Welcome Back

1. What have we learned so far?
2. What will we focus on today?

Welcome Back

- SLIDE

- today we focus more on specifics of a Carpentries workshop

  - lessons and effective teaching

Building Teaching Skill: Lesson Study

1. How should I use learning objectives when preparing to teach?
2. How can I adapt my teaching in response to formative assessment?

Learner Profiles

- yesterday talked about importance of studying other people teaching

- time to think a bit more about how we design lessons, study of lesson content etc

- essential to identify who the target audience is for your lesson

- learner profiles help to identify when your expectations are unrealistic

- having learner profiles can help us to imagine how a particular part of a lesson/example/exercise could be fit to our audience

Learner Profiles

- SLIDE

- three parts

    - general background

    - problem they face

    - how the course can help them

Learning Objectives

- once you know your target audience, time to specify what you're going to teach them

- informed by your audience and will communicate what you should focus on during the course

- good learning objectives are quite specific about the intended effect of a lesson - Bloom's taxonomy (SLIDE)

- exercise

Designing Good Challenges

- good challenges/exercises are very important

- formative assessment

- gives learner the chance to apply what they've been learning

- remember you should **always be able to identify what information you hope to gain** from a particular exercise

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Designing Good Challenges

- example in etherpad & SLIDE

- C: simple factual error

  - need to be reminded that rows are indexed first when subsetting two dimensional objects in R

- A: they understand that rows come first, followed by columns

  - but they are trying to get each value independently (first row 2, column 4; then row 2, column 5)

  - They need a review of the : operator or the c() function for obtaining multiple values while subsetting.

- B: they probably understand that one of the values they're looking for is in row 2, column 5

  - but don't understand that the , operator is needed to separate row and column index values

  - They also need a review of the : operator or the c() function for obtaining multiple values while subsetting.

Designing Good Challenges

- exercises

Building Teaching Skill: Live Coding

1. Why do we teach programming using live coding?

Live Coding

- cornerstone of the Carpentries teaching

- don't use slides

- exercise: what do you think are the advantages and disadvantages of this?

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Live Coding

- advantages:

    - more compelling

    - allows instructor to be more responsive to questions

    - transfer from short-term to long-term = learning

    - slows instructor down

    - earners get to see instructors make (_and fix_) mistakes

Live Coding

- disadvantages:

  - greater pressure on instructor

  - splits attention of learner - typing and listening/following screen

    - speak while you type

    - explain before and after what a line does

  - requires practice to think out loud in front of an audience

Live Coding

- fits well into practice-feedback model

  - practice by typing along

  - continuous feedback from outcome of execution

- need to make sure that you explain the 'feedback' - error messages

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Live Coding

- exercise with videos

- ten tips for live coding, in etherpad

- use sticky notes

  - it's more discreet

  - they can keep typing

  - still gives instructor an idea of how the workshop/lesson is going

Live Coding

- live coding exercise

- groups of two or three

Coffee!

(SLIDE)

Building Teaching Skill: Performance Revised

1. How did you change your teaching in response to feedback?

Live Coding

- repeat live coding exercise

- incorporate changes based on feedback from last time

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Live Coding

- how did you feel it went?

- better or worse this time? (did the feedback help?)

- what would you change for next time?

Before Lunch

- Give us feedback again