Online Training

David Henty

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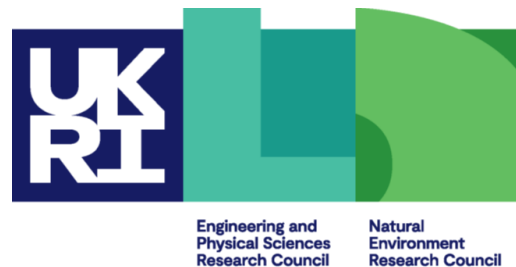
Reusing this material

Format

- Overview: David Henty

- Synchronous vs Asynchronous Delivery: Mark Bull

- Online MSc Programmes: Adam Carter

- Supercomputing MOOCs: Weronika Filinger

EPCC / ARCHER Ecosystem
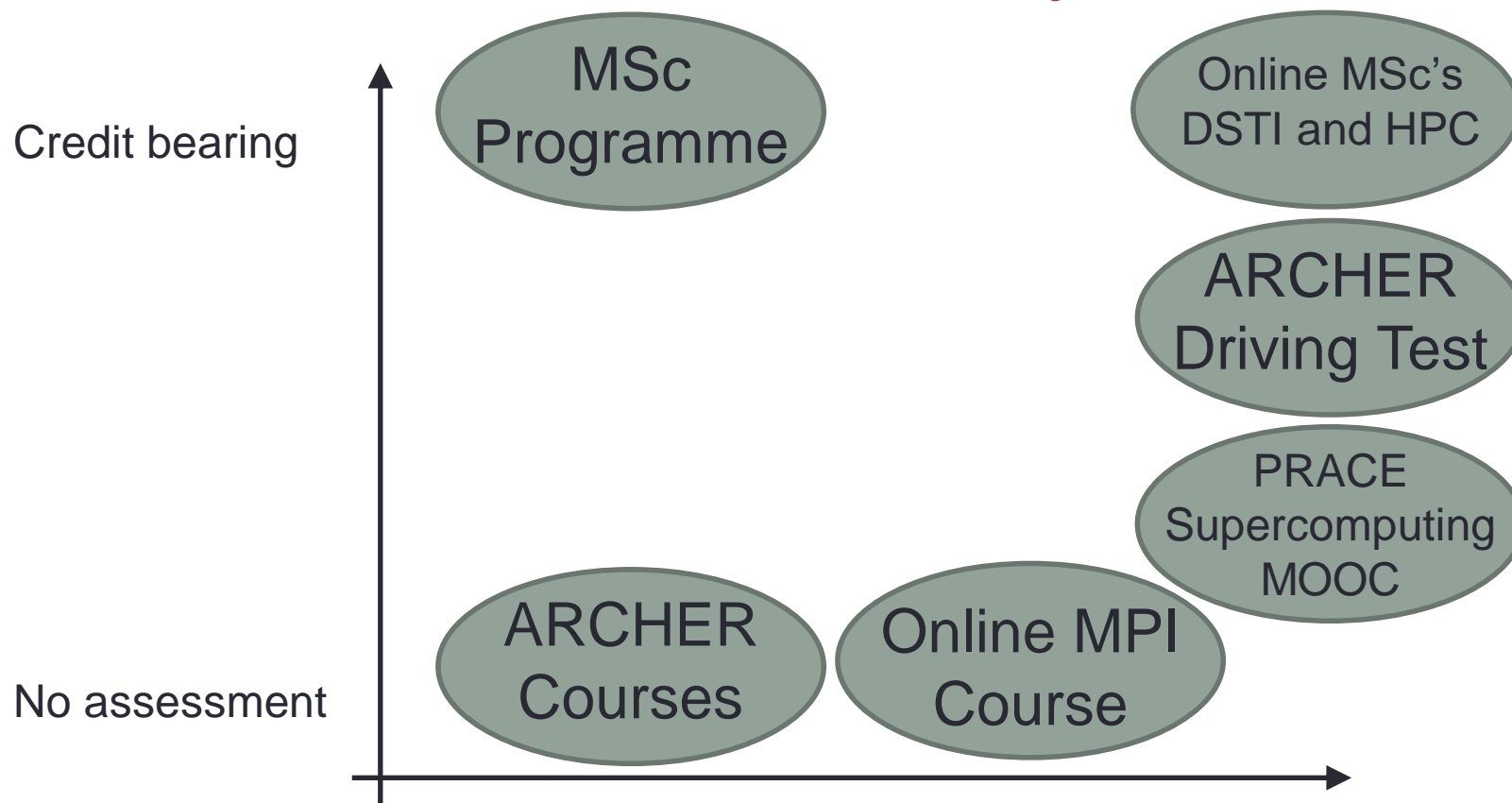
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MSc in HPC / HPC with Data Science

