

# Online Training

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The logo for EPSRC (Engineering and Physical Sciences Research Council) features the letters 'EPSRC' in a bold, purple, sans-serif font. The text is framed by two horizontal teal lines, one above and one below.The Cray logo consists of the word 'CRAY' in a blue, stylized, sans-serif font. Below it, the tagline 'THE SUPERCOMPUTER COMPANY' is written in a smaller, blue, sans-serif font.The NERC logo features the letters 'NERC' in white, bold, sans-serif font on a dark green rectangular background. To the right, on a light green background, the text 'SCIENCE OF THE ENVIRONMENT' is written in a smaller, dark green, sans-serif font.The epcc logo shows the lowercase letters 'epcc' in a blue, sans-serif font. The text is enclosed within a thin blue border that has vertical bars at the ends.The Archer logo features a red and white bullseye target icon on the left. To its right, the word 'archer' is written in a white, lowercase, sans-serif font on a black rectangular background.

# Reusing this material



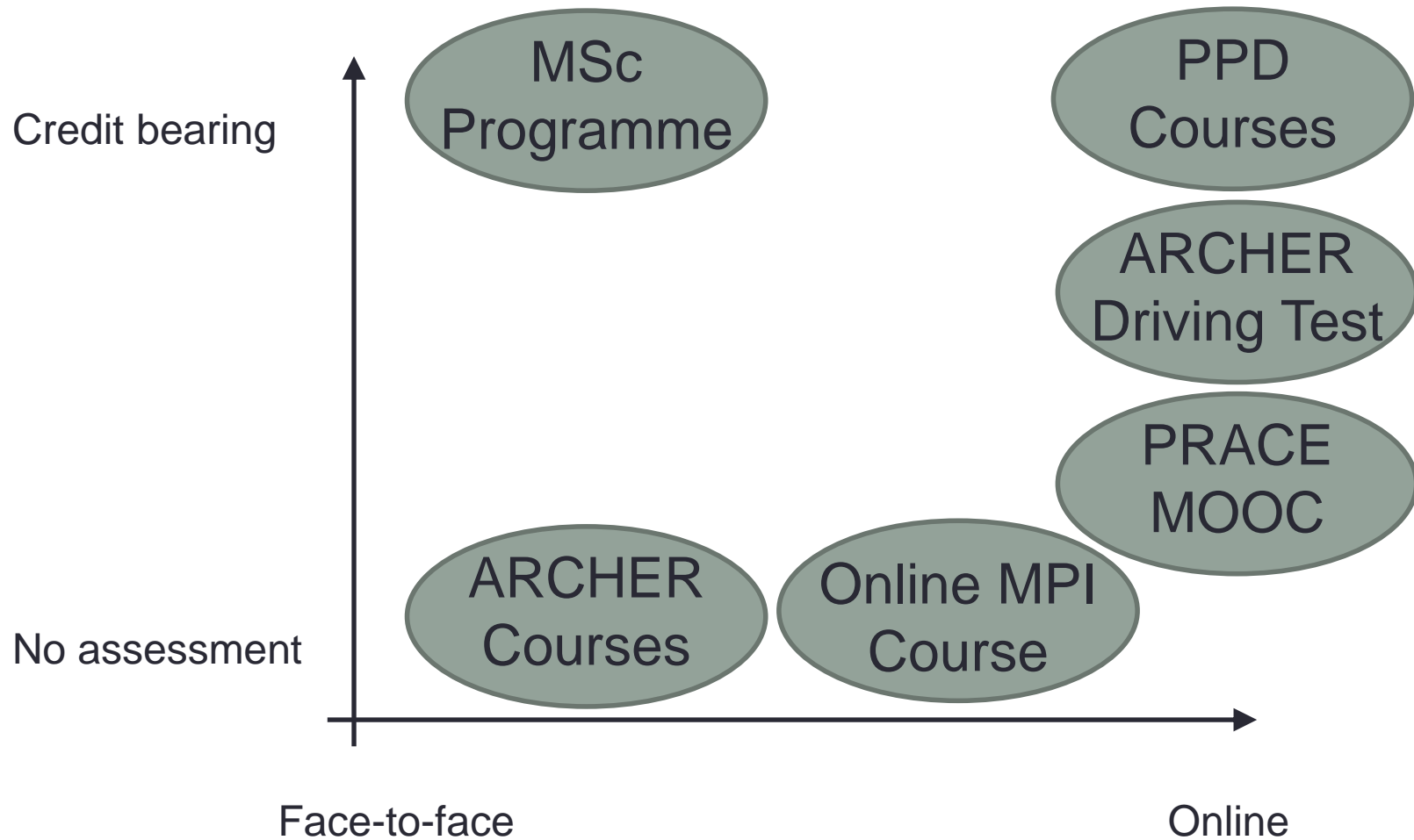
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# EPCC / ARCHER Ecosystem



