

Module 13

Reflection

Reflection

Objectives

- To understand the importance of pupils reflecting on learning
- To identify a vocabulary of useful thinking and learning words for foundation subjects

This module will be useful for:

- departments or groups of staff who want to develop pupils' understanding of thinking and learning;
- senior managers responsible for staff development, teaching and learning or raising attainment;
- inspectors, advisers and advisory teachers who work in the area of school improvement.

Resources

- OHTs 13.1–13.4
- Handouts 13.1–13.7 (Handout 13.6 is OHT 13.4.)
- Appendix 13.1, Pre-course task
- Flipchart and pens

Session outline

75 minutes

13.1	The importance of reflection	20 minutes
13.2	Developing a vocabulary about thinking and learning	25 minutes
13.3	Developing a language for learning in art and design	25 minutes
13.4	Ready for more?	5 minutes

Notes for presenters

'Thinking' has a great many meanings. In the context of thinking skills, it relates to cognitive activity triggered by challenging tasks and problems. We are thinking most of the time but usually this is a very routine activity. If we have set out our clothes the night before, dressing in the morning does not take much thought. We have to think much harder when we tackle a problem that is at the limits of what we can do. If we come home late at night to an empty house and we are locked out, we have to start thinking much more consciously of what to do. In such circumstances it is helpful if we start to monitor and regulate our thinking. Thinking about thinking is termed **metacognition**.

We must constantly seek to push pupils to the limits of what they can do. Assessment seeks to help close the gap between what pupils can do and what they need to do to achieve better results. Metacognition should be an important component of improving pupil performance.

Pre-course task

Appendix 13.1 contains instructions for a pre-course task and should be photocopied and distributed to all participants at least a week prior to the session.

13.1 The importance of reflection

20 minutes

Show **OHT 13.1** and discuss the objectives.

Objectives OHT 13.1

- To understand the importance of pupils reflecting on learning
- To identify a vocabulary of useful thinking and learning words for foundation subjects

Show **OHT 13.2**.

The importance of reflection OHT 13.2

- Reflecting on learning helps thinking and learning.
- Reflection is particularly important when tackling challenging tasks.
- Thinking about learning is hard without words.
- Opportunities for reflection need to be planned.
- Reflection promotes skills needed both for tests and for meeting challenges in everyday life.

Make these points:

- Reflecting on learning helps pupils become more aware of their thinking and learning. Thinking about thinking and learning is termed **metacognition**.
- Metacognition is particularly important when pupils are doing difficult tasks and reviewing their strategies and progress.
- Thinking about learning is very difficult without words to describe the processes.
- Opportunities for reflection should be planned into lessons.
- Reflection gives teachers an insight into skills, knowledge and understanding relevant for examinations, and into other learning outcomes that are not addressed in tests.

Arrange participants into groups of four. Ensure that they know what a 'mystery' is – an open question to be answered by using information on 15–30 small slips of paper, some of which may be irrelevant or misleading. Ask the groups to read the extracts in **handout 13.1** and consider what benefits pupils get from the awareness they are expressing. Do pupils in their school/department/classroom have this level of awareness of strategies and learning?

Pupils' reflections on learning Handout 13.1
in lessons

A Year 8 geography class has been studying a mystery about tensions and problems in town-city areas. In the plenary they are asked to identify the assumptions they have made in deciding who smashed a car windscreen, on the basis of incomplete evidence.

T What do you think you learned during that lesson?

MP1 We learned about assumptions. We shouldn't just rush into deciding something without thinking carefully.

MP2 Yeah, you thought you were right and then you had to think about it and you weren't so sure, especially when you listened to other groups.

ME How did the teacher help you?

FP1 The teacher kept saying, 'Do you really know that?' or 'Is it a fact?' Usually we were wrong, went out of it.

MP2 You had to have evidence to back it up. Not in a court... like a trial.

FP1 At the end you could see how lots of things didn't. People think they are right, but they don't think, not really. It was funny when the teacher talked about rights, he used to mess with the teacher, just like me and my mate.

A history teacher asked pupils about methods of learning to, and making sense of, information. One pupil writes notes and one pupil drew sketches and symbols. (Belongence to the examiner means a pupil who did not write or draw during the teacher's reading.)

