

## Module 5

*Explaining*



# Explaining

## Objectives

- To demonstrate the significance of explaining as a teaching skill
- To show how teachers can analyse the quality of explanations
- To demonstrate the principles of planning explanations

## Resources

- OHTs 5.1–5.4
- Handouts 5.1–5.5 (Handout 5.1 is a pre-course task which should be completed by participants before the session.)
- Video sequence for this module
- Flipchart and pens

## Session outline

75 minutes

|     |   |            |
|-----|---|------------|
| 5.1 | Introduction                                  | 5 minutes  |
| 5.2 | Types of explanation                          | 15 minutes |
| 5.3 | Understanding characteristics of explanations | 10 minutes |
| 5.4 | Watching video of explanation                 | 10 minutes |
| 5.5 | Feedback on video                             | 15 minutes |
| 5.6 | Planning explanations                         | 15 minutes |
| 5.7 | Ready for more?                               | 5 minutes  |

## Notes for presenters

Few teachers appreciate the importance of explaining as a skill, and it rarely features in initial teacher training. Pupils think explaining is the most important teacher skill. In the pilot, experienced teachers have spent time videoing themselves explaining and subsequently planning improvements. You need to make clear the importance of explaining – it is at the heart of teacher effectiveness. The detail provided in this module is needed so that teachers can improve their planning of explanations and help others to do so, perhaps through a coaching or middle-management role.

It would be valuable if you could draw upon the experience of a teacher who has worked on his or her explanations and who can testify to the value of making the effort.

Most of this module draws upon *Explaining in the secondary school*, by E. C. Wragg with G. Brown (Routledge/Falmer), which is a useful text to supplement the module.

## 5.1 Introduction

5 minutes

Ensure that participants have completed and brought with them the pre-course task on **handout 5.1**.

**Pre-course task** Handout 5.1

If possible, do part A first, then part C. If part A is not possible, do part B first, then part C.

**Part A**

Identify a lesson in which you will give an explanation. Try to answer these questions before the lesson.

- What are you trying to explain?
- What are the key things that pupils should understand or know if the explanation is to succeed?
- What examples, analogies, stories, visual aids or other devices will you use in the explanation to help pupils understand?

After the lesson, add to or comment on your answers in the light of your reflection on the lesson.

**Part B**

Do this part only if you will be teaching a lesson with an explanation in it. Arrange to observe a lesson in which a colleague plans to use an explanation.

- What was being explained?
- From your observation – what were the key things to be understood from the explanation?
- What examples, analogies, stories, visual aids or other devices were used, and did these approaches contribute to the impact of the explanation on the pupils, as far as it is possible to judge?

If the opportunity arises, discuss your observations with the teacher whom you have observed.

**Part C**

Make a list of three things you have explained recently in teaching. If possible, make it a varied list.

Think of an explanation that you will plan and deliver to one other person on the course.

Use **OHT 5.1** to start the session.

**Objectives** OHT 5.1

- To demonstrate the significance of explaining as a teaching skill
- To show how teachers can analyse the quality of explanations
- To demonstrate the principles of planning explanations

Make these points:

- Explaining is a neglected skill, especially in comparison to questioning.
- A survey of 200 pupils by Wragg in 1989 on the importance of 32 teaching skills had explaining in first place.
- Explaining may be defined as 'giving understanding to another'. This shows how important it is in teaching as there are many things that are difficult or impossible for pupils to understand without explanation. For example, abstract concepts, events in the past or those outside pupils' experience, principles, rules and important ideas are all unlikely to be discovered by pupils without assistance.
- Pupils' understanding of explanations depends on the same principles that underpin most learning. We understand things through experience and by connecting new information to the framework of what we already know.

When explaining, teachers should:

- help pupils to use what they already know and have experienced;
- provide concrete experiences in the classroom to help pupils who may lack adequate experience;
- be as clear and effective as possible in communication;
- check for understanding and allow pupils to rehearse their understanding.

## 5.2 Types of explanation

15 minutes

Explanations vary in content and objectives. However, identifying particular types of explanation aids planning and the sharing of good practice.