- Classical format residential taught Masters programme
  - fees are charged
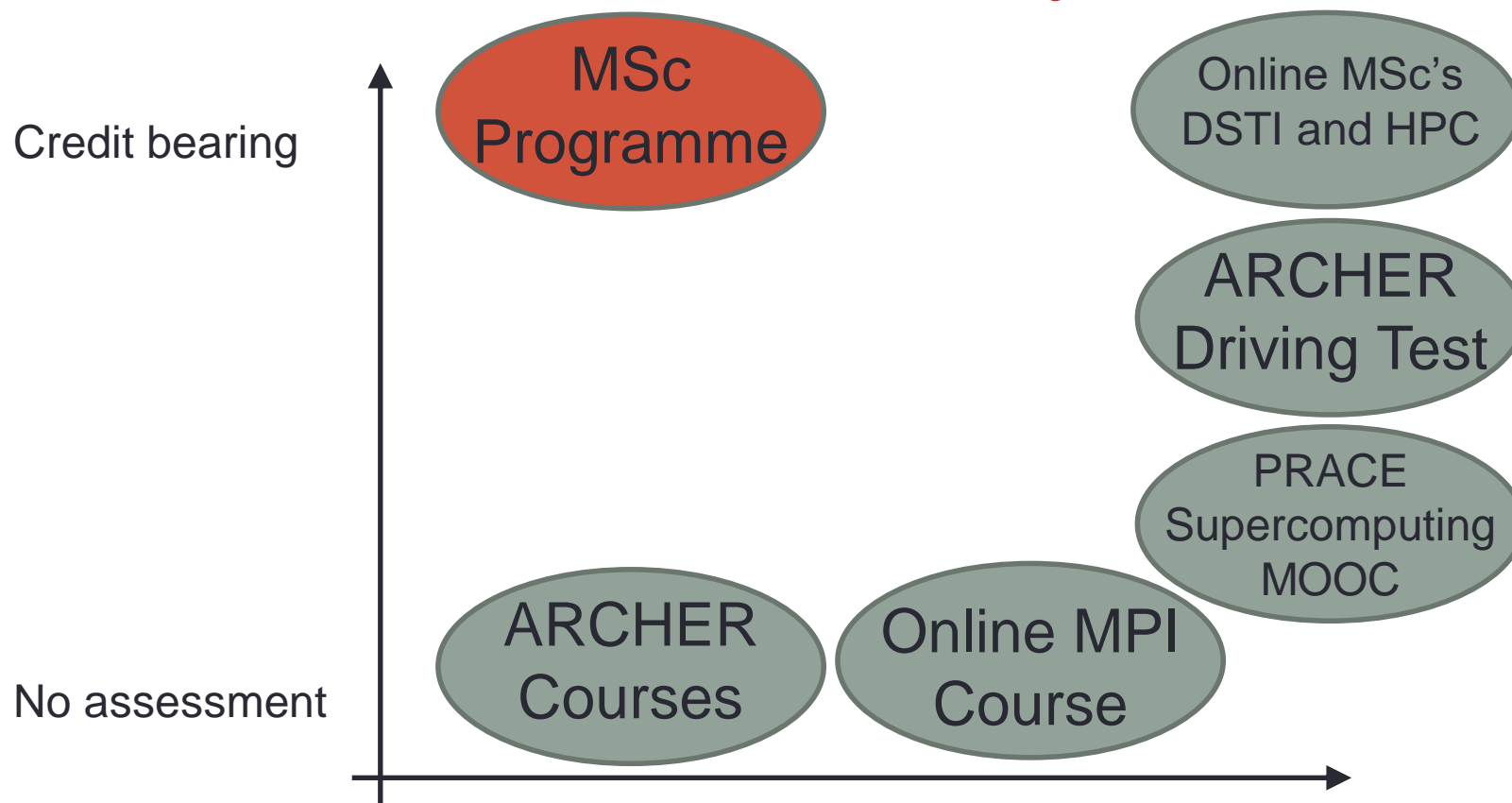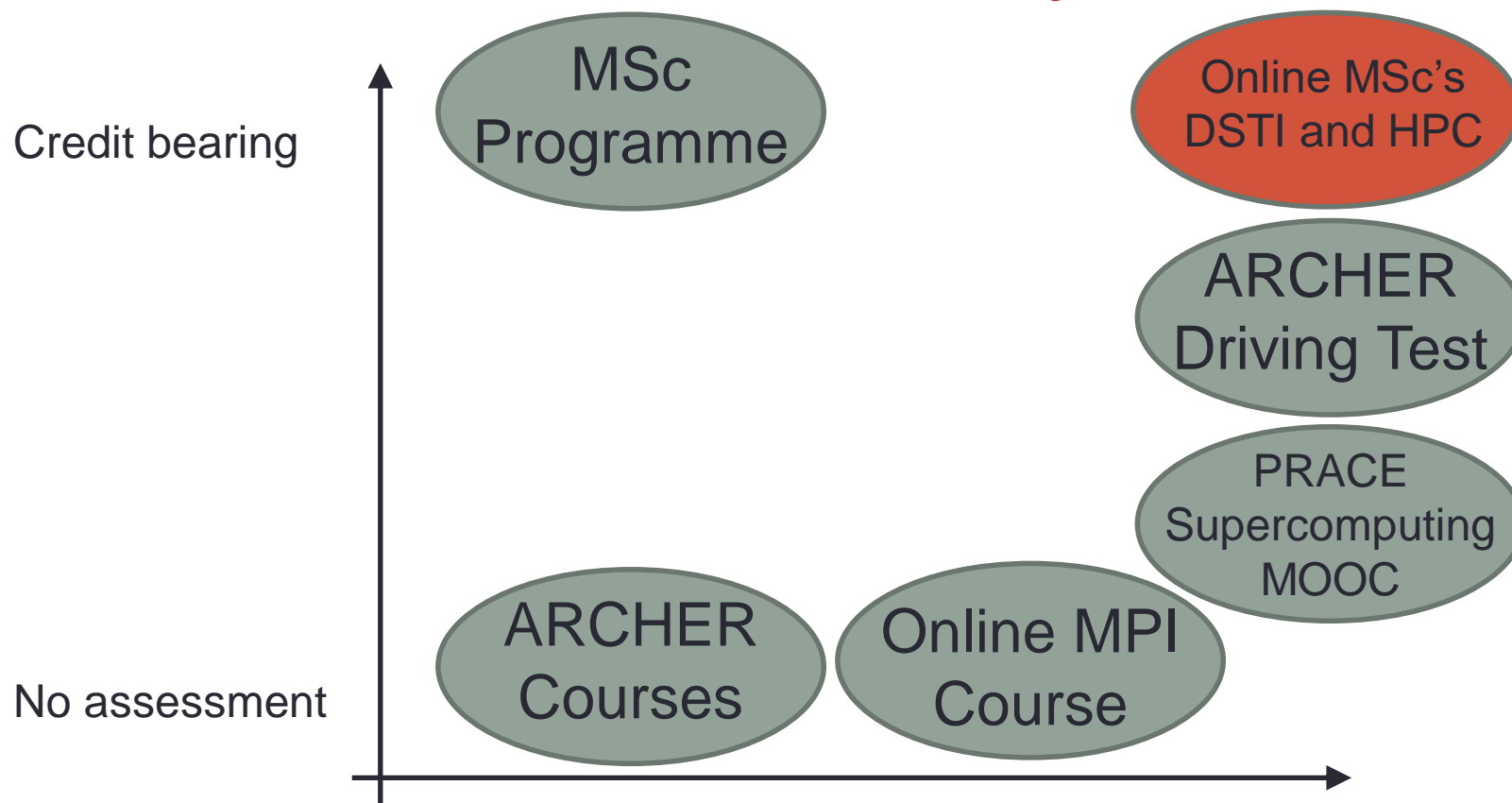 - over 70 students in 2019/20
  - lectures + lab sessions
- Students use Learn VLE
  - PDFs of lectures
  - all practical material
  - coursework submission
  - recordings of all lectures
- Collaborate for webinars
  - e.g. backup during "Beast from the east" and COVID-19

