Module 2, week 6

ECT Mentor session

Module 2: Engaging pupils in learning
Week 6: Subject knowledge and key concepts

Session Elements

discuss with a mentor

practical exercise

collaborative learning

Learning Intentions for this session

Your ECT will learn how to:

Deliver a carefully sequenced and coherent curriculum, by:

3a. Identifying essential concepts, knowledge, skills and principles of the subject and providing opportunity for all pupils to learn and master these critical components.

3b. Ensuring pupils' thinking is focused on key ideas within the subject.

3c. Working with experienced colleagues to accumulate and refine a collection of powerful analogies, illustrations, examples, explanations and demonstrations.

Help pupils apply knowledge and skills to other contexts, by:

3k. Ensuring pupils have relevant domain-specific knowledge, especially when being asked to think critically within a subject.

Introduction

In your mentor session last week, you supported your mentee in mapping how key concepts and skills build up across a topic, the types of activities that support this and how this relates to memory development.

In this session you will broaden this consideration of key concepts and skills to look at the curriculum, focusing on a longer period of time. For early years and primary teachers, it might be appropriate to choose a specific subject area (e.g. literacy, numeracy, science etc.) for the class that your mentee teaches. In secondary schools and beyond, it might be more appropriate to look at an entire Key Stage or examination specification within a specialist subject. This session aims to further identify the essential concepts and skills within a specific area and how these build up within a curriculum. Furthermore, this session seeks to identify areas of subject and curriculum knowledge that ECTs might still need to develop, and to draw on your experience as a mentor in guiding your mentee how to go about this.

Research and Practice Summary

Focus on key knowledge and building powerful analogies: Key Stage 3 Curriculum overview for a History department

This is a history department's plan for how to help teachers and pupils build powerful analogies for the subject across a key stage. Aside from this, they also teach the standard units from the National Curriculum. Keep it in mind as you read this week's Research and Practice Summary.

Year 7	What is 'history' and what is it not? Introduction to the subject at secondary school. Trip to local history museum in spring term, looking at artefacts from Roman to modern era.
Year 8	Local history unit. Pupils follow projects of their own design, working in pairs or small groups. LGBT month assemblies. History department colleagues collaborate to present this, with follow-up events in the month. Big question: Who 'gets included' in history, and who is 'left out'? Local museum service artefacts-handling service come to school.
Year 9	Oral history project related to WW2. Pupils interview local guests in school. Black History Month competition, run by Year 9 for the whole school. Why choose GCSE history/careers in history.

In developing mastery, it is important that the curriculum is carefully sequenced, so that pupils learn **foundational concepts** first – concepts that are needed in order to understand more complex information. Examples of foundational concepts include learning the alphabet and phonetic sounds in literacy; learning to count, add and subtract in mathematics; and learning about cells and atoms in science. Over time, building up foundational understanding can help pupils develop confidence in their ability to recall relevant information while their knowledge gradually becomes more complex, and external support (or scaffolding) is gradually withdrawn.

To help your pupils to master foundational concepts, you should:

- with your colleagues, identify what these are and ensure they are prioritised in your curriculum (They might also be mapped onto individual lesson plans.)
- with your colleagues, identify the likely common misconceptions that can hamper understanding of the important concepts (With experience, you will develop your own confidence to spot these misconceptions.)
- give concrete examples and metaphors as these are often useful in helping pupils understand abstract concepts (e.g. stories and narratives, sayings, rules, mnemonics, equations and models. Sometimes it is helpful to think of real-world examples, of where your pupils might see or apply their new learning.)

What foundational concepts, aside from the National Curriculum, has the history department identified? How will their Key Stage 3 overview help pupils and teachers acquire real-world examples that will help them understand abstract concepts?