Show **OHT 5.2**.

**Types of explanation** OHT 5.2

- Concepts
- Similarities and differences
- Cause and effect
- Purposes
- Processes

Distribute **handout 5.2**. Ask participants to read and discuss it, so that they are familiar with the definitions.

**Types of explanation** Handout 5.2

**Concepts**  
Concepts are groups or classes of things. Sometimes important concepts are defined for pupils, but not necessarily understood. It is useful to subdivide concepts as follows:

**Concrete familiar** – terms in everyday use and observable, for example (leaf) water, beach, etc.

**Abstract familiar** – terms in everyday use but not easily observable, for example design, democracy, health, flow (in dance), etc.

**Concrete technical** – terms used by specialists but observable, for example thermocoupling pipette, moulding, etc.

**Abstract technical** – terms used by specialists but not observable, for example chromatography, etc.

Abstract concepts usually need the most explaining because they are not experienced through the senses. Similarly, technical concepts often need explaining because they are not commonly used. This classification helps in planning explanations – concrete concepts can often be demonstrated with a small aid. For abstract concepts, you may need to draw on experiences familiar to pupils to build that understanding.

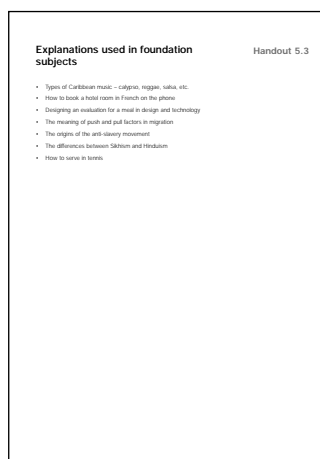
**Similarities and differences**  
This type of explanation is aimed at linking concepts but goes further in distinguishing between concepts and in putting them together in groups. It is important in establishing and clarifying classifications, for example the similarities and differences between birds such as Christmas, Quail and Pheasant.

**Cause and effect**  
The pattern in these explanations is how one thing leads to another in a causal sequence. It is more difficult to explain events that are the result of a combination of factors, such as the outbreak of a war or the origins of an artistic movement.

**Purposes**  
It is often important to explain why things are done and what they are to achieve. This might be appropriate at the beginning of a lesson, piece of work or topic so that pupils are clear about the objectives, for example outlining the reasons for studying musical circles.

**Processes**  
The focus of process explanations is on how things happen or work – there is an emphasis on sequence. Examples could include how one plays a footballer's circle in tennis or plays an Indian rhythm in music.

Arrange participants in groups of three or four and ask them to share their three explanations from part C of the pre-course task. They should try to classify them, using the categories in handout 5.2. (For anyone who has been unable to do part C, offer **handout 5.3** as a substitute and basis for discussion.)



After 10 minutes, ask groups to give a few examples of their explanations and how they have been classified. Acknowledge that there are overlaps between types because different teachers will focus on different aspects. Further categories or subdivisions can be added to accommodate particular examples. This discussion will establish whether participants have begun to build a classification system for explanations which allows them to share practice.

Taking into account the point about possible overlap of categories, the examples in handout 5.3 can be categorised as follows:

- Types of Caribbean music
  - This is a **similarities and differences** explanation, but detail about a particular type of music, say calypso, might make it a **concept** explanation.
- How to book a hotel room in French on the phone
  - This is a **process** explanation, especially if one is outlining issues to ask about – double or single room, en suite facilities, breakfast included, price, etc. However, the purpose of this activity in MFL is to teach the appropriate vocabulary and idioms involved in another language (**knowledge**).
- Designing an evaluation for a meal in design and technology
  - This is an interesting example, as it could be classified as **process**, **purpose** or **concept** depending on the emphasis. It would be a process explanation if the spotlight is on the stages one should go through, a purpose explanation if the focus is why one evaluates, and a concept explanation if the emphasis is on the nature of evaluation. This illustrates the importance of planning explanations.
- The meaning of push and pull factors in migration
  - This is a **concept** explanation with an element of **similarities and differences**.
- The origins of the anti-slavery movement
  - This is a **causal** explanation.
- The differences between Sikhism and Hinduism
  - This is a **similarities and differences** explanation.
- How to serve in tennis
  - This is a **process** explanation.

