

ISE Visionary Workshop Report

Notes: 4 Dec 2013 (Cardiff University)

Agenda

1. Introduction (20 mins)
2. eLearning challenges and requirements (45 mins)
3. ISE project (25 mins)
4. Coffee break (15 mins)
5. eLearning resources (45 mins)
6. Feedback and summary (30 mins)

Resources demonstrated

- Chromoscope: www.chromoscope.net
- Star in a Box: lcoqt.net/siab <http://www.astro.cardiff.ac.uk/community/?page=siab>
- Multiwavelength Universe: <http://herschel.cf.ac.uk/activity/multiwavelength>
- Design a Space Telescope: <http://herschel.cf.ac.uk/education/school-activities/resources>

Present

- Stuart Jones (Cardiff Metropolitan University, Wales)
- Richard West (Stanwell School, Penarth, Wales)
- Gareth Trapnell (Bryn Celynnog, Beddau, Wales)
- Eric Combes (Whitchurch High School, Cardiff, Wales)
- Rob Lewis (Dauntsey's School, Devizes, England)
- Sam Chilcott (Monkton Combe School, Monkton Combe, England)
- Andy Muggleton (Corpus Christi High School, Cardiff, Wales)
- Natalie Neil (St Teilo's School, Cardiff, Wales)
- Matt Miller (St David's College, Cardiff, Wales)
- Jonathan Lock (St Richard Gwyn School, Barry, Wales)
- Ruth Perkins (Science Made Simple)
- Cerys Terry (See Science)
- Keith Jones (Prestatyn High School, Prestatyn, Wales)

What teachers require from eLearning resources/scenarios

Essential requirements	Desirable requirements
<ul style="list-style-type: none"> ● Resources and/or material must be editable and adaptable to suit specific needs ● Duration 40 minutes max (or in chunks of that length) to fit into a lesson ● Linked to curriculum specification ● Use of assessment for learning (questions as part of learning process) ● Use of assessment of learning (questions at end to assess what they've learned) ● Simple and easy to use ● Clear instructions 	<ul style="list-style-type: none"> ● 'Wow factor' to engage students ● Accessible from home ● Ability to send results to the teacher ● Downloadable where possible (does not require internet connection) ● Does not rely on sound (or can have sound turned off!) ● Extensions for keen students ● Encouragement of parent interactivity ● Specialist techniques ● Does not rely on too much maths ● Linking with careers/jobs ● References to literacy/numeracy framework ● online homeworks/surveys etc. ● Suitable for individual use or by teacher at the front

What teachers require from eLearning repository

- Links to syllabus
- Ability to search repository by specification/theme
- Resources and/or repository listed in exam board support material
- A support network or noticeboard/forum
- Ability to rate and/or comment on resources

Challenges teachers face with eLearning resources

- Curriculum ties
 - Severe time constraints for 16-19 classes
 - More flexibility with 11-14
- Maths ability not up to standard for errors/analysis etc.
- Limited by IT resources
 - Can't easily install software
 - Limited browser choice (often IE)
 - Network often flaky
 - Can't always access one computer per student

ISE Project Accreditation ideas

- Time commitment a concern
- Some form of accreditation very much appreciated
- Statement (for e.g. School website) greatly appreciated
 - Suggest "consultant" as appropriate term
 - Links to e.g. numeracy strategy would be useful.

eLearning Resource feedback

Star in a Box:

- Very well received
- Clearly links to syllabus
- Teacher would need to play before lesson
- Useful as a revision tool
- Keen students would go away and play more
- Suggested modifications/improvements:
 - Link to past paper questions
 - Drag and drop pictures of stars?
 - Flash up stage names when they change
 - “Quiz mode” with pop-up questions (multiple choice) over course of lifecycle
 - Student would have to answer correctly to proceed, otherwise start again

Design a Space Telescope

- Very high level (A-level)
- Links to lots of syllabus: EM spectrum, optics/resolution, Wein’s law, orbits/gravity etc.
- Too much for one session
- Needs to be broken into smaller chunks
- Does it need too much time?

Multiwavelength Astronomy

- Clear links to EM-spectrum
- Nice range of types of objects
- Lots of material there, with lots of possible extensions
- Useful as providing context at GCSE and A-level
- Activity useful at KS3 as well
- Paper version requires a *lot* of printing, so online version maybe better
- Suggested modifying working on student question sheet introduction

Chromoscope

- A perfect hook for EM spectrum
- Has been used at all ages
- Provides a useful context, particularly at A-level
- Good links to other tools (Google Sky Worldwide Telescoep etc.)