Understanding the foundational concepts and potential misconceptions is key to structuring curricula. To a significant degree, schools (including primary schools) are organised by subject discipline. **Subject knowledge** embraces: what a teacher

knows about the nature of a subject; the appropriate pedagogies to teach that subject; and an expert awareness of how that subject appears in the curriculum (i.e. what needs to be taught.) A teacher will continue therefore to expand their subject knowledge throughout their career. It is essential to effective teaching, for motivating and inspiring pupils, and for helping them to succeed academically.

Taken together, teachers need to develop subject knowledge itself as well as understandings of how pupils learn, what is foundational and the potential misconceptions within a subject. This professional development involves reading, reflection and working both locally and remotely with other professionals. Engaging with expert support and mentoring, and **collaborating** with peers is likely to improve the quality of professional development. Sharing and developing planning resources with colleagues is an important way for a teacher to manage their workload. Early career teachers ought to recognise the valuable role that they can perform by contributing to the wider life of the school: this will include forging strong professional relationships and developing a collective responsibility for improving the lives of the pupils in the school.

To help you to fulfil your wider responsibilities through collaboration, you should:

- realise that you too have talents and expertise which you can use to support individual colleagues
- take advantage of opportunities to work as a team (e.g. this may be a formal professional learning community, or a group contributing to the wider well-being of the school community)
- understand the vital role played by SENCOs, pastoral leaders, school librarian, careers service and the wide range of other colleagues working in specialist roles

How might the subject knowledge and professional learning of an ECT in this history department be developed because of this overview?

Explaining the history department's decisions when designing their Key Stage 3

overview

Pupils in Year 7 explore the 'nature' of the subject. They are introduced to key terms such as chronology and anachronism; and build the foundational knowledge, skills and principles to support their learning thereafter.
The months celebrating LGBT and Black achievement – and the Big Question, where they consider the characters who tend to be excluded from a study of the past – ensure that the pupils have a frame of historical reference beyond the standard curriculum. The department's own values have informed this curriculum decision: they want to make sure their pupils appreciate that these areas of history are fundamental.

The pupils' understanding of how to 'be a historian' builds progressively across the key stage through the museum visit, local and oral history and artefact-handling to a consideration of what a career in history might be. These opportunities for 'history in action' allow the pupils to accumulate their own references, analogies and examples for the subject.

Throughout, the department collaborates to deepen their own subject knowledge, for example in areas of local, Black and LGBT history.

Mentor Meeting Activities

Throughout the session, try to refer explicitly to the Learning Intentions, and encourage your mentee to record key points in their Learning Log. Tailor your use of the Theory to Practice activities below in response to the review and plan sections of this session.

Review 5 mins

(1) Start this session by briefly following up the actions that the mentee set at the end of last week's session, which was to plan learning which combined opportunities to develop critical thinking and transfer, while expressing something important about the values inherent in the subject. Ask your mentee to summarise:

a. what they did

b. the impact of this on pupil learning (including how they are evaluating this)

c. what they will do going forward to build on these actions

(2) Clarify the Learning Intentions for this session with your mentee

Plan 5 mins

At the start of this module, you looked at all of the learn how to statements for Standards 2 and 3 and conducted a module audit with your mentee: in some areas they will already be confident and skilled; in others they will want more practice, and support from you and others. Look back at this audit now and use it to help decide how you and your mentee will make the most productive use of the suggested Theory to Practice activities below.

Theory to Practice 35 mins

Last week, your mentee thought in depth about one topic. The topic will have been drawn from a discipline, such as literacy or a subject, such as geography. Your mentee might have instead focused on a skill or development goal, such as fine motor skills or collaborative play. For ease, we will just refer here to ‘subjects’. Even if your mentee teaches across a range of subjects, in this session they are thinking about just one. By modelling the depth of thought that is possible in relation to this one subject, you are preparing your mentee to think this deeply about each subject that they may teach.

1. Discuss with mentor

With your mentee, discuss why your chosen subject ‘really matters’. Why do you feel that it is deserving of the space given to it in the school curriculum?