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Credit bearing

No assessment

Face-to-face

Online

- MSc Programme
- Online MSc's DSTI and HPC
- ARCHER Driving Test
- PRACE Supercomputing MOOC
- ARCHER Courses
- Online MPI Course

Online Masters: DSTI
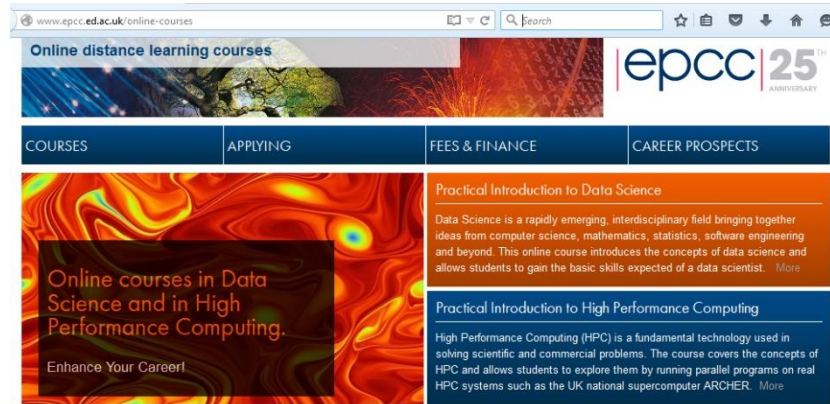
- Currently run three courses under Data Science Technology and Innovation (DSTI) MSc programme
  - Practical Introduction to HPC; Practical Introduction to Data Science; Threaded Programming with OpenMP
- Entirely online via Learn with recorded lectures
  - fees charged; around 100 students across all courses
  - courses are 20+20+10 credits (out of 120 taught credits)
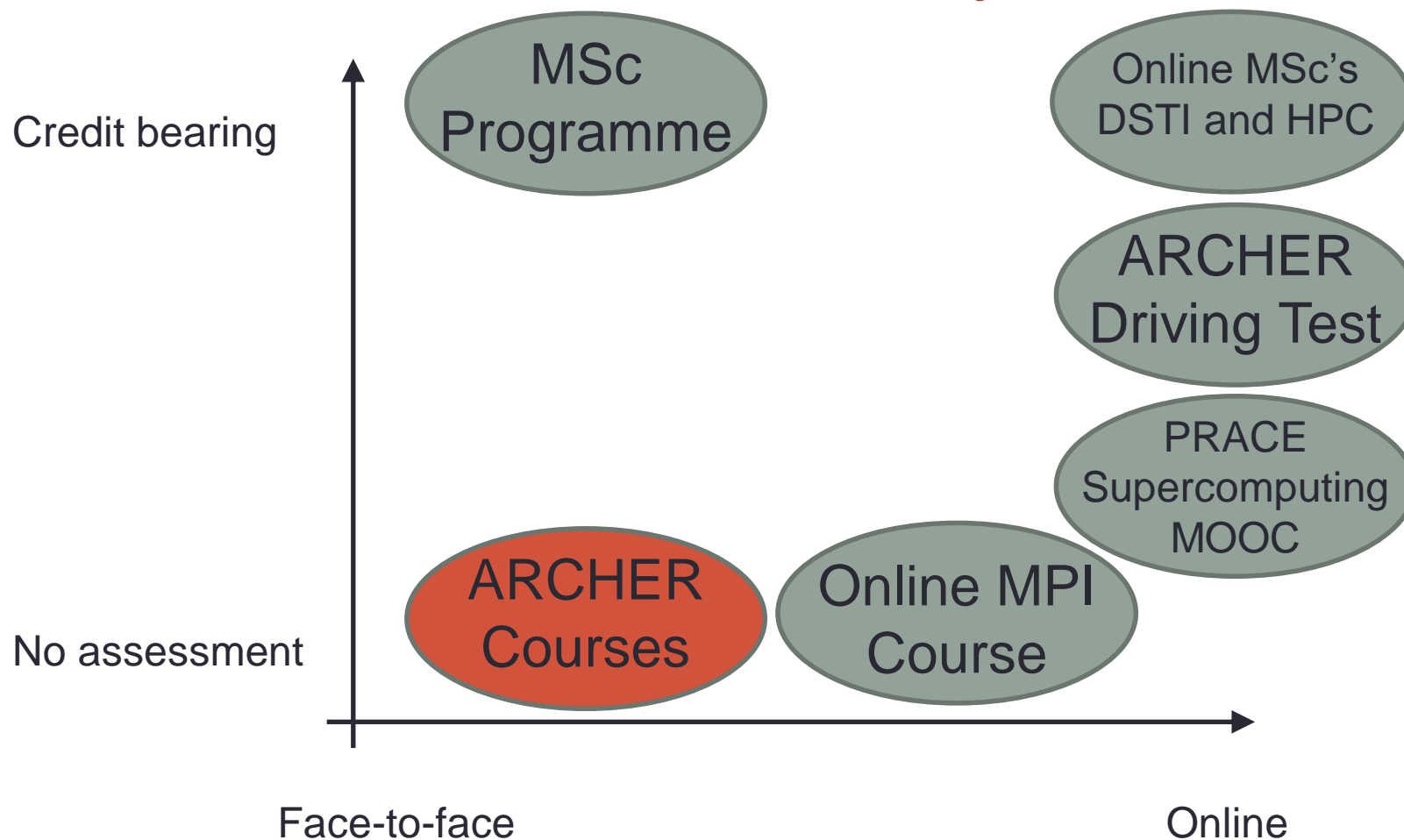 - no exams – 100% coursework

