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SLIDE 0 Introduction to pedagogy

Welcome to this introduction to pedagogy and learning design which has been produced as part of the EOSC Synergy project’s online train the trainer programme.

This talk will outline the basics of pedagogy and training design and then introduce you to a couple of practical exercises.

It’s important to note that this session is a taster - there is a lot of information around pedagogy and design out there, but we focus on a few key points to get you started.

SLIDE 1 Before you start

In this session we want to help you create the best training you can and we understand you might not have a lot of time or resources, so we want you to get the fundamentals right so that whatever you produce has good foundations.

We are starting from the assumption that training is the right solution to the problem you are trying to address. It’s useful to ask yourself this question - as within organisations in particular, other approaches may be better, for example improving documentation and guides or streamlining procedures. The action mapping approach referenced on the slide can help you think this through.

We’ll continue now assuming that training is the right solution to your problem. So how do we make sure training meets the needs of your learners and your own aims? Perhaps you could pause the video and take a few moments to think about the training you’ve been to - what makes it good or bad?

Usually it’s things like not being appropriate for the audience, too much information and not enough engagement with learners

SLIDE 2 Pedagogy

Now you’ve thought a little about what makes good or bad training, how do you make sure you design good training? The starting point is an understanding of pedagogy, or the study of teaching.

It’s worth noting that we are talking about training today, not teaching - for some people there is a huge difference. Teaching is often seen to focus on abstract knowledge, theory and thinking,

whereas training is focussed on practical skills. I’ve always found it hard to separate the two but no matter your view, an understanding pedagogy is important for teaching and training.

There is also a debate about the word pedagogy - its Greek origin means ‘leading children’ and there has been a reaction to this to say that approaches aren’t always appropriate for adults, so you may hear of andragogy (Greek ‘leading man’). Generally the difference is that adults must be able to see the relevance of their learning and relate it to their experiences, they are more self-directed and self-motivated. <https://en.wikipedia.org/wiki/Andragogy>

Within pedagogy there are many, many theories and methods! We will focus on one commonly used theory – Bloom’s Taxonomy

SLIDE 3 Bloom’s taxonomy

Bloom’s taxonomy has three domains: cognitive (knowledge), affective (emotion) and psychomotor (physical), which all work together. This slide shows the cognitive domain.

The idea is that one level builds on the next, leading to higher order thinking, from repetition of facts at the bottom, then understanding what the information/facts means… up to evaluation and creation of their own knowledge at the top.

This doesn’t mean, however, that the lower levels are less valuable – much learning depends on have a sound knowledgebase to build upon. So for example you could start at the lower levels with:

* What a data management plan is (Remember / understand)
* Then why a data management plan is important (Understand / apply)
* Then move on to being able to analyse their own data and decide what information should be included (Analyze / evaluate)
* And finally creating their own DMP (analyze / evaluate / create)

This taxonomy is useful when you come to learning/training design – activities can then be associated with the verbs which are mapped to the different levels. Usually you are trying to encourage learners to move up the taxonomy to become more independent in their understanding, application and use of knowledge.

SLIDE 4 Scaffolding

When you’ve thought about what you want your learners to achieve, how do you support your learners through these levels?

The idea is that you have a goal for the learners – you want them to get somewhere

Your scaffold is your framework for getting them there

At the start they might need more support

By the end hopefully they’ve learned how to do things themselves

Your role as a trainer changes throughout this process withdrawing the level of support and assessing learning and giving feedback throughout

SLIDE 5 Why are you doing training

Before you start your planning, it’s also useful to think about why you are doing training. Usually it’s because there’s a new tool, process or service that you need or want people to learn about, but you’ll find there are many other benefits to training.

And the key point here is that you need to be aware of these reasons at the start in order to ensure you build in appropriate approaches.

Other reasons include:

* Teach others about a topic/service – you want to raise awareness of a topic/service and enable people to learn about it
* Encourage best use / practice – you want learners to be able to use something well, beyond what they might be able to teach themselves.
* Change attitudes – training is often seen to be about learning technical or practical skills, but there is a motivational element. You may need to change attitudes by giving a clear idea of the benefits of the service or technology you’re training on.
* This is especially true when promoting open science – with open science training it’s often about trying to change culture and behaviour to encourage open science practices
* Training can also be useful to gather feedback on services. You can find out how people use your service and what issues they struggle with. This can lead to improvements.
* You may wish to use a training course to encourage learners to become part of a user community for your service. This will allow future peer support and enable you to better understand the needs of your learners.
* And finally, training can help you gather evidence of use. Most projects and services need to provide evidence of success and training is one way to show that you have made an effort to raise awareness and encourage use of your service.

SLIDE 6 Reasons to think about design

We’ve talked a little about pedagogy and why you are doing your training so now we’ll move on to design.

Creating training material can be time-consuming - there are many things to remember and it is good to make sure you consider these right at the start, rather than at the end when it becomes more work. A bit like researchers and data management, it’s a lot easier if you follow good practice right from the start!

SLIDE 7 How to think about good design

How can you ensure you think about good design? Again, there are many models available - we will use a very common training framework called ADDIE. Analysis, Design, Development, Implementation, Evaluation

It’s important to note that this approach outlines the steps you go through and various approaches can be used in each of these steps.

