/9-99

This case study helps us to understand how teachers can develop new ways of enhancing pupil teacher interactions as the authors of *Inside the Black Box* suggest. The ELG used communications strategies to encourage pupils to talk about how they had approached tasks, their solutions and to transfer their learning to other contexts.

The study identified and explored actions teachers could take to improve communication with students about learning. The teachers discovered that students valued focused and personal written or spoken communications with the teacher, and were able to interpret, with a great deal of accuracy, the intentions behind teacher communications. On the basis of their findings, the ELG recommended that teachers adopt the following strategies:

- use checking questions, such as, "So, what I think you are saying isis that right?" to make sure the students are saying what they mean to say and to find out why they think as they do
- set up opportunities for peer-peer reflection through a scoring system for students to show how much they have understood

- in one to one conversations give full attention to the student to emphasis the validity of the communication
- use check-lists for marking that can enable the same points to be made to a number of students and thus make it more likely that positive comments will not be forgotten, and allow space for students' comments and questions
- encourage students to come and see them without thinking they've done something wrong, for example, by collecting commendations in person.

Debriefing: Pupils' learning and teacher planning

Elizabeth Evans, David Kinninment, Julie McGrane and Amber Riches
(1999)

TTA Publication Number 70/8-99

This case study has been selected to highlight how the use of 'debriefing', as part of a teaching thinking initiative, has been used as formative assessment and to show how pupils were encouraged to take active responsibility for their own learning.

In debriefing sessions, following a lesson, pupils were encouraged to:

- talk about their solutions to problems
- discuss how they did the tasks
- transfer their learning to other contexts.

A particular feature of these discussions was the extent to which they provided feedback to the individual pupils on their thoughts and explanations, and helped them to improve their work. The debriefing process helped pupils see the point of the lesson.

Important features of the debriefing lessons were:

- the high numbers of open questions asked by the teacher
- pupils asked to explain their reasoning and develop their responses
- evaluative feedback given to the pupils on their solutions and thinking by the teacher and their peers
- clarity of purpose about the activities
- making connections between the lesson outcomes and other contexts.

The debriefing helped the pupils to see the point of the lesson:

Pupil: We discuss everything.

Interviewer: And you think that helps?

Pupil: Yeah because then we understand what we're doing and why we're doing it.

The authors make suggestions about planning for debriefing sessions and stress the importance of thinking about questions to encourage pupils to develop their answers. Being videotaped, using peer observation and finding time for analysis and discussion were powerful vehicles for developing practice.

Formative assessment in mathematics: Part 2 - feedback

Dylan Wiliam (1999)

Equals: Mathematics and Special Educational Needs 5(3): 8-11

This paper summarises some of the findings of the original study for Inside the Black Box focusing here on

feedback. It has been selected to show:

- new ways of enhancing feedback between teachers and pupils
- how pupils' self-esteem can be developed
- how opportunities can be built in for pupils to explain themselves
- the types of feedback that are most effective in promoting learning
- how teachers can develop the habits needed to foster life-long learning in their pupils.

The author reports two experiments that demonstrated the value of 'comments only' marking. Pupils given only teachers' comments on a range of thinking tasks scored on average 30 per cent more on a subsequent similar task than pupils who received marks and comments or marks only. Giving marks alongside comments completely wiped out the value of the comments. A second similar experiment showed that the work of pupils who had received comments improved substantially whereas pupils who were given praise or grades made no more improvement than the pupils who received no feedback at all. There was evidence that teacher praise needed to be used sparingly and related to specific factors that the pupil could control.

The timing of feedback was also crucial. In one experiment, a time consuming task gave the students an incentive to think carefully and this greater 'mindfulness' led to more learning. When feedback was given before pupils had had a chance to work on a problem they learned less.

In another study involving 64 Year 4 pupils half the students undertaking a task were given a 'scaffolded' response, receiving only as much help from the teacher as they needed, when they got stuck. The other students were given a complete solution as soon as they got stuck and then given a new problem to work on. Those given the 'scaffolded' response learnt more and retained their learning longer than those given the full solution. This is good news for teachers because as well as saving time, developing skills of 'minimal intervention' promotes better learning.