# Minty and Westhead (EPCC, 1997)

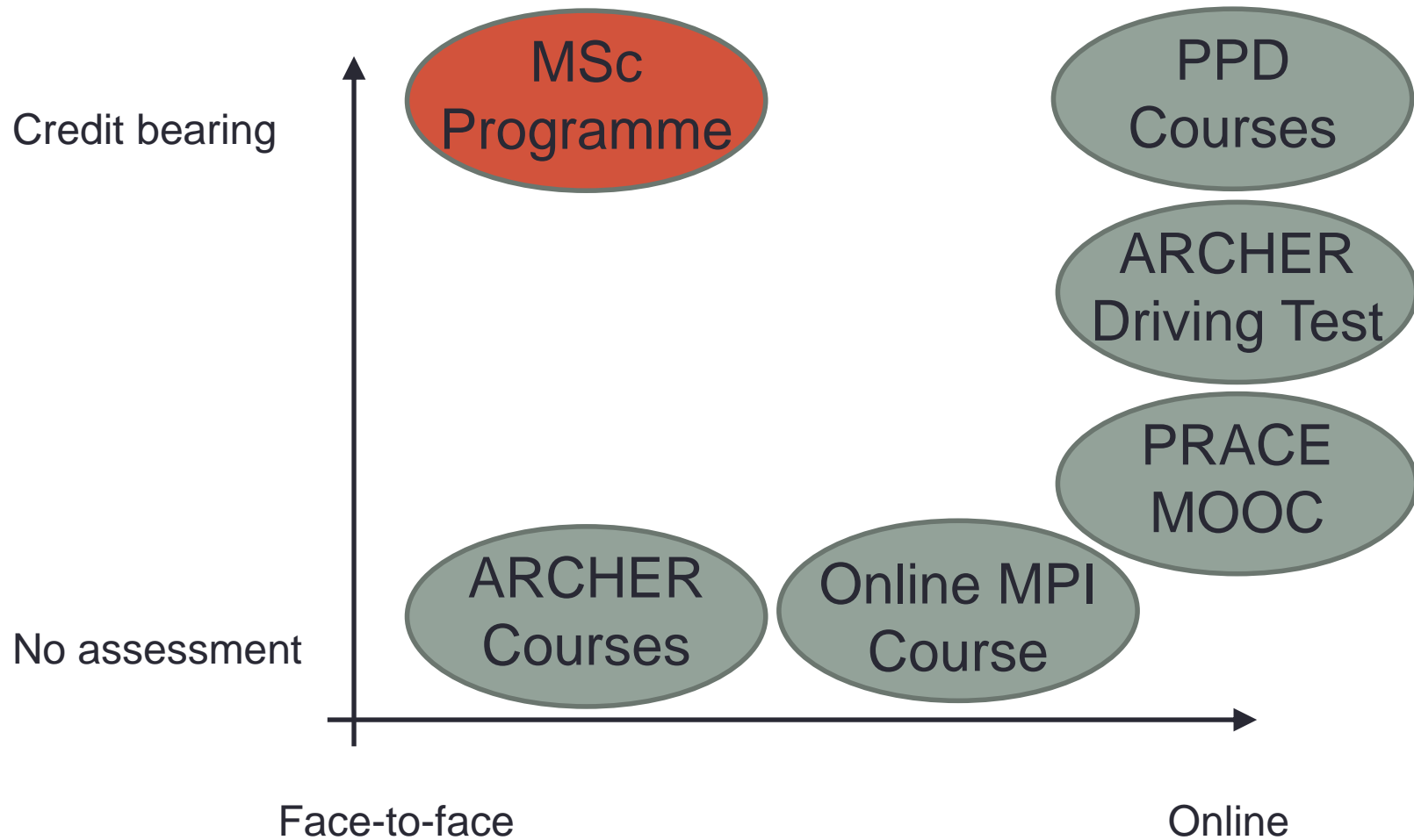
## MPI On-line: A Teaching Environment for MPI

MPI On-line now provides a specially developed multimedia training environment. The course is presented as a slide show accompanied by a streamed audio sound track.

Tied into this presentation are animations illustrating the concepts described, such as the different communication modes provided by MPI.

Understanding of these concepts is reinforced by simulations for the student to study at intervals during the presentation and by the programming exercises which accompany the main sections of the course.