Online Masters: MSc in HPC
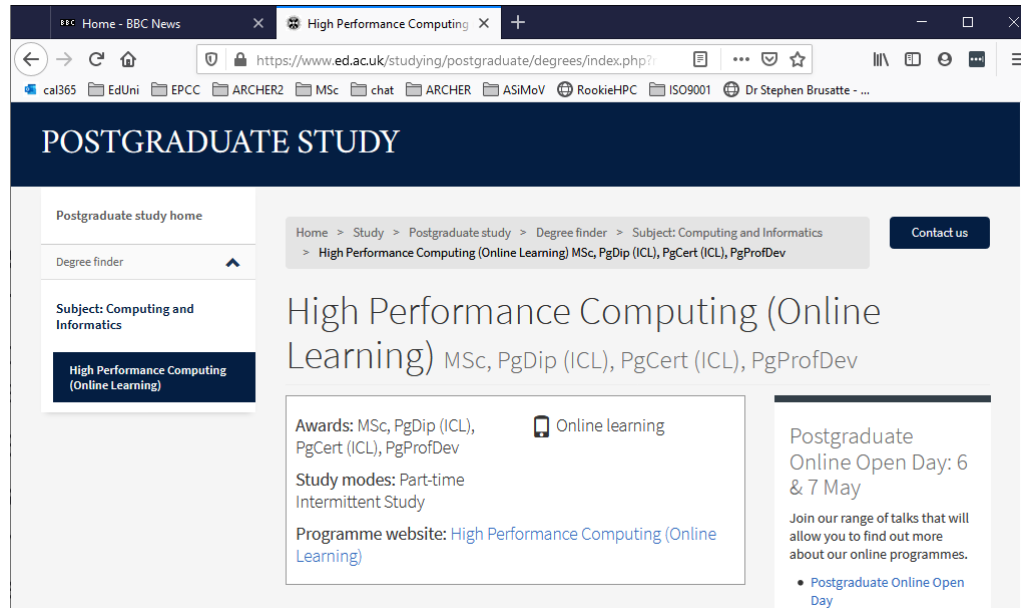
- Launching full MSc in HPC online programmes for 2020/21
  - building on experiences of existing HPC courses under DSTI
  - possibility of some online exams