The author suggests that student motivation depends on whether they see their ability as fixed or incremental. If they believe their ability is fixed then students will see any task as a chance to re-affirm their ability if they can do it, or be 'shown up' if their confidence is low and they feel they can't. Many students would rather be thought lazy than stupid so they don't attempt the task. On the other hand, students who see their ability as incremental see all challenges as chances to learn - to get cleverer - and in the face of failure will try harder.

These views of ability may not be global. Students who believe that their ability in schoolwork is fixed may also believe that their ability in athletics is incremental - the more they train the better they get. The author, therefore, suggests that teachers need to ensure that the feedback they give students helps them to realise that their ability is incremental rather than fixed.

Formative assessment in mathematics: Part 3 - the learner's role

Dylan Wiliam (2000)

Equals: Mathematics and Special Educational Needs 6(1): 19-22

This study has been selected to illustrate:

- why teachers' beliefs about learning matter
- ways in which pupils can be involved in self-assessment.

This paper focuses on the role of the learner in formative assessment and in particular sharing criteria with learners and student self-assessment. It summarises evidence from the original review used as the basis for Inside the Black Box.

In an experiment, 12 classes followed a curriculum, designed to promote thinking in Science, during seven scientific investigations, followed by student evaluation exercises. In half the classes, evaluation took the form of group discussions of what the pupils liked and disliked about the topic. The other half engaged in a process of 'reflective assessment' and evaluated their work according to quality criteria. At the end of the investigation, students who carried out the 'reflective assessment' scored higher than the students in the other group. All students improved their scores when they understood what they were meant to be doing and knew what counted as good work. However, students in the 'reflective assessment' group with the weakest basic skills showed the greatest improvement.

The author suggests that teachers could provide students with opportunities to explore notions of 'quality' for themselves by showing examples of other students' work (suitably anonymised) on similar investigations and encouraging discussion about which pieces of students' work were good and why.

The author is currently undertaking work with teachers putting formative assessment into practice. Some of the self-assessment strategies being employed involve the use of 'traffic lights' or 'smiley faces' for pupils to indicate their level of understanding of the lesson. For example, a green blob indicated good understanding, amber - not sure, and red - didn't understand at all. This has provided useful feedback to the teacher at two levels. Firstly, she could see if there were any parts of the lesson that were worth re-doing with the whole class and secondly, she was able to identify the students who needed individual support. The real benefit was that students were forced to reflect on what they had been learning.

Investigating formative assessment: teaching, learning and assessment in the classroom

Harry Torrance and John Pryor
Open University Press (1998)
ISBN 0-335-19734-5

Here, two examples of teacher use of questioning help to illustrate the emphasis in Inside the Black Box on asking the "right questions."

In another classroom, the teacher enabled her Year 1 pupils to formulate their own questions, using conversation and argument rather than standard evaluative feedback when she was not satisfied with the question they proposed. The teacher retained control of the discussion and determined when a question was sufficiently well formulated to be written down on the flip chart - she did the writing. The following extract from the transcript of the lesson shows how the teacher scaffolded the reformulation of the question by directing the pupils back to what they already knew.

Pupil 1: Do they have schools in Jamaica?

Teacher: Well - what do you think?

Pupil 2: Yes

Teacher: Do you remember- did you see any schools in the books that you looked through?

Pupil 2: Yes

Teacher: Right - is there any question now that you know that they have schools in Jamaica but can you ask a question about the schools in Jamaica?

This part of the discourse lasted for about five minutes and the sentence the teacher wrote was, 'What kind of playgrounds do they have in Jamaican schools?'

Marking and feedback

Michael Ronayne
(1999)

This case study has been selected to show the impact on pupils of different types of teacher feedback.

This study investigated patterns of teachers' feedback and children's perceptions of that feedback, to discover what makes formative assessment an effective learning tool. Data from eight case studies, across the subject and age range, in an 11 to 18 comprehensive school, was gathered from scrutiny of feedback comments, lesson observations and interviews with pupils and teachers. Feedback comments were categorised as:

- organisational
- encouraging
- constructive
- challenging
- 'think'.