# EPCC Ecosystem

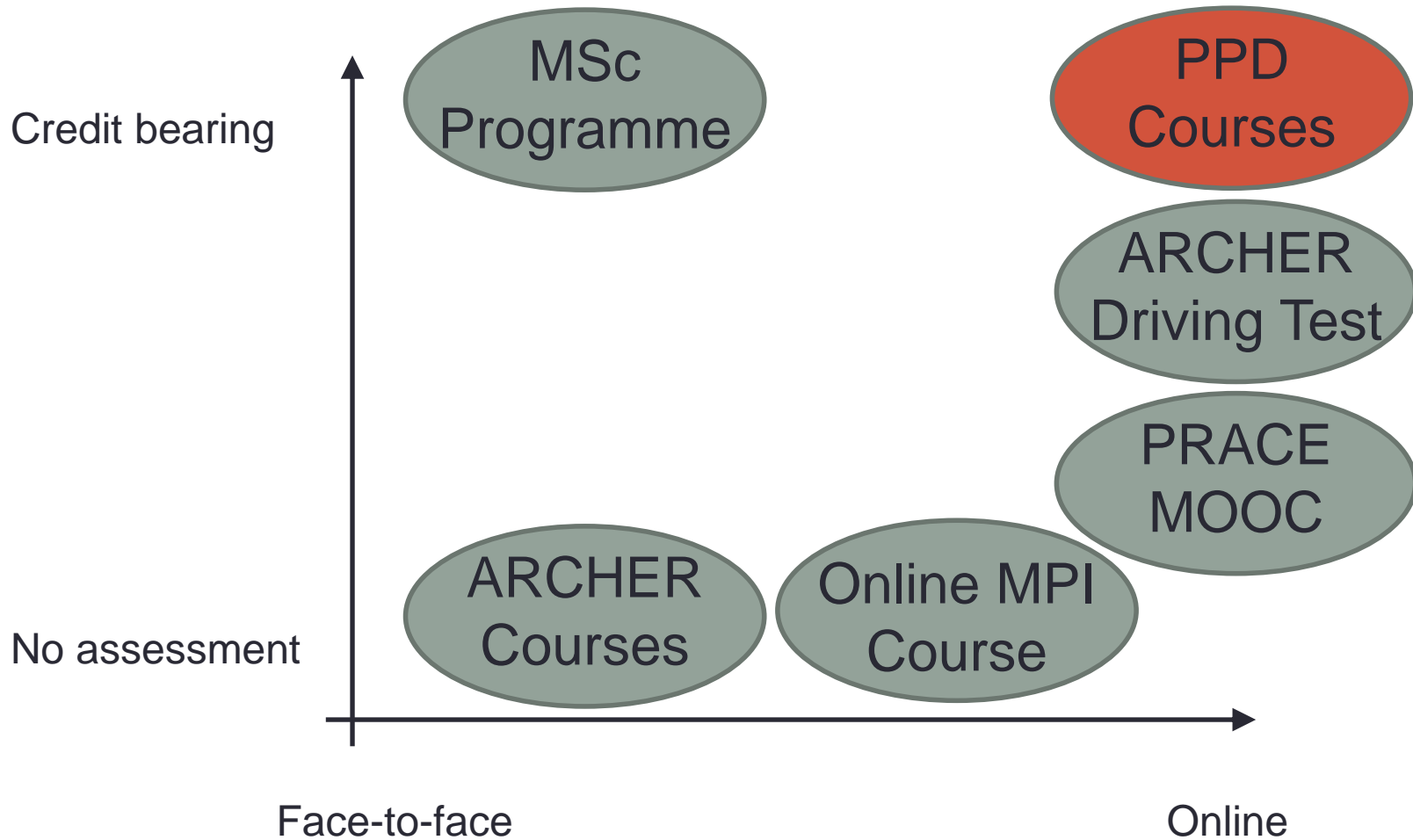


# MSc in HPC / HPC with Data Science

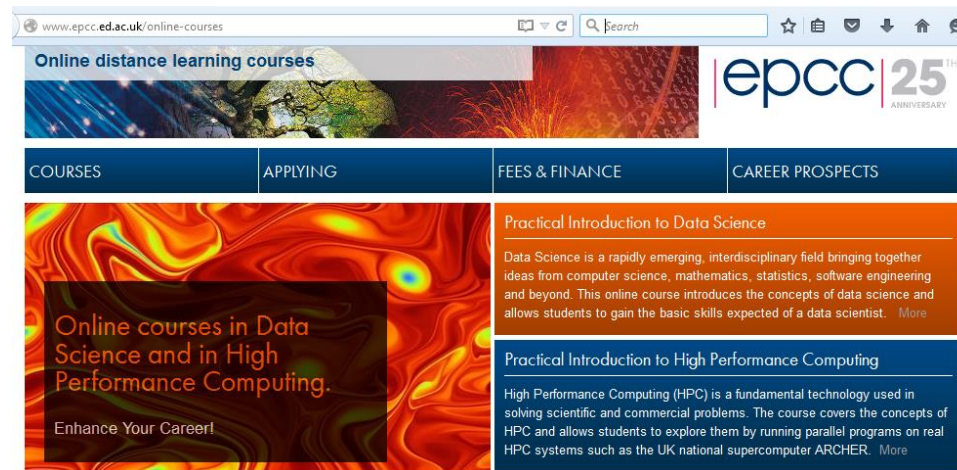
- Classical format residential taught Masters programme
  - fees are charged
  - around 25 – 30 students
  - lectures + lab sessions
- Students use Learn VLE
  - PDFs of lectures
  - all practical material
  - coursework submission
  - recordings of all lectures (soon?!?)
- Collaborate for webinars
  - e.g. backup during Snowmageddon