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Credit bearing

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MSc Programme

Online MSc's DSTI and HPC

ARCHER Driving Test

PRACE Supercomputing MOOC

ARCHER Courses

Online MPI Course
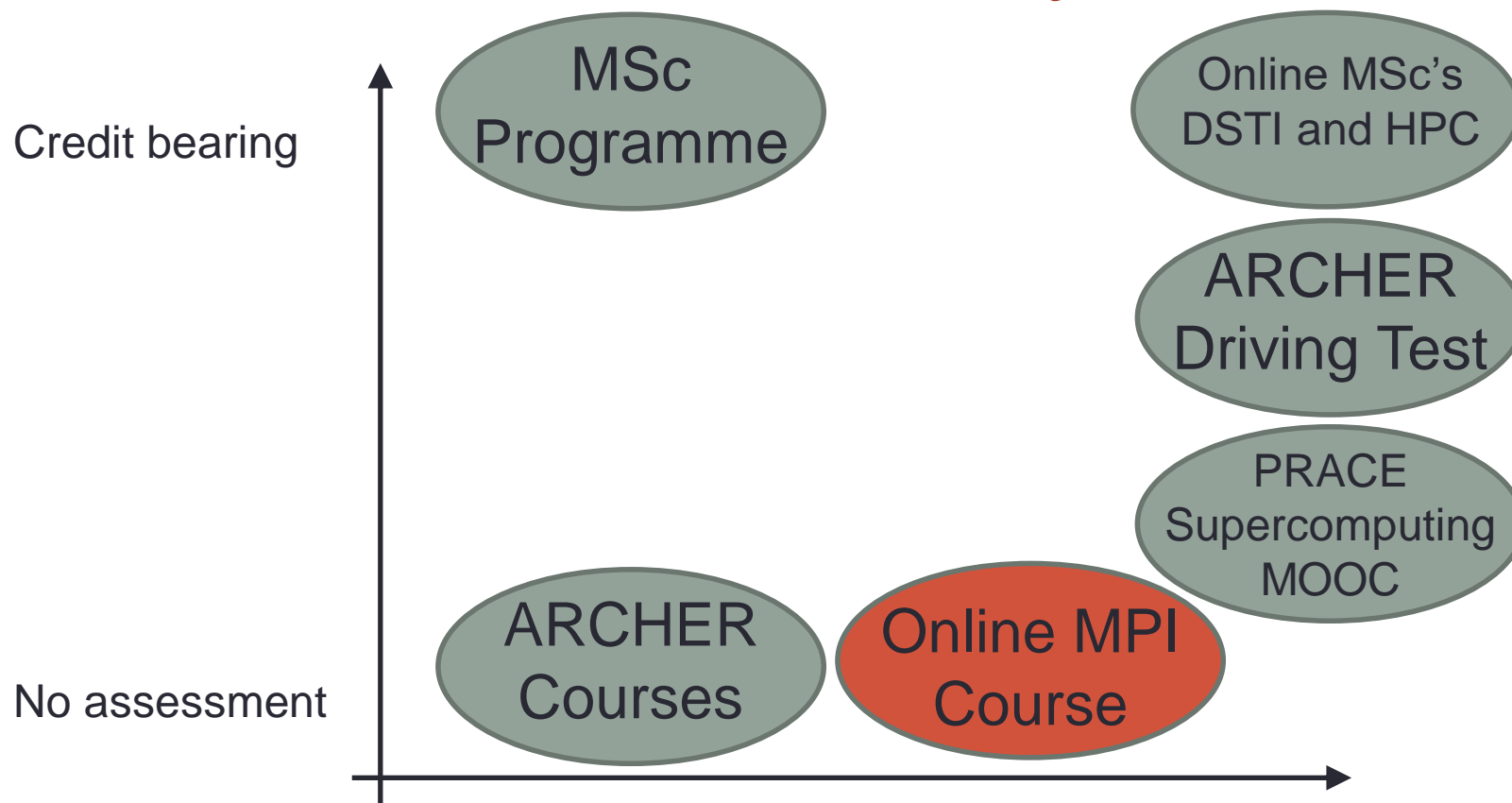
ARCHER Courses

- 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?