The majority of written comments simply encouraged pupils to think again. A large proportion also related to aspects of the task other than the stated learning objectives.

Pupils remembered about one third of written comments, particularly when they were constructive and when they did relate to the learning objectives.

Teachers used verbal feedback with the whole class to teach pupils explicitly how to improve their work. Pupils' recall of this whole class feedback suggested that the more points the teacher raised, the fewer the pupils remembered of the earlier ones. The most successful communication took place when:

- pupils made notes during the feedback
- a model answer was given
- pupils were first re-focused on the task.

When teachers gave individual feedback to pupils, the comments were pertinent to each pupil's response to the task and related precisely to the pupil's starting point. In 60 per cent of these cases, the pupils were able to recall what the teacher had said.

The diagnostic value of self-assessment in geography at Key Stage 4

Meryl King
(1998) MA Summary
TTA Publication

This study has been selected to show how teachers can:

- help pupils to develop self-assessment skills
- encourage them to take responsibility for their own learning.

This study was carried out in an 11 to 18 girls' Roman Catholic comprehensive. The students were encouraged to use self-assessment as an aid to target-setting and learning, and take more responsibility for their own learning.

The teachers showed the students how to use a range of criteria to assess their own work. Teachers identified and explained complex criteria as these often caused difficulties.

Students of all abilities were able to reflect upon their work and make observations. Their marking compared favourably with teacher marking, 78 per cent coming within two marks. Lower achieving pupils tended to under-mark, especially when the marking task was too demanding.

The evidence collected suggested that self-assessment would provide a useful alternative to teacher-assessment as a diagnostic tool. However, while self-recognition of a weakness was likely to motivate a pupil, teacher-assessment was also necessary to encourage students to recognise their own strengths.

The majority of students found self-assessment useful. All did more GCSE revision as a result, and one quarter could identify, without prompting, areas for further study.

Teachers wishing to set up a self-assessment task might like to consider the following suggestions made by the author:

- be prepared to shift control from yourself to the student
- discuss the objectives and learning value of self-assessment with the students
- be diagnostic in your own marking so that students can learn from your example
- provide a prompt sheet to aid reflection
- encourage the students, as they will under-mark when they lack confidence.

The LEARN Project: Learners' Expectations of Assessment Requirements Nationally

Qualifications and Curriculum Authority (QCA)
(2000)

This study shows how pupils' own views of assessment reinforce the messages from Inside the Black Box about the negative impact of some aspects of current assessment practices.

In this study 200 pupils from Year 3 to Year 13, were interviewed to gain insight into their perceptions of the assessments they undertook and how assessment was used to help them improve their work and learning.

The main findings were that:

- students were motivated by internal and external factors, such as age, peer and family expectations, and the way they saw the relevance of the course
- students attributed success to effort, ability and opportunity to learn
- students showed different attitudes to learning: some were keen to understand, some were concerned about their performance without necessarily understanding, while a few demonstrated 'learned helplessness'. Individual students' attitudes were not fixed and varied with age and context
- students usually had a good idea of what to do for individual tasks but were less clear as to how these tasks fitted into the 'big picture' of the course. There was evidence that they were not always receiving the signposting they needed students were often unsure how work was assessed and many reported that only some teachers explicitly shared assessment criteria with them
- students of all ages were dependent on teacher set standards when assessing the quality of their work; many were able to refer to past work to define quality
- there was little evidence of systematic self-assessment and few students reported having the opportunity to develop their knowledge and understanding of this skill
- the quality of feedback was commented on critically by many students
- students were confused by grades for effort and achievement
- feedback that was prompt and delivered orally was preferred.

"How am I doing?" - assessment and feedback to learners

Suffolk Advisory Service

(April 2001)

St Andrew House, County Hall, Ipswich, IP4 4LJ

This study has been selected to show how:

- students can be actively involved in the assessment process
- teachers have used different types of assessment feedback
- assessment can be used to develop pupils' self-esteem
- opportunities have been built in for pupils to express themselves
- teachers have worked towards an achievement culture.