# EPCC Ecosystem



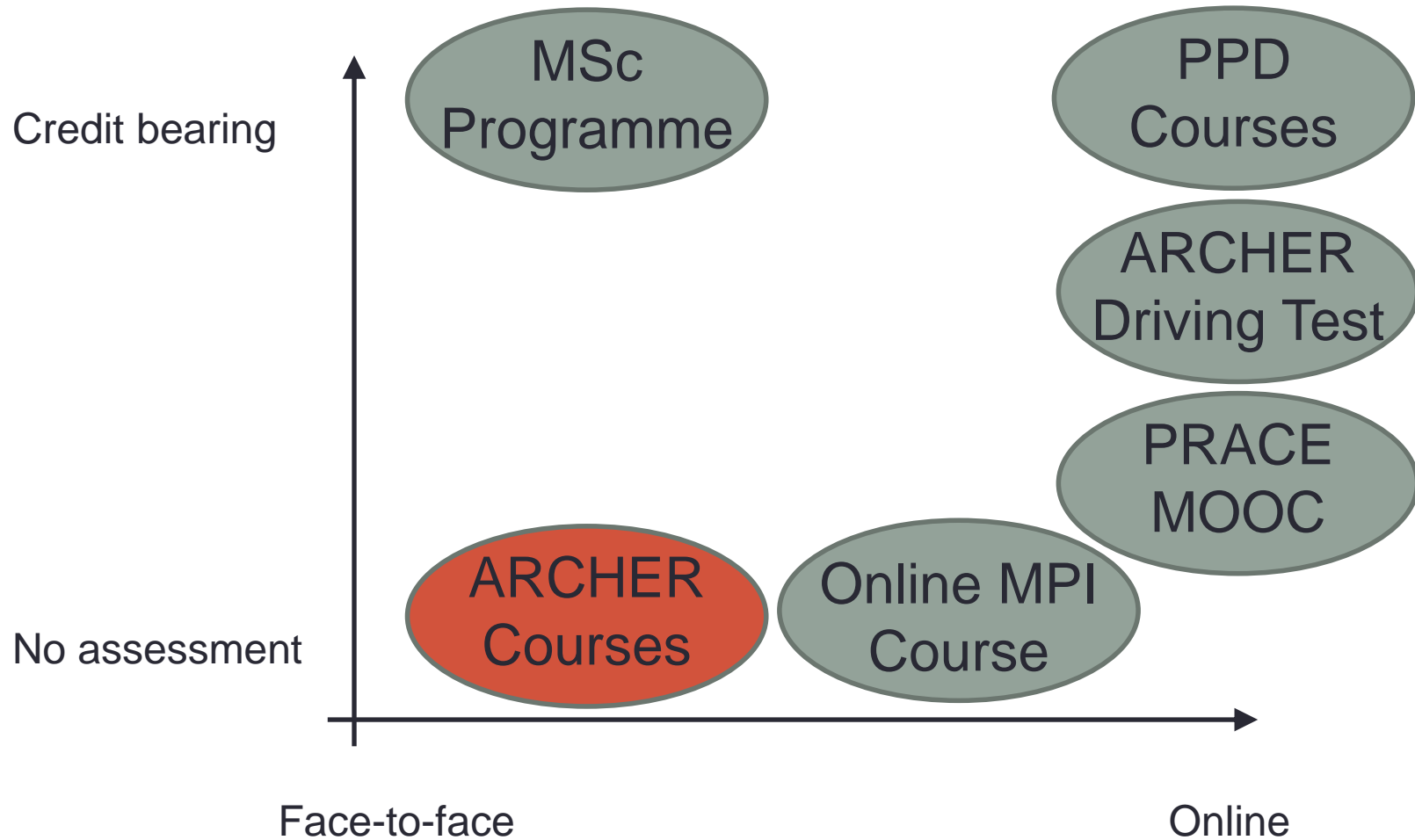
# Online Masters Course (PPD)



- Postgraduate Professional Development (c.f. CPD)
  - under Data Science Technology and Innovation MSc programme
  - Practical Introduction to HPC; Practical Introduction to Data Science
- Entirely online via Learn with recorded lectures
  - fees charged; around 50 students across both courses
  - each course is 20 credits (out of 120 taught credits)
  - no exams – 100% coursework