## 5.3 Understanding characteristics of explanations

10 minutes

Show **OHT 5.3** and distribute **handout 5.4**. Discuss the characteristics of explanations with participants.

|   |         |
|---|---------|
| <b>Characteristics of explanations</b>  | OHT 5.3 |
| <ul style="list-style-type: none"><li>• Keys</li><li>• The 'tease' or hook</li><li>• Use of voice and body</li><li>• Signposts</li><li>• Props</li><li>• Humour</li><li>• Examples and non-examples</li><li>• Connections to pupils' experience</li><li>• Questions</li></ul> |         |

|   |             |
|---|-------------|
| <b>Characteristics of explanations</b>  | Handout 5.4 |
| <b>Keys</b><br>The keys in an explanation are critical to understanding. They may include an example or analogy, a component concept, an idea or generalisation. An explanation will often have a series of linked keys and identifying and sequencing them is important in planning explanations. The keys will often be the core of the summary.  | 1 of 2      |
| <b>The 'tease' or hook</b><br>Explanations benefit from a start that grabs interest and attention. 'Hooks and teases' include the example of 'in a minute I'm going to tell you why you can't call elephants and animals any more...' as a model for explaining how to avoid detail overload. They draw the parallel with radio and TV programmes which start with quirky statements of the form, to keep you listening.<br>The hook can be a starting fact that is not obviously connected to the topic, an unusual way of representing the topic, a personal story or a connection to pupils' lives.  |             |
| <b>Use of voice and body</b><br>There are many ways in which intonation of the voice and body language can be used to emphasise certain points. The voice can be monotonous and dull, or varied and engaging. The hands can be used to point, gesture and emphasise, but small indications of the body can also be important. A teacher was once challenged by his pupils to sit on his hands for the whole lesson. He accepted the challenge but gave in after ten minutes. He found that having pupils to use his hands was impossible; he soon felt that his memory was not working properly and he could not think what he wanted to say. |             |
| <b>Signposts</b><br>Parts of the explanation can be signalled with such phrases as: 'what is really important to understand...' or 'we are going to go through these stages in this process: first... or 'to summarise, what we have been talking about...'   |             |
| <b>Props</b><br>A picture (perhaps from an ICT source), a concrete object or a demonstration can add to the power of an explanation as it captures attention and focuses pupils' minds. For example, a balloon is a wonderful resource in geography for explaining pressure differences.  |             |

|   |             |
|---|-------------|
| <b>Humour</b><br>Humour helps to keep attention and may help some things to stick. If explaining how to throw a ball up in the air to serve in tennis, you could add that you don't throw the ball up there; you don't want it coming down with you! The adult something to an otherwise pedestrian remark.   | Handout 5.4 |
| <b>Examples and non-examples</b><br>Examples are crucial in explanations, especially in establishing understanding of concepts or principles. Non-examples can be as important in establishing the boundaries of an idea or concept. So if explaining what an insect is, using the example of an ant and a bee will be important perhaps with a usual ant, but so will the use of spiders as a non-example. There are several possible patterns in explanation: <ul style="list-style-type: none"><li>• example, example, re-identification</li><li>• re-identification, example, example</li></ul>   | 2 of 2      |
| <b>Connections to pupils' experience</b><br>Explanations rely primarily on providing either a first-hand experience for pupils as a basis for understanding or an opportunity to use their existing knowledge. Using some common experience or knowledge can be a vital building block in an explanation. For example, in design and technology pupils could be asked: 'Have you ever sat in an uncomfortable chair?' as part of explaining the evaluation of design products. In history a teacher could say: 'You know what it is like when you lose in a sports match or do badly in a test?' as a key for explaining some of the effects of the Treaty of Versailles. |             |
| <b>Questions</b><br>As a general rule, asking truly open questions during an explanation often shows the explanation and takes it off course. Open questions have any number of acceptable answers and you cannot predict when the pupil response will take you. If you have planned an explanation with several important facts, starting with the 'open-ended' answer can be distracting. However, an open question may be appropriate if you are explaining a very important issue or concept over a longer period.  |             |