This study summarises a survey of feedback and marking in Key Stages 2 and 3 carried out in Suffolk schools over several months between 2000 and 2001. A team of 19 advisers and advisory teachers were involved and they focused their observations on practice that appeared to be making a discernible difference to pupils' learning. It includes a variety of examples and strategies to show how this was being achieved in different schools, some of which are included here.

We have selected from the LEA report a range of direct quotations from the classrooms that help to give a flavour of the many different ways in which feedback can be used effectively.

Good feedback was seen as an on-going dialogue between pupils and teacher, which helped to develop the self-assessment skills of the learner.

"The marking of folders is like a yo-yo - with the folder going constantly backwards and forwards between the pupil and the teacher " (High School design and technology teacher)

"I'm trying really hard but my writing is not getting neat, have you got a solution?" (KS2 pupil - note to teacher in book)

Much of the best feedback was verbal and developed from informal opportunities as pupils worked. Tone of voice and body language was crucial so that pupils felt at ease and willing to enter into a dialogue, and teachers could use pupils' wrong answers constructively:

"If you've got a different answer don't be afraid to say so." (KS2 numeracy teacher)

The pupils needed to know the learning objectives of the work set and receive feedback that reflected those objectives:

"The teacher tells us what the lesson is about and what the activities are for. At the end of the lesson he gives us a summary. I like that because it tells me what we have learned." (Middle school geography pupil)

"Good, you've identified four things that happen in Gurdwara." (KS2 RE teacher)

"Comments like 'Use paragraphs!' are useless - if I knew how to use them I would have done." (Middle school pupil)

Modelling answers or outcomes was a valuable part of providing feedback.

"It might look like this. "

"Sometimes we hear other people's work read out so it helps you with ideas." (KS2 pupil)

For example, in one art class a 'follow my leader' approach was adopted which allowed a group of pupils to make progress by imitating a step-by-step demonstration provided by the teacher. In English, a commonly used method was to copy a pupil's work onto an OHP (with permission) and then develop and improve it with contributions from the whole class.

Displays of work were effective in illustrating expectations when they were annotated, highlighting the criteria that made a difference:

"This work is at level 3 because ... This work is at level 4 because ..."

The report emphasised the importance of valuing pupils' work and suggested the use of post-its, wrap-arounds, comments in the margin, etc as alternatives to 'defacing' work by writing all over it:

"It looks silly when he writes 'title' in the margin, then I put in the title and the comment is still there."
(Middle school pupil)

"Read your partner's work and then on a post-it mark two ways they could improve it." (KS2 teacher)

Pupils needed time to absorb and act upon or consolidate feedback:

"Today we are going to look at how to make our composition better, how to make improvements to our work." (KS3 music teacher)

Good quality feedback contributed positively to behaviour management; there was evidence that it led to increased motivation and engagement and raised self-esteem:

"That's the kind of question that good scientists ask" (KS2 teacher)

"We will find as writers ..." (KS3 teacher)

In many subject contexts, such as PE and music, feedback could be combined with practical demonstrations:

"Let's watch Sarah play her volley, remember to look for a punching action, facing the net and hitting the ball in front of the body." (KS3 PE teacher)

However, this approach did not always work and it could be de-motivating to ask pupils to demonstrate if they were uncomfortable doing so. There had to be an atmosphere in class where pupils felt they didn't have to get it right all the time and could take risks.

Working in groups was effective when thought was given to the construction of the groups:

"I enjoy working with partners to edit work - but not friends. They won't tell you the truth. It needs to be someone who will be honest with you and help you improve." (KS2 middle school pupil)

Outcomes or written and verbal feedback needed to be used by teachers to plan the next steps of learning and pitch work appropriately for each pupil.

"Pupils are given feedback about how they can improve future investigations. Any common error is immediately followed up with the whole class." (KS3 science teacher)

"If you don't know what they are doing next it's hard to communicate future expectations and set out how

work can be improved." (KS3 teacher)

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Further reading

What else might I enjoy reading?