# EPCC Ecosystem



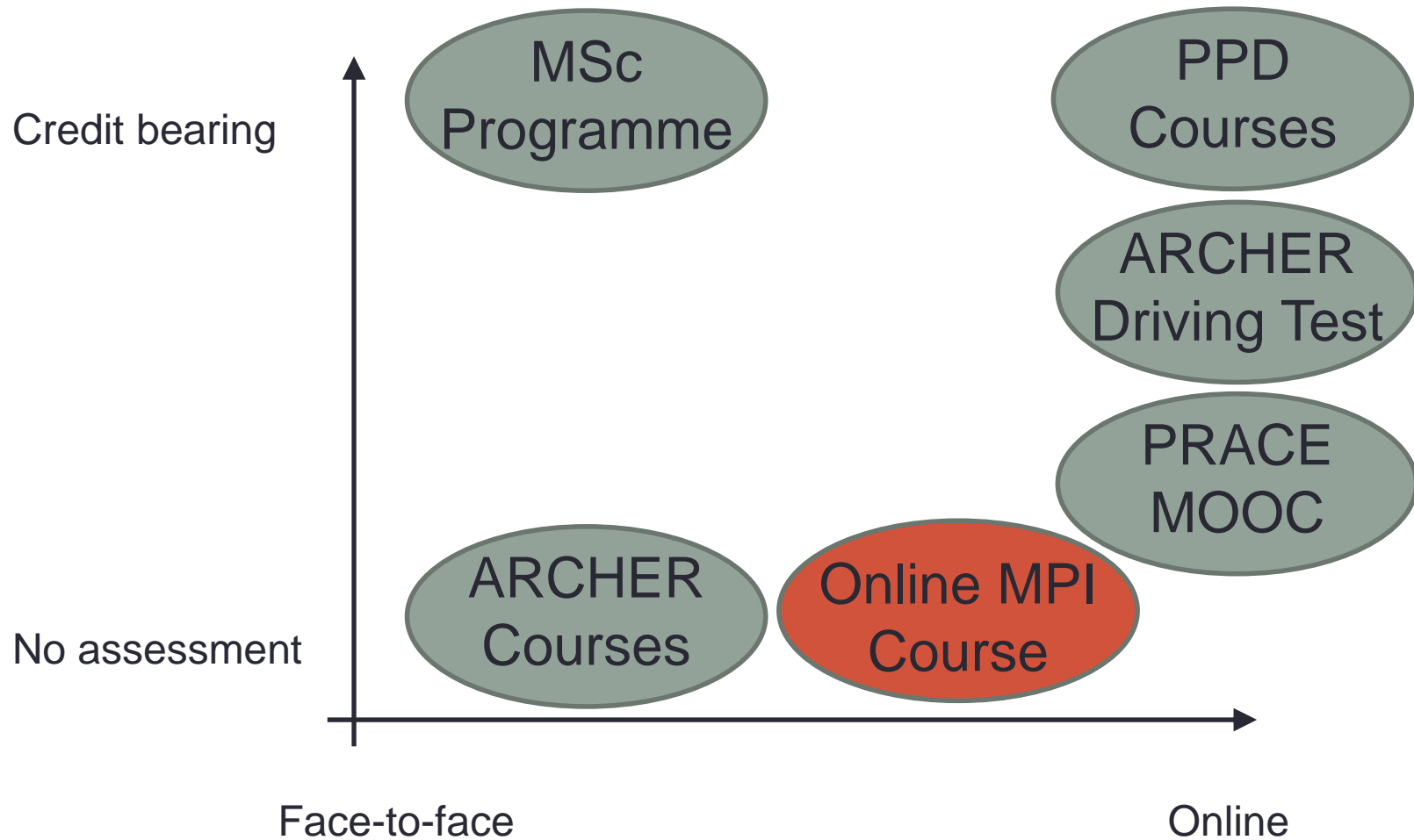
# ARCHER Courses

- Around 25 face-to-face courses per year
  - attendance ~20 students
  - material online and archived
  - free to academics
  - no assessment except certificate of attendance!



- How to deliver to a wider audience?
  - but maintain hands-on support for practical exercises?

# EPCC Ecosystem



# Format used by US XSEDE project

- Presenter + slides and video
  - around 25 dedicated sites
  - HD video + high quality audio
  - groups attend at each site
  - locals provide basic IT support
  - presenter does technical support
- ARCHER trial over Collaborate (c.f. Virtual Tutorials)
  - MPI over four Wednesday afternoons
  - ~50 attendees at start, ~25 at the end
  - a few groups at sites but mainly individuals
  - perhaps need to revisit practical support

ARCHER » Online MPI - Mozilla Firefox

www.archer.ac.uk

**Week 1 (Wed 31st Jan)**

Here is the [Exercise Sheet](#) for this course. Note that it may contain example course - see below the timetable for complete copies of all the material.