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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 runs 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

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Credit bearing

MSc Programme

Online MSc's DSTI and HPC

ARCHER Driving Test

PRACE Supercomputing MOOC

No assessment

ARCHER Courses

Online MPI Course

Face-to-face

Online

ARCHER driving test
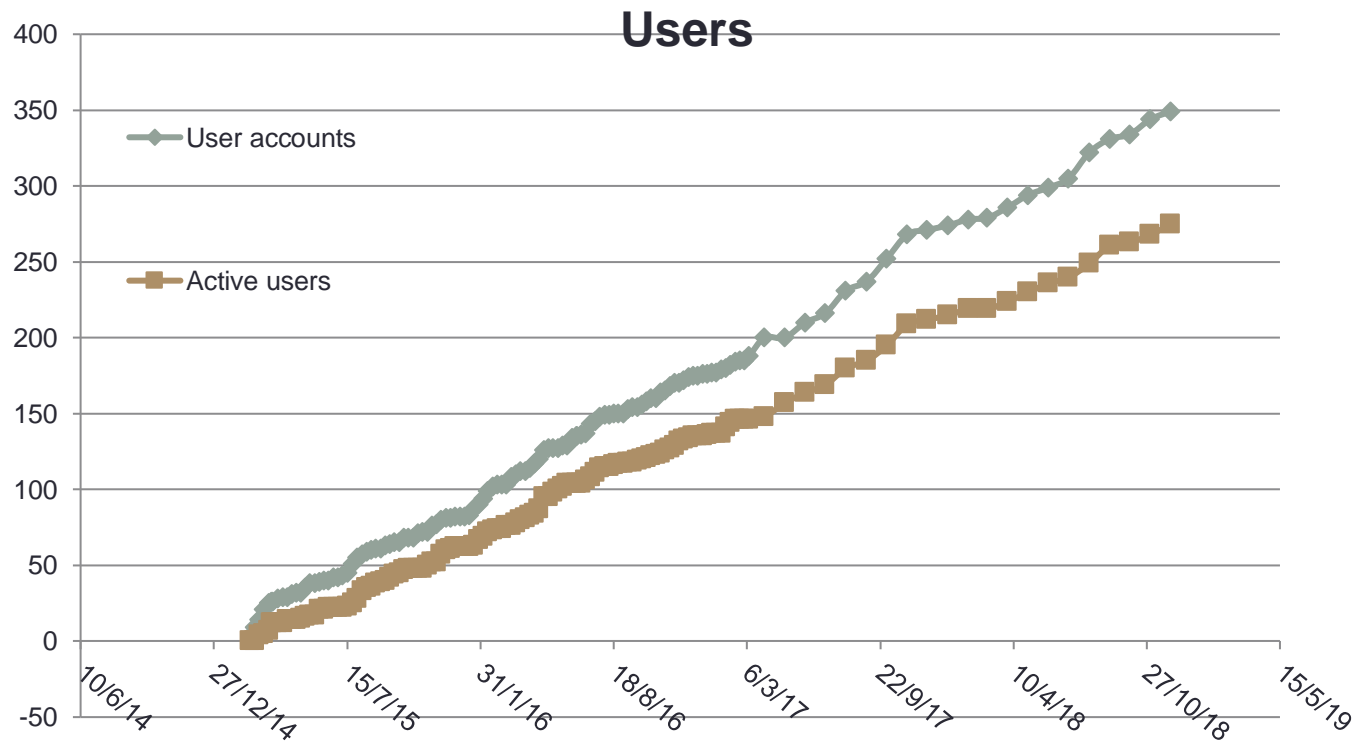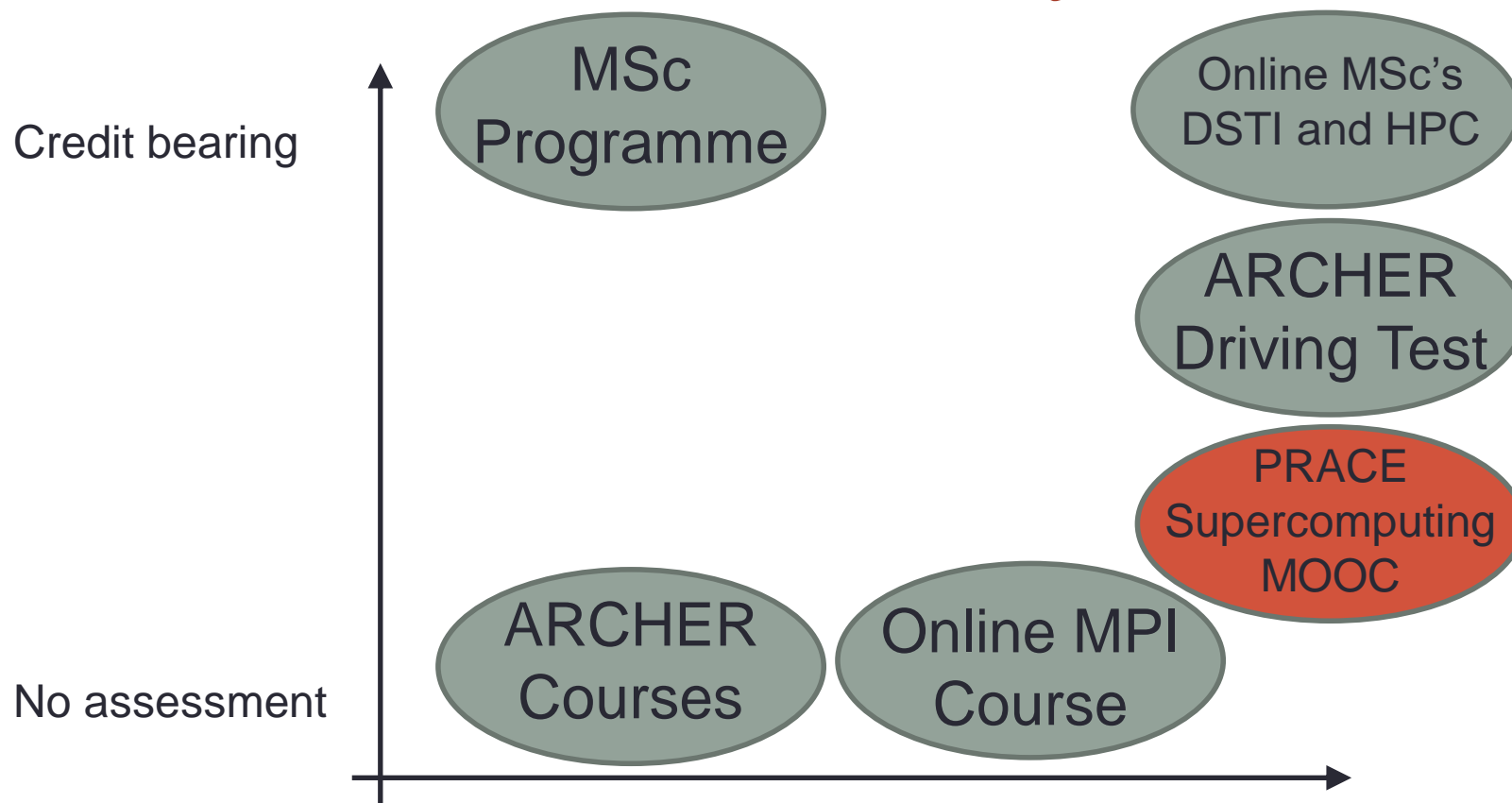
- Around 500 users passed test to date
  - lecture recordings part of learning materials
  - online assessment