FP1 Well, with drawing... if you have to draw about specific you can draw really silly pictures of what you're supposed to be drawing and they stick in your mind because they're funny.

FP2 I think drawing's not a very good way because there are things you can't draw when you (the teacher) are saying it.

T Give me an example.

FP2 The names of someone.

MP1 A mixture of drawing and writing is good, and if you say it back to someone it shows you understand it.

T Right, what's taking hold?

MP1 Like with the examiner. We say it back to them, which kind of makes you understand how you write it down and how you get it into your memory.

Key: **T** = teacher **MP** = male pupil **FP** = female pupil **ME** = examiner

After 10 minutes, stop the discussion. Ask each group to provide one point about the advantages of such awareness.

Take feedback, recording ideas on a **flipchart**. Use **OHT 13.3** to highlight the key points.

Advantages of awareness of learning OHT 13.3

- Independent learning requires the learner to be able to monitor and regulate their learning.
- Knowing more about learning makes it less of a mystery and affects confidence and self-esteem.
- Reflection helps generalising about learning.
- Generalising helps to transfer learning and helps pupils to make connections between subjects.

13.2 Developing a vocabulary about thinking and learning

25 minutes

Explain that in most tasks we do, strategies and thinking are implicit. Making implicit thinking more explicit is important in developing metacognition in pupils and helping them learn from one another.

Distribute **handouts 13.2 and 13.3**.

The flat-pack wardrobe task Handout 13.2
(This activity was devised by Rachel Littlehouse of Newcastle University)

Instructions
 Work in pairs.

First person
 You have just moved 25 miles to your home from a famous furniture store with a flat pack wardrobe. When you unpack it at home, you find that there are no instructions. You can't face driving back to the store, so you go ahead and put it together. Think out loud and describe how you would go about putting the wardrobe together.

Second person
 Use the 'unpacking thinking' sheet (handout 13.3) and, in the left-hand column, make notes on the processes, strategies and stages your partner describes. Your job is to listen, not to take over – resist yourself to little prompts. When your partner has finished, generate some 'thinking words' to put in the right-hand column that describe the processes you or he has used, for example visualised, classified, etc. Your partner can assist you and say whether the words are an appropriate description.

Advantages of awareness of learning OHT 13.3

- Independent learning requires the learner to be able to monitor and regulate their learning.
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- Reflection helps generalising about learning.
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Allow about 10 minutes for the task, then take feedback. There will be a wide variation in how it is completed. Distribute **handout 13.4**, which could be used as a general guide.

Unpacking thinking 2 Handout 13.4

Description of stages and strategies for constructing the wardrobe	Thinking words (metacognitive language), e.g. visualising, sorting, comparing
Decide where wardrobe is going and how to fit in the room	Forward planning, contextualising, problem
Think about tools that are needed	Planning
Assemble tools	Getting organised, visualising
Unpack box and label pieces, including hinges, screws, etc.	Checking, naming, labelling, identifying
Check picture on the box	Visualising
Work out a rough order of steps	Organising, problem-solving
Ask someone for help, looking and holding pieces	Planning, seeking practical help and guidance
Phone a friend to ask advice	Checking, seeking information/support
Start with the base, add sides and back. Pressed fit on	Implementing, doing the main parts
Check stability	Checking, monitoring, reviewing
Think about the order of the inside pieces	Planning, visualising
Have a rest	Reflecting, organising
Put in shelves/rails	Doing the detail
Put on doors/drawers	Finishing, doing detail
Adjust screws, giving it a push	Completing, testing, refining, reviewing
Look at it, admire it	Appreciating, taking notes
Move furniture and put in position in room	Locating, contextualising

Make these points:

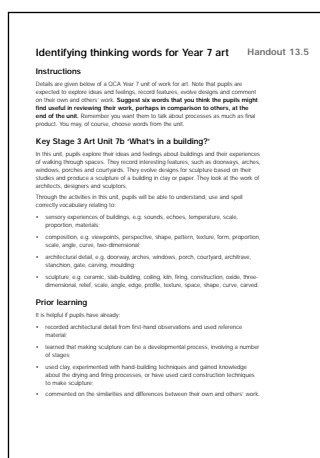
- The wardrobe task shows that we can think carefully when we are stuck.
- It is helpful to check and refine thinking.
- We use our existing knowledge.
- In real life putting together the wardrobe is likely to be more successful if it is planned and thought through than if we use impulsive trial and error.