Although it is always best to try and write your own answers to the exercises,

- 13:30 [Welcome and overview](#)
- 13:45 [Message-Passing Concepts](#)
- 14:30 [Practical: Compiling and running an MPI program](#)

**This talk updated since lecture to include more explicit download, c**

- Here are simple test programs in [C](#), [C++](#) and [Fortran](#).
- 15:00 Break
- 15:30 [MPI Programs](#)
- 16:15 Practical: Hello World
- 17:00 Close

**Week 1 Video**

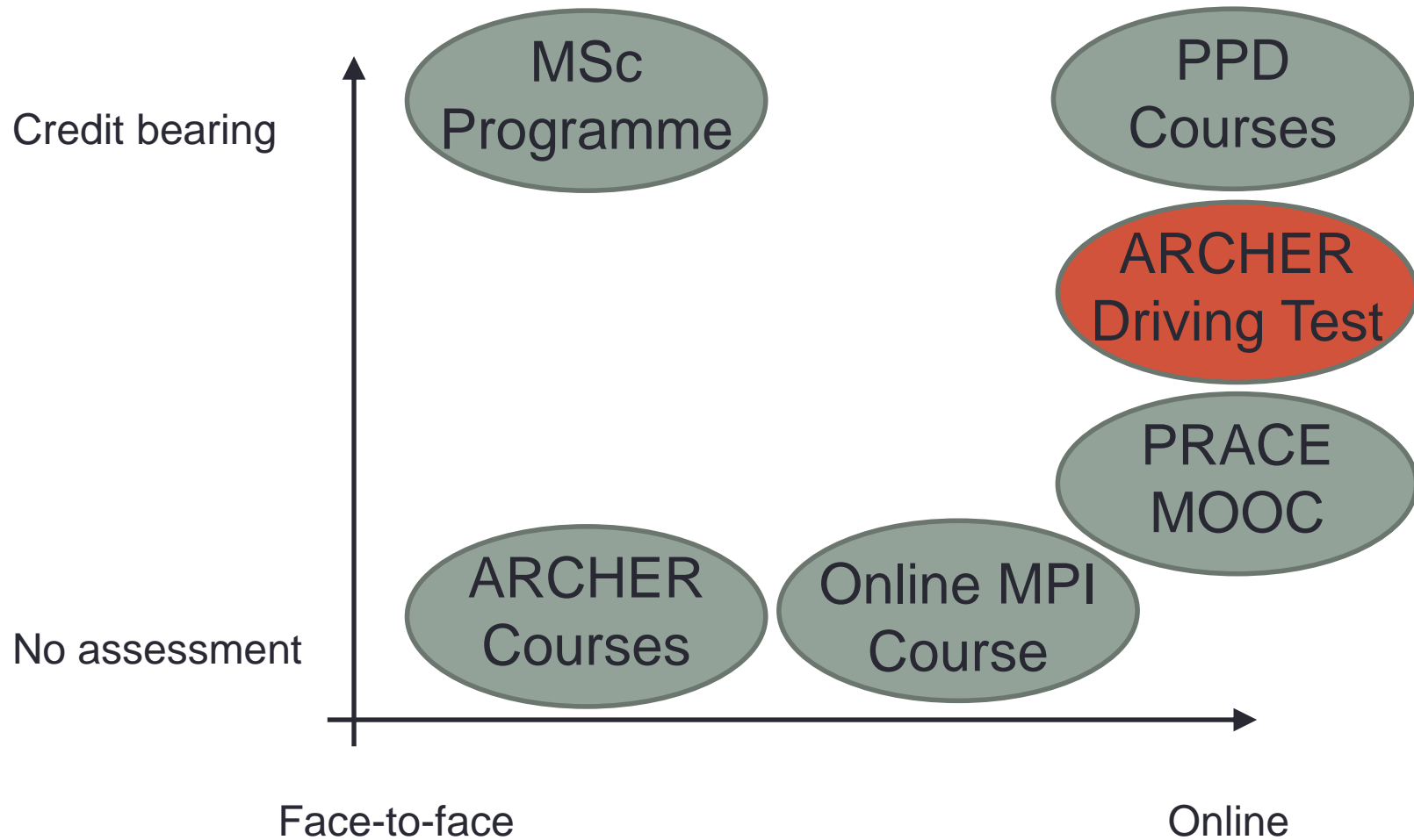
Webinar: Message-passing Program...