Black, P. & Wiliam, D. (1998) Assessment and Classroom Learning. *Education: Principles, Policy and Practice*, 5 (1), pp 7-74.

Assessment Reform Group, University of Cambridge. (1999) *Assessment for Learning: Beyond the Black Box*. <http://www.assessment-reform-group.org/AssessInsides.pdf>

Fitz-Gibbon, C. T., Coe, R., Dowson, V. and Goodson, V. (2001) *Experimenting to Improve Practice: Using Randomised Controlled Trials*

Black, P. & Harrison, C. (2001) 'Feedback in questioning and marking: the science teacher's role in formative assessment' *School Science Review* 82, (301), pp.55-61

Wiliam, D. (1999) 'Formative assessment in mathematics, part 1: rich questioning' *Equals: Mathematics and Special Educational Needs*, 5 (2), pp.15-18

Torrance, H. and Pryor, J. (1998) *Investigating formative assessment: teaching, learning and assessment in the classroom*. Buckingham: Open University Press.

Where can I find out more online?

TRIPS: Assessment for learning

http://www.standards.dfes.gov.uk/research/themes/assessment_for_learning/

Digests of research studies on the theme of assessment for learning.

Association for Achievement and Improvement through Assessment (AAIA)

<http://www.aaia.org.uk/>

QCA: Teaching and learning

<http://www.qcda.gov.uk/447.aspx>

Has a very useful section on assessment for learning and includes details of the LEARN project.

Training and Development Agency for Schools

<http://www.tda.gov.uk/>

Copies of all the TDA case studies are available free from the website.

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Appraisal

Robustness

Assessing the robustness of research reviews is even more taxing than assessing individual studies. Inside the Black Box is a summary of a lengthy research review of around 600 papers.

The authors applied systematic selection criteria to the research literature in order to find answers to their three main questions. The research questions themselves are clear and unambiguous and the evidence presented in support of the main hypothesis of the research appears to be robust. As the authors make clear,

the detailed evidence in support of their analysis is contained in the longer review rather than in the short report, and the original data are in fact contained in the separate studies being reviewed.

The review itself has aroused keen interest nationally amongst teachers and academics, so it has been subject to a good deal of academic and professional scrutiny. Following its publication in 1998, the report has also been extensively cited in government, academic and practitioner circles.

Relevance

The studies reviewed are very diverse and the review itself is detailed and technical, as befits a systematic approach to the review process. So it seems sensible from the perspective of teachers' use of the material to concentrate on the summary. Its main theme is that assessment is a fundamental aspect of teaching that crosses all phases, subjects and age ranges. As the authors point out, however, current practice tends towards assessment of rather than assessment for learning. Their report uses the evidence from the review to identify a range of ways in which assessment can be improved, eg, by using pupils' self-assessment and by thoughtful dialogue between pupils and teacher. This lends a practical classroom-based dimension to the report with which many teachers will easily identify. At a time when raising standards is at the top of every school improvement plan, the evidence presented in this report for the efficacy of formative assessment in raising standards is likely to be of considerable interest to all teachers.

Applicability

Teaching and learning are at the heart of the report. Assessment is defined as "all those activities undertaken by teachers, and by their students in assessing themselves, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged".

The report refers to the evidence about how to improve formative assessment, using, for example, feedback, self-assessment and appropriate exercises. Unfortunately, as the authors point out, there is little detail in the many studies they reviewed about the actual classroom methods, the motivation and experience of the teachers, the nature of the tests used as measures of success, or about the outlooks and expectations of the pupils involved. This means that there are no illustrations and examples accompanying the various sections, which inevitably gives the report a rather abstract feel.

Writing

The authors use a simple and approachable style of writing, and, at 21 pages, the report is not a daunting prospect. The text is written in such a way as to enable most teachers to relate it to their practice. The findings have been clearly identified and presented without including the supporting technical data and statistical analyses that accompany the main report.

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