- Although we can describe how we would do the task, the identification of the thinking words helps make the process much more explicit and opens it up to scrutiny, reflection and regulation.
- Knowing that such strategies and stages are a possibility opens up new avenues in thinking and learning. However, our ability to do this is largely dependent on having words to do so.

13.3 Developing a language for learning in art and design

25 minutes

Organise participants into groups of three. Distribute **handout 13.5**, which contains an extract from the DfES/QCA Key Stage 3 art scheme of work, Unit 7b 'What's in a building?' and instructions for the task.



Point out that this task is **not** to select the best six words. Participants need to give some thought to what vocabulary is needed to give pupils access to thinking about thinking – reflecting. If encouragement is needed, suggest that words generated in the wardrobe task might be valuable. It may be helpful to suggest that pupils would go through a number of stages.

Stage	Possible words
1 collecting information and ideas or responding to stimulus	identify, recognise, response
2 generating ideas and designs	imagine, visualise, adapt, experiment, define, metaphor
3 realising designs	translate, interrelate, synthesise
4 checking or refining	reorganise, contrast, stereotype
5 evaluating	meaning, assess, compare, analyse

Encourage participants to make links to their own subject. Accept that art teachers may be using a more subject-related vocabulary.

Allow about 10 minutes for discussion. Then take a number of suggestions from groups for appropriate words. You might collate the suggestions on a flipchart under the stages in the table above.

13.4 Ready for more?

5 minutes

Use **OHT 13.4** (also distribute it as **handout 13.6**) to suggest ways forward.

Promoting reflection and metacognition OHT 13.4/Handout 13.6

Identifying and using thinking words

- Identify thinking words for your subject, which are appropriate for your pupils.
- Display some thinking words on A4 pieces of paper, complete with definitions, and, after a suitable activity, allow pupils to choose words which match their mental processes.
- Plan opportunities to develop the use of these words in plenaries.

Developing reflection and metacognition

- Model some thinking processes and label your mental processes for pupils.
- Encourage pupils to think and talk about thinking processes and strategies they might use before they tackle a problem.
- Encourage them to identify occasions when they use particular processes out of school.
- Give pupils opportunities to think and talk about their work in small groups before they are asked to contribute to whole-class discussion.
- Give pupils learning logs to record their thoughts on what and how they have learned.

Finish by distributing **handout 13.7**. This is an initial list of words to stimulate planning a vocabulary of thinking for pupils.

Thinking words Handout 13.7

adapt	evidence	predict
analogy	examine	practise
apply	experience	recall
assess	experiment	recall
assumption	explain	recognise
attitude	extrapolate	reconstruct
belief	formulate	refine
clarify	hypothesise	reflect
classify	identify	reorganise
combine	image	response
compare	imagine	scan
compose	implement	sequence
consider	interpret	short-term memory
contrast	integrate	skim
contradiction	judge	specification
contrast	justify	stereotype
convert	juxtapose	stimulus/stimulate
decide	link	structure
decipher	long-term memory	summarise
decode	meaning	symbol
define	metaphor	synthesise
design	model	transform
develop	negotiate	translate
differentiate	organise	trigger
distinguish	paraphrase	visualise
evaluate	plan	

Reflection is important if pupils are to understand more fully what and how they have learned. It is one way in which pupils can develop a language about learning. With this awareness they are more likely to become independent learners – better equipped for lifelong learning.

Before the session, arrange to interview pupils about their learning. It is usually most effective to interview pupils from another teacher's class and, ideally, from a lesson that you have observed or seen on video. Interviewing pupils often gives valuable knowledge about whether they are developing insight into their own thinking and learning strategies. The following points provide guidance on how to interview pupils.