## 5.4 Watching video of explanation

10 minutes

Provide this information about the video:

- The video shows a Year 8 mixed-ability art lesson at Canon Lee School, York, and a Year 8 mixed-ability geography lesson at the Minster School, Southwell, Nottinghamshire.
- The art lesson comes in a unit on ancient worlds and the geography lesson is about weather – pressure and wind.

Show the **video sequence**. Ask participants to note:

- those things that helped understanding (remind participants of points in handout 5.4);
- any things which were distracting, unclear or hard to understand.

## 5.5 Feedback on video

15 minutes

Ask participants to go back into groups to share thoughts and relate their observations to the characteristics of explanations.

Take feedback from each group. Each group should give two positive points and any distracting or unclear features. Note comments on the **flipchart**. Reinforce the importance of the characteristics. Use the following points to support discussion.

In the art lesson:

- there is a clear signpost – a sequence to add to the sculptured head (referred to as a matchstick and light bulb);
- the keys are the soggy arm to make the nose, the fish and chips for the forehead and the headless snake for the jaw;

- there are several hooks – ‘biting off the arm’, ‘the cleaners won’t like me’ – and the keys act as further hooks;
- there is considerable voice emphasis and use of hands and body to illustrate the keys;
- the props used are the teacher’s forearm and various shaped pieces of newspaper;
- humour is ever-present;
- there are strong connections to pupils’ experience – shapes they are familiar with.

In the geography lesson:

- a signpost is provided in the lesson introduction;
- the keys are:
  - atmospheric pressure;
  - high pressure and low pressure;
  - that wind results from differences in pressure;
- voice emphasis is present although less pronounced than in the art lesson;
- props are provided by the balloon and the diagrams;
- pupils are provided with first-hand experience through the balloon demonstration.

## 5.6 Planning explanations

15 minutes

The main characteristics of explanations can be used as a basis for planning. Teachers will not be expected to plan all their explanations immediately. However, planning explanations is an excellent investment as they can be used repeatedly.

Put participants in pairs. Participants should spend 3 or 4 minutes planning an explanation for their partner. The explanations need not be perfect; participants should just concentrate on identifying some of the important keys and perhaps including one other feature. Pairs should just exchange the explanation or part of it.

Discuss the outcomes from the task, particularly which features are likely to improve explanations and which features would be harder to plan for. Note contributions on a flipchart.

## 5.7 Ready for more?

5 minutes

Tell participants that it can be valuable to make pupils aware that the teacher is giving them an explanation, and even to indicate the type of explanation. Over time some of the characteristics of explanations such as keys, linkage, signposts, examples and connections to experience can be shared with pupils, to help them write explanations. This can reinforce departmental work on literacy. Re-emphasise that pupils rate explanation as the number one teacher skill. Often, pupils may not understand things because they have not been explained, or not explained well enough.

Explanations are an appropriate focus for departmental development, updating in schemes of work, staff induction, performance management, coaching programmes, school improvement groups and so on. Explanations are of paramount significance. Show **OHT 5.4** and distribute **handout 5.5** to conclude the session.

**Ready for more?** OHT 5.4

Possible next steps are:

- more deliberate (and perhaps collaborative) planning of explanations;
- observation or video recording of explanations so that they can be analysed, reflected upon and improved;
- studying pupils' work for signs of things that are not well understood, so that particular areas can be targeted for better explanations.

**First steps in improving explanations** Handout 5.5

**General**

- Examine one unit of work and identify what concepts should be clearly explained to pupils.
- Discuss how these concepts are explained.