Interconnect

21:33 / 2:18:44

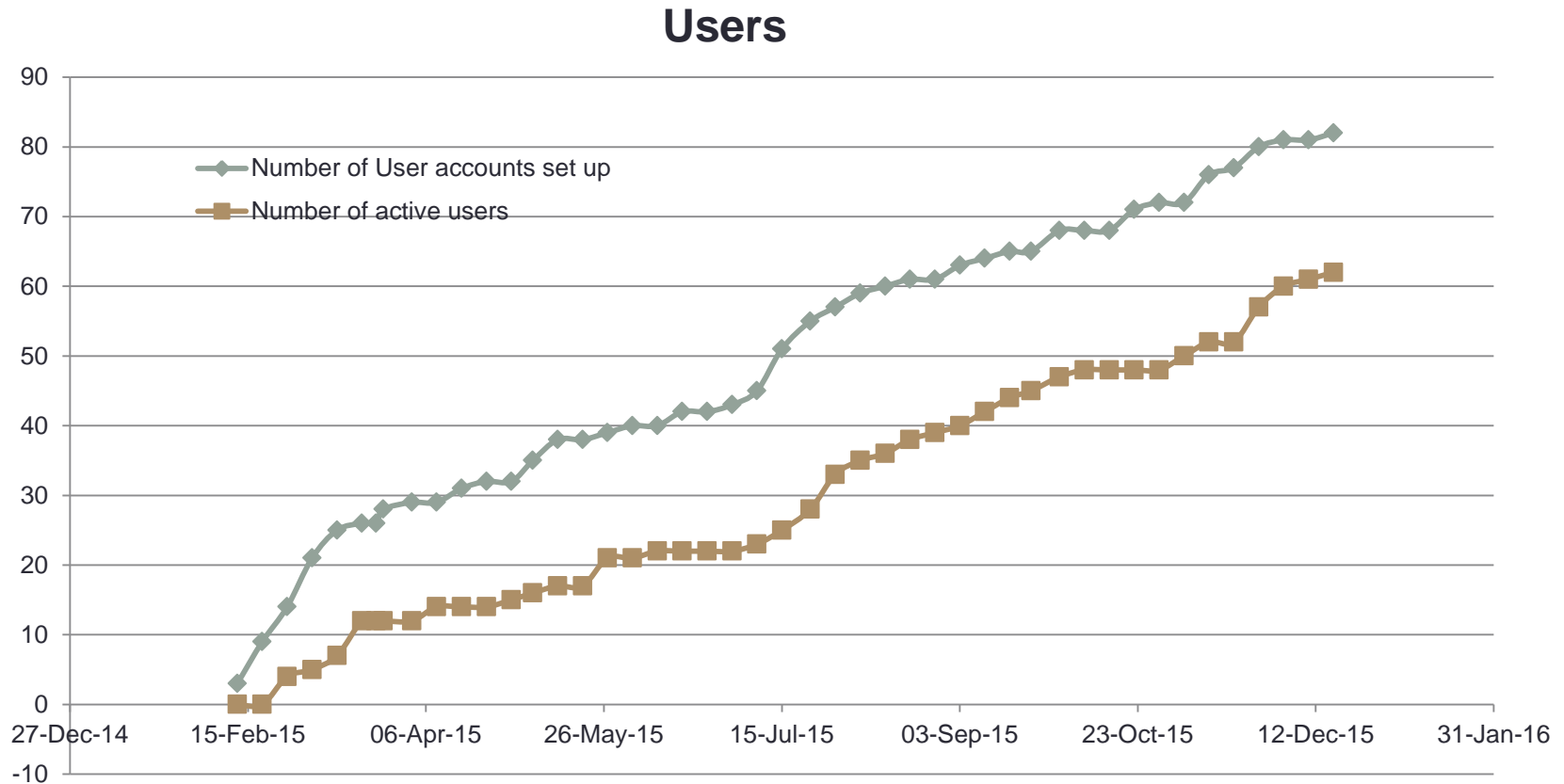
YouTube

# EPCC Ecosystem

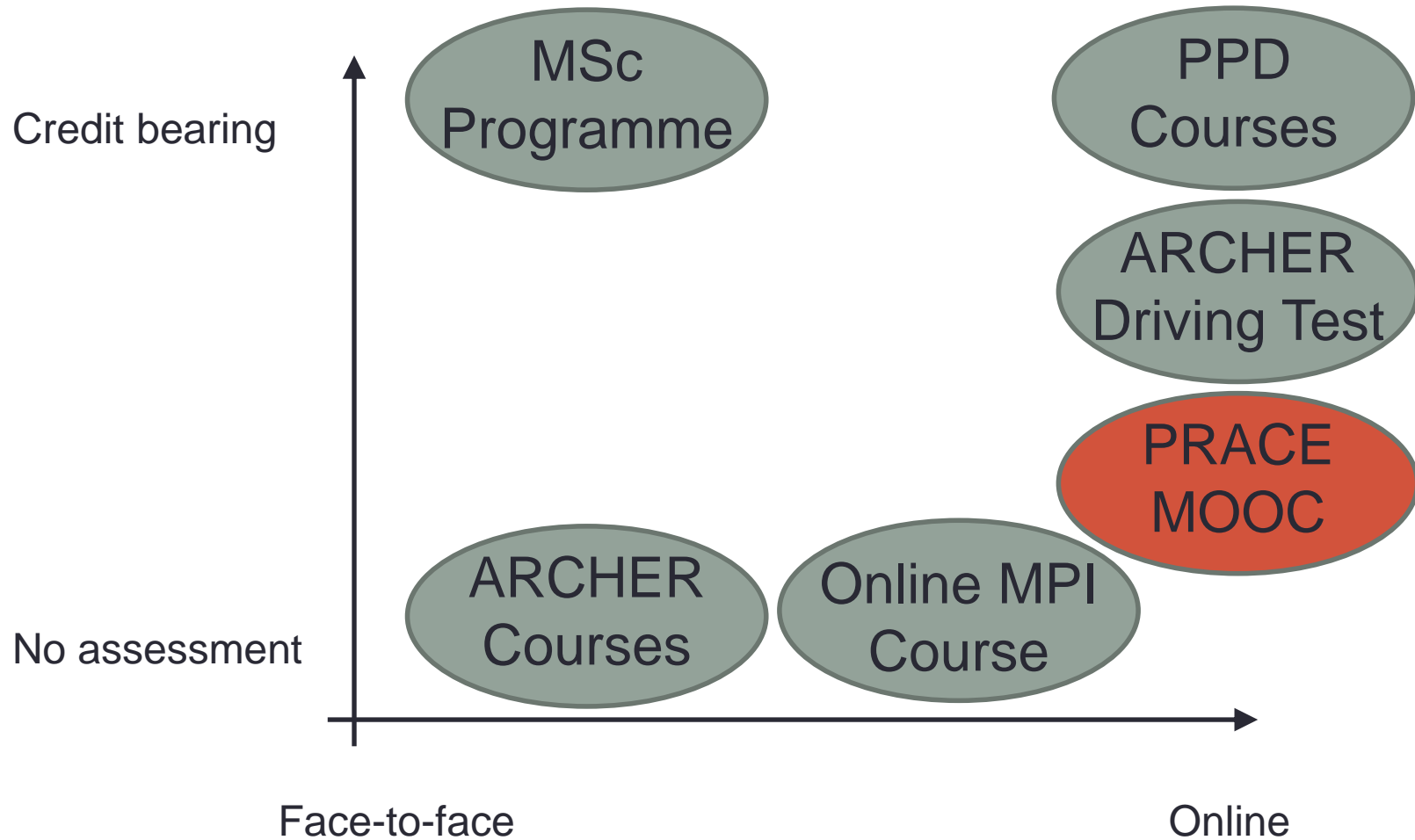


# ARCHER driving test

- Around 360 users passed test so far, 270 given accounts
  - lecture recordings part of learning materials

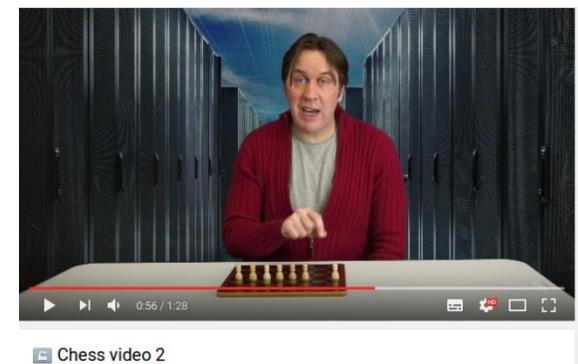
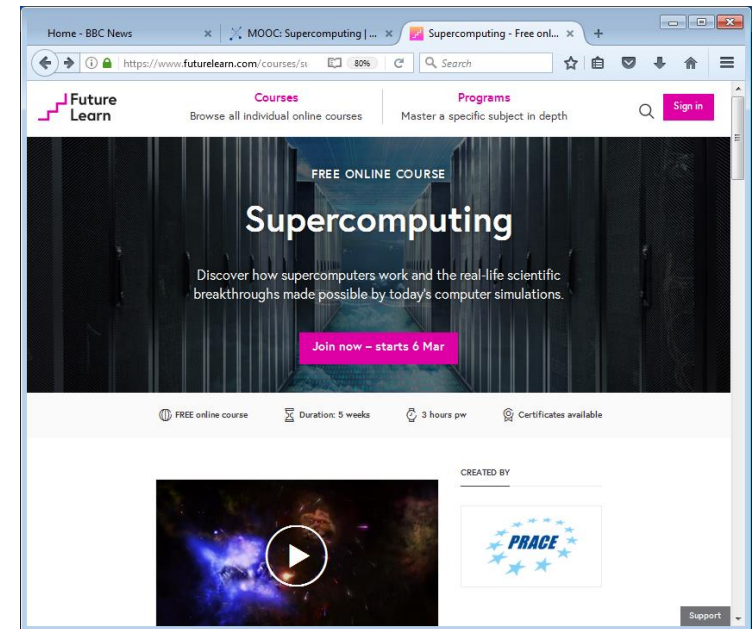


# EPCC Ecosystem



# futurelearn.com/courses/supercomputing/

- Free introductory course
  - videos, articles, quizzes, discussion boards etc.
  - certificate upon completion of multiple choice test (+fee!)
  - largely conceptual
  - tutors contribute to discussions
  - “ask an expert” sessions
- Three runs: Feb 17, Aug 17, Jan 18
  - approx joiners: 3000, 3000, 1500
  - approx completion: 300, 300, 150
- Next run in September this year





# Conclusions

- Technology has matured incredibly in the past 5 years
- Online training is a spectrum
- What doesn't seem to work
  - joint face-to-face and webcast is problematic
  - taking questions over audio
- What does work
  - community support on larger MOOCs
  - chat-based questions
  - instant-feedback online quizzes