- Interview two or three pupils together as an individual may feel awkward and the small group allows each pupil a bit of 'think time' and the chance to respond to their peers' thoughts.
- Try to arrange the interview as soon as possible after the lesson.
- Find a quiet place where you will not be disturbed – a classroom is not ideal.
- Reassure them that they have not done anything wrong and explain that you are interested in their views as a way of improving lessons in the school.
- If possible, tape-record the interview, but clear this with the pupils first.
- Tell the pupils that you are interested in what they have learned in the lesson concerned and spend the first few minutes on pleasantries that help them relax.
- You can start with the big question of 'What did you learn in that lesson?' but you will need to do a lot of supplementary prompting such as 'anything else?' and 'explain that a bit more' and 'what about the next bit of the lesson?'
- If time allows, you can ask what helped them learn the things that they have identified.
- You can get them to summarise by asking, 'If you were asked at home tonight what you had learned in ..., what would you say?'
- Thank them at the end of the interview – you may feel that you can summarise for them what they have said and see if they agree.

It is likely that replaying the tape will be necessary to get a clear picture of their views. If you have the resources, and others are interested, a transcript may be useful. Note, however, that as a rough guide, every minute of interview takes a good typist about 8 minutes to transcribe.

Experience suggests that where pupils have had no chance to reflect on their learning and thought processes, their accounts of learning outcomes are dominated by describing lesson content. Where teachers have made learning more explicit, used collaborative groups and conducted whole-class plenaries which focus on processes, the pupils' accounts of learning outcomes are broader and include greater awareness of how learning has been achieved.

Interviewing and consulting pupils can have a wider relevance for improving teaching and learning and could form part of sampling and self-evaluation processes.

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The importance of reflection

OHT 13.2

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OHT 13.3

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Promoting reflection and metacognition

OHT 13.4/Handout 13.6

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- Model some thinking processes and label your mental processes for pupils.
- Encourage pupils to think and talk about thinking processes and strategies they might use before they tackle a problem.
- Encourage them to identify occasions when they use particular processes out of school.
- Give pupils opportunities to think and talk about their work in small groups before they are asked to contribute to whole-class discussion.
- Give pupils learning logs to record their thoughts on what and how they have learned.

Pupils' reflections on learning in lessons

Handout 13.1

A Year 8 geography class has been studying a mystery about tensions and problems in inner-city areas. In the plenary they are asked to identify the assumptions they have made in deciding who smashed a car windscreen, on the basis of incomplete evidence.

T What do you think you learned during that lesson?

MP1 We learned about assumptions, like you shouldn't just rush into deciding something without thinking carefully.

MP2 Yeah, you thought you were right and then you had to think about it and you weren't so sure, especially when you listened to other groups.

Int How did the teacher help you?

FP1 The teacher kept saying, 'Do you really know that? Is it a fact?' Usually we were wrong, well, sort of.

MP2 You had to have evidence to back it up, like in a court ... like a trial.

FP1 At the end you could see how lots of fights start. People think they are right, but they don't think, not really. It was funny when the teacher talked about fights he used to have with his brother, just like me and my sister.

A history teacher asked pupils about methods of listening to, and making sense of, information. One pupil wrote notes and one pupil drew sketches and symbols. (References to the examiner mean a pupil who did not write or draw during the teacher's reading.)

FP1 Miss, with drawing ... if you have to draw dead quickly, you can draw really silly pictures of what you're supposed to be drawing and they'll stick in your mind because they're funny.

FP2 I think drawing's not a very good way because there are things you can't draw when you [the teacher] are saying it.

T Give me an example.

FP2 The name of someone.

MP1 A mixture [of drawing and writing] is good, and if you say it back to someone it shows you understand it.

T Right, when? Using both?

MP1 Like with the examiner. We say it back to them, which kind of makes you understand how you wrote it down and how you got it into your memory.

Key: **T** = teacher; **MP** = male pupil; **FP** = female pupil; **Int** = interviewer

The flat-pack wardrobe task

Handout 13.2

(This activity was devised by Rachel Lofthouse of Newcastle University.)

Instructions

Work in pairs.