**Users**

Legend: User accounts, Active users

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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

- Five runs: Feb 2017, Aug 2017, Jan 2018, Sep 2018, October 2019
  - approx joiners: 3000, 3000, 1500, 1000, 600
  - approx completion: around 10%
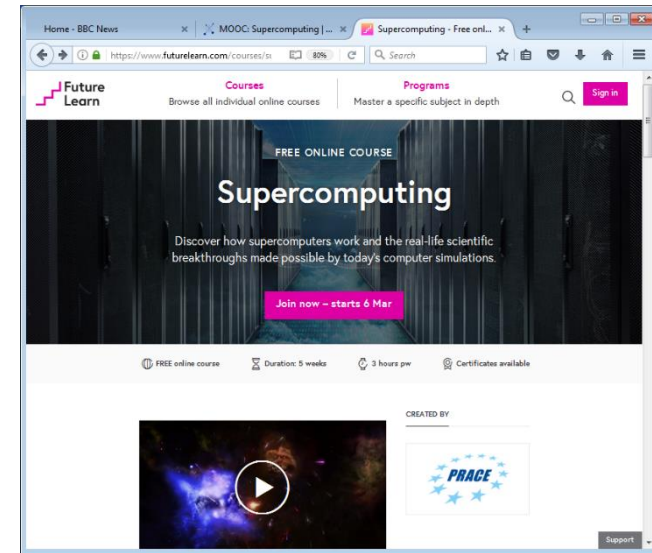
Chess video 2

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 and discussions
  - screen-sharing for practical support