In this module we focus mainly on the analysis and design stages.

SLIDE 8 In reality (1)

It’s tempting to start by developing your materials, but make sure you do some analysis and design as you really will save yourself time. Make sure you start at Analysis not Development!

SLIDE 9 In reality (2)

However, it is iterative and not always linear – you may find you go through the stages several times. Evaluation is at the core at every stage and you may make changes as you go through the steps.

SLIDE 10 Evaluation

As evaluation is one of the most important parts of design we’ll spend a little more time on it - it’s good to be able to demonstrate what learners have achieved, both for the learner and you as a trainer (evidence of success!).

There are different levels of evaluation from ‘reaction’ eg how do learners feel after the course through to learning, behaviour and results.

The key point is that you should try to design in opportunities for assessment and evaluation, learning and reaction can be measured within a training session. You can measure learning during training whether it’s formative assessment that is part of the learning process or summative assessment which measures learning at the end of the training through a test of some kind.

Behaviour/results is longer term so harder to measure but it’s possible with follow up activities.

SLIDE 11 Two points to remember

To summarise two key points

This illustration shows different (online) activities mapped to the levels of Bloom’s taxonomy, showing that activities need to match intended outcomes. If you want to ensure a learner understands and can apply knowledge, you need to move beyond the lower levels.

SLIDE 12 Technology won’t fix poor training design

A note on online learning which we’ve all had to deal with recently. Simply moving online won’t fix poor training design.

If your activities and outcomes are mismatched in your face-to-face design and you replicate that online, then nothing will change. A data management reference - garbage in, garbage out.

Most f2f activities are possible online with the right tools and/or creativity

SLIDE 13 Your initial training analysis

Moving on now to the practical aspects of training development. We have developed an analysis form which you can use to structure your planning. It covers things like goals, content and audience as well as practical issues such as resources available in terms of technology and time, timing of training, how will you attract attendees etc. This full form will be made available in the resources of this module.

SLIDE 14 Goals, objectives and outcomes

We’ll be getting you to think about goals, objectives and outcomes - it’s useful to know the difference, although again there is a lot of discussion about meaning! But it’s good to have a common understanding. In this module we describe goals and objectives as the bigger picture and what the trainers will do to achieve the goal. Outcomes will be what the learner can do afterwards. Goals are broad, outcomes are specific.

Eg.

Goal - to improve data management at X University

Objectives - run a series of training courses

Outcomes - researchers will be able to create a data management plan and know what support is available to them

http://www.drew.edu/sla/outcomes/

"Often, one of the most confusing parts of doing assessment is understanding the difference between goals, objectives, and outcomes.  Although there is no official dictionary of assessment, it is helpful for all stakeholders in the assessment process to share a common understanding jargon used in talking about assessment.

SLIDE 15 Your audience

Think about your audience and their experience as much as you can - if you don’t know specifically, you can create a ‘persona’ which describes your intended audience. They might be researchers or other staff in your case.

Thinking about their knowledge, experience, motivation, fears etc can help you address these in your training design.

SLIDE 16 The ABC learning design method

Once you have defined your goals, audience and outcomes you can start on design. The method we are using is the ABC learning design method developed at University College London. It’s interactive method originally intended for a face to face workshop but it has been adapted to online delivery.

It’s a quick and simple method but we have created an even shorter version for you to start with which I’ll introduce shortly. Please do think about using the full version, which is especially good for working with colleagues on training development.

The method essentially involves mapping the learner’s journey through your training and identifying appropriate activities.

SLIDE 17 ABC Learning activity types

At the core of the method are the 6 learning activity types. You select the learning activity type or types you want for each topic and then select the specific activity, whether it’s a video or case study activity.

If you look at the learning activity types you will notice a links to Bloom’s taxonomy (eg acquiring knowledge, practice / producing their own content) and elements of andragogy - learning through discussion and collaboration.

SLIDE 18 Learner journey photo

If you wanted to do the full version, it’s available at the web site link earlier. It’s useful to do it this way as you can easily see patterns - I noticed I started most topics with acquisition, so I thought about how I could do things differently, eg start with investigation or discussion.

Evaluation is mapped on to the pathway with yellow stars – this could be evaluation of learning ie assessment (formative / summative) or evaluation of the course itself. But it needs to be considered at the design stage, not tagged on afterwards.

SLIDE 19 Design your training in easy steps

So now on to the exercise that we’ve put together. The aim is to help you understand the basics of course design, whether face to face or online, and practice designing a course. There are two short tasks. You might want to do this individually or with colleagues working on the same course.

SLIDE 20 Let’s start: an initial training analysis

You’ll start with a training analysis to focus on goals, audience, outcomes for your learners and a rough idea of content

SLIDE 21 Let’s continue with design

You’ll then move onto designing your learner’s journey, thinking of activities which are engaging for learner and also meet the learning outcomes you’ve set.

SLIDE 22 Thank you and contact details

Thank you for listening and we hope you find the activities useful. For further information please visit the EOSC Synergy web site.