First person

You have just driven 25 miles to your home from a famous furniture store with a flat-pack wardrobe. When you unpack it at home, you find that there are no instructions. You can't face driving back to the store, so you go ahead and put it together. Think out loud and describe how you would go about putting the wardrobe together.

Second person

Use the 'Unpacking thinking' sheet (handout 13.3) and, in the left-hand column, make notes on the processes, strategies and stages your partner describes. Your job is to listen, not to take over – restrict yourself to little prompts. When your partner has finished, generate some 'thinking' words to put in the right-hand column that describe the processes she or he has used, for example visualised, classified, etc. Your partner can assist you and say whether the words are an appropriate description.

Description of stages and strategies for constructing the wardrobe	Thinking words (metacognitive language), e.g. visualising, sorting, comparing

Unpacking thinking 2

Handout 13.4

Description of stages and strategies for constructing the wardrobe	Thinking words (metacognitive language), e.g. visualising, sorting, comparing
Decide where wardrobe is going and take box to the room	Forward planning, contextualising problem
Think about tools that are needed	Planning
Assemble tools	Getting organised, resourcing
Unpack box and label pieces, including hinges, screws, etc.	Checking, naming, labelling, identifying
Check picture on the box	Visualising
Work out a rough order of steps	Sequencing, problem solving
Ask someone to help finding and holding pieces	Planning, seeking practical help and guidance
Phone a friend to ask advice	Checking, seeking information/support
Start with the base, add sides and back, then put top on	Implementing, doing the main parts
Check 'solidity'	Checking, monitoring, reviewing
Think about the order of the inside pieces	Planning, visualising
Have a rest	Reflecting, regrouping
Put in shelves/rails	Doing the detail
Put on doors/knobs	Finishing, doing detail
Tighten screws, giving it a push	Completing, testing, refining, reviewing
Look at it, admire it	Appreciating, taking stock
Move furniture and put in position in room	Locating, contextualising

Instructions

Details are given below of a QCA Year 7 unit of work for art. Note that pupils are expected to explore ideas and feelings, record features, evolve designs and comment on their own and others' work. **Suggest six words that you think the pupils might find useful in reviewing their work, perhaps in comparison to others, at the end of the unit.** Remember you want them to talk about processes as much as final product. You may, of course, choose words from the unit.

Key Stage 3 Art Unit 7b 'What's in a building?'

In this unit, pupils explore their ideas and feelings about buildings and their experiences of walking through spaces. They record interesting features, such as doorways, arches, windows, porches and courtyards. They evolve designs for sculpture based on their studies and produce a sculpture of a building in clay or paper. They look at the work of architects, designers and sculptors.

Through the activities in this unit, pupils will be able to understand, use and spell correctly vocabulary relating to:

- sensory experiences of buildings, e.g. sounds, echoes, temperature, scale, proportion, materials;
- composition, e.g. viewpoints, perspective, shape, pattern, texture, form, proportion, scale, angle, curve, two-dimensional;
- architectural detail, e.g. doorway, arches, windows, porch, courtyard, architrave, stanchion, gate, carving, moulding;
- sculpture, e.g. ceramic, slab-building, coiling, kiln, firing, construction, oxide, three-dimensional, relief, scale, angle, edge, profile, texture, space, shape, curve, carved.

Prior learning

It is helpful if pupils have already:

- recorded architectural detail from first-hand observations and used reference material;
- learned that making sculpture can be a developmental process, involving a number of stages;
- used clay, experimented with hand-building techniques and gained knowledge about the drying and firing processes, or have used card construction techniques to make sculpture;
- commented on the similarities and differences between their own and others' work.

Promoting reflection and metacognition

OHT 13.4/Handout 13.6

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Thinking words

Handout 13.7

adapt	evidence	predict
analogy	examine	prioritise
apply	experience	realisation
assess	experiment	recall
assumption	explain	recognise
attitude	extrapolate	reconstruct
belief	formulate	refine
clarify	hypothesise	reflect
classify	identify	reorganise
combine	image	response
compare	imagine	scan
compose	implement	sequence
consider	interpret	short-term memory
context	interrelate	skim
contradict(ion)	judge	specification
contrast	justify	stereotype
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decide	link	structure
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