**In relation to types of explanation**

- Concepts: Use pupils' examples and non-examples that will be familiar to pupils.
- Similarities and differences: Use a Venn diagram to show what is similar in overlapping parts and different in separate parts.
- Cause and effect: Work out a clear sequence of linked points in a linear causal explanation. Use a concept map to show how a number of factors interrelate in more complicated explanations, for example the causes of the First World War.
- Purpose: Make connections to pupils' experience to help explain the purpose of a piece of work. For example, how health and safety principles in a workshop apply equally to organising most sports.
- Processes: Think how you can model processes for pupils.

# Objectives

OHT 5.1

- To demonstrate the significance of explaining as a teaching skill
- To show how teachers can analyse the quality of explanations
- To demonstrate the principles of planning explanations

# Types of explanation

OHT 5.2

- Concepts
- Similarities and differences
- Cause and effect
- Purposes
- Processes

# Characteristics of explanations

OHT 5.3

- Keys
- The 'tease' or hook
- Use of voice and body
- Signposts
- Props
- Humour
- Examples and non-examples
- Connections to pupils' experience
- Questions

## Ready for more?

OHT 5.4

Possible next steps are:

- more deliberate (and perhaps collaborative) planning of explanations;
- observation or video recording of explanations so that they can be analysed, reflected upon and improved;
- studying pupils' work for signs of things that are not well understood, so that particular areas can be targeted for better explanations.

# Pre-course task

## Handout 5.1

If possible, do part A first, then part C. If part A is not possible, do part B first, then part C.

### Part A

Identify a lesson in which you will give an explanation. Try to answer these questions before the lesson.

- What are you trying to explain?
- What are the key things that pupils should understand or know if the explanation is to succeed?
- What examples, analogies, stories, visual aids or other devices will you use in the explanation to help pupils understand?

After the lesson, add to or comment on your answers in the light of your reflection on the lesson.

### Part B

(Do this part only if you will not be teaching a lesson with an explanation in it.)

Arrange to observe a lesson in which a colleague plans to use an explanation.

- What was being explained?
- From your observation – what were the key things to be understood from the explanation?
- What examples, analogies, stories, visual aids or other devices were used, and did these approaches contribute to the impact of the explanation on the pupils, as far as it is possible to judge?

If the opportunity arises, discuss your observations with the teacher whom you have observed.

### Part C

Make a list of three things you have explained recently in teaching. If possible, make it a varied list.

Think of an explanation that you will plan and deliver to one other person on the course.

### Concepts

Concepts are groups or classes of things. Sometimes important concepts are defined for pupils, but not necessarily understood. It is useful to subdivide concepts as follows:

**Concrete familiar** – terms in everyday use and observable, for example (sea) wave, trench, etc.

**Abstract familiar** – terms in everyday use but not easily observable, for example design, democracy, health, flow (in dance), etc.

**Concrete technical** – terms used by specialists but observable, for example thermosetting plastic, moulding, etc.

**Abstract technical** – terms used by specialists but not observable, for example urbanisation, choreography, etc.

Abstract concepts usually need the most explaining because they are not experienced through the senses. Similarly, technical concepts often need explaining because they are not commonly used. This classification helps in planning explanations – concrete concepts can often be demonstrated with a visual aid. For abstract concepts, you may need to draw on experiences familiar to pupils to build their understanding.

### Similarities and differences

This type of explanation is linked to forming concepts but goes further in distinguishing between concepts and in putting them together in groups. It is important in establishing and clarifying classifications, for example the similarities and differences between festivals such as Christmas, Diwali and Passover.

### Cause and effect

The pattern in these explanations is how one thing leads to another in a causal sequence. It is more difficult to explain events that are the result of a combination of factors, such as the outbreak of a war or the origins of an artistic movement.

### Purposes

It is often important to explain why things are done and what they are to achieve. This might be appropriate at the beginning of a lesson, piece of work or topic so that pupils are clear about the objectives, for example outlining the reasons for studying musical clichés.

### Processes

The focus of process explanations is on how things happen or work – there is an emphasis on sequence. Examples could include how one plays a forehand stroke in tennis or plays an Indian rhythm in music.