To guide your discussion, use these prompts. Don't aim to cover all prompts, but focus on those which are most relevant to your mentee, the phase in which they teach and the subject being discussed.

a. Develop a list of key concepts and skills within your chosen area together. It might help to first consider the parent discipline(s) from which the subjects are derived (e.g. literacy in English derives from English language; school geography also draws on geology, environmental science, urban planning, etc.)
   - What might be learnt at university about this discipline (or skill/development goal)?
   - What is cutting edge within this area which has perhaps not been brought into school curricula yet? (e.g. recent advances in space exploration, the release of a new music album, the design features of a new smartphone)
   - What makes your mentee (and you as a mentor) passionate about this area?

b. To help with this task you might use further internet research, for example, by looking at university subject department websites or any professional associations and societies associated with the subject (e.g. the Royal Geographical Society, Historical Association, Institute of Physics)

c. Together with your mentee now try to define the nature of the subject that you are focusing on: how does it provide students with knowledge about the world, or ways of acting within it? (For example, art can provide representations of the world, but it can also challenge, provoking thought and emotion. Mathematics also provides a language with which to describe the world, but it goes further in that it allows us to see patterns that we might not otherwise be aware of, because it is an internally coherent language. Physical education

teaches pupils about recreation, but also teamwork, health and the human body, drawing on both the experience of accomplished sportspersons and scientific study.)

2. Practical activity

Within any area of learning there are stories and analogies, illustrations, examples, explanations and demonstrations which convey the important knowledge and skills. Some of these may have come up when you were discussing progression over the last two weeks.

Either

1. If you feel that you arrived at a reasonable definition for the nature of the subject that you are discussing, now spend time listing the activities and explanations which already convey this to students within your curriculum. How do students come to understand the nature of this subject? How can teachers support this further? (e.g. if you are teaching art, are there opportunities for your pupils to go beyond painting a 'good' picture, so that they make art that 'says' something? In maths, do you invite your pupils to see the mathematical patterns that occur around them?)

Or

2. If consideration of the nature of the subject under discussion was challenging (and indeed this often is), then instead spend some time focusing on a key concept or skill. List the activities and explanations that allow understanding of this to build up across a year.

3. Collaborative planning

Conveying the nature of a subject is a complex thing and develops throughout a pupil's education. For example, in Key Stage 1 we might indicate that science is about testing predictions, whereas by Key Stage 4 we might hope that pupils also

recognise that some scientists do purely theoretical work, and that predictions follow that. As such, it is worthwhile mapping how a pupil's understanding of a subject (or key concept/skill) develops over a whole key stage, or at least across a year. The history department in the example above did a version of this. Now it's your turn. Draw a table of how the nature of a subject, concept or skill might differ over different times within your school curriculum.

Here is a brief example from Key Stage 3 science that might help get you started

Curriculum Point	How is science characterised?
Entry to Year 7	Science involves experiments, testing hypotheses. Biology, Physics and chemistry are together.
Enrichment Week	Science helps solves real-world problems and is related to technology and politics.
Year 9	There are specialist areas of science that people focus upon in teams. These teams collaborate and peer review is important. We broadly divide biology, physics and chemistry, although there are lots of overlaps.

Next Steps 5 mins

Agree with your mentee how they will now put their learning from this week's session(s) into practice in their teaching. Help your mentee to clarify:

1. the action(s) they will take and how these action(s) are expected to contribute to improving their workload and wellbeing
2. what success will 'look like' in relation to these action(s)
3. how they will evaluate their success in taking these action(s)

Note the date of your next mentor meeting, when you will check on your mentee's progress.

Finally, remind your mentee that they have an online ECT training session next week. This will focus on the same area of the Early Career Framework as this session, and will allow them to share their ideas about the key concepts and skills, as well as the nature of the subject chosen, with other ECTs. They should therefore

bring the materials developed over the last few sessions to this: the list of key concepts and skills, topic overview and consideration of activities through which the nature of a subject is conveyed.