# Explanations used in foundation subjects

## Handout 5.3

- Types of Caribbean music – calypso, reggae, salsa, etc.
- How to book a hotel room in French on the phone
- Designing an evaluation for a meal in design and technology
- The meaning of push and pull factors in migration
- The origins of the anti-slavery movement
- The differences between Sikhism and Hinduism
- How to serve in tennis

### Keys

The keys in an explanation are critical to understanding. They may include an example or analogy, a component concept, an idea or generalisation. An explanation will often have a series of linked keys and identifying and sequencing them is important in planning explanations. The keys will often be the core of the summary.

### The 'tease' or hook

Explanations benefit from a start that grabs interest and attention. Wragg and Brown include the example of 'In a minute I'm going to tell you why my uncle can't eat raspberries and walnuts any more,' as a tease for explaining how to avoid dental decay. They draw the parallel with radio and TV programmes which start with quirky summaries of the items to keep you listening.

The hook can be a startling fact that is not obviously connected to the topic, an unusual way of representing the topic, a personal story or a connection to pupils' lives.

### Use of voice and body

There are many ways in which intonation of the voice and body language can be used to emphasise certain points. The voice can be monotonous and dull, or varied and engaging. The hands can be used to point, gesture and emphasise, but small inclinations of the body can also be important. A teacher was once challenged by his pupils to sit on his hands for the whole lesson. He accepted the challenge but gave in after ten minutes. He found that being unable to use his hands was impossible; he even felt that his memory was not working properly and he could not think what he wanted to say.

### Signposts

Parts of the explanation can be signalled with such phrases as 'what is really important to understand ...', or 'we are going to go through the three stages in this process; first ...', or 'to summarise what we have been talking about ...'.

### Props

A picture (perhaps from an ICT source), a concrete object or a demonstration can add to the power of an explanation as it captures attention and focuses pupils' minds. For example, a balloon is a wonderful resource in geography for explaining pressure differences.

## Humour

Humour helps to keep attention and may help some things to stick. If explaining how to throw a ball up in the air to serve in tennis, you could add that you don't throw the ball up miles – you don't want it coming down with ice on! This adds something to an otherwise pedestrian remark.

## Examples and non-examples

Examples are crucial in explanations, especially in establishing understanding of concepts or principles. Non-examples can be as important in establishing the boundary of an idea or concept. So in explaining what an insect is, using the example of an ant and a bee will be important (perhaps with a visual aid), but so will the use of spiders as a non-example. There are several possible patterns in explanation:

- example, example, rule/definition;
- example, rule/definition, example;
- rule/definition, example, example.

## Connections to pupils' experience

Explanations rely primarily on providing either a first-hand experience for pupils as a basis for understanding or an opportunity to use their existing knowledge. Using some common experience or knowledge can be a vital building block in an explanation. For example, in design and technology, pupils could be asked, 'Have you ever sat in an uncomfortable chair?', as part of explaining the evaluation of design products. In history, a teacher could say, 'You know what it is like when you lose in a sports match or do badly in a test', as a key for explaining some of the effects of the Treaty of Versailles.

## Questions

As a general rule, asking truly open questions during an explanation often slows the explanation and takes it off course. Open questions have any number of acceptable answers and you cannot predict where the pupil response will take you. If you have planned an explanation with several important keys, dealing with the tangential answers can be distracting. However, an open question may be appropriate if you are explaining a very important issue or concept over a longer period.

### General

- Examine one unit of work and identify what concepts should be clearly explained to pupils.
- Discuss how these concepts are explained.

### In relation to types of explanation

- Concepts: Use props, examples and non-examples that will be familiar to pupils.
- Similarities and differences: Use a Venn diagram to show what is similar in overlapped parts and different in separate parts.
- Cause and effect: Work out a clear sequence of linked points in a linear causal explanation. Use a concept map to show how a number of factors interrelate in more complicated explanations, for example the causes of the First World War.
- Purposes: Make connections to pupils' experience to help explain the purpose of a piece of work. For example, how health and safety principles in a workshop apply equally to organising most sports.
- Processes: Think how you can model processes for pupils.

