Exploring the affordances of virtual fieldwork in a multi-user, 3-D digital environment

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Virtual Skiddaw:
Exploring the affordances of virtual fieldwork in a multi-user, 3-D digital environment

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What we built

100 km² area
real data, maps

6 detailed sites
higher res
hand specimens
task lists

Navigation
avatars
guided (linear)
free-roaming
teleports

Chat
range adjustable

Support
manual, transcripts
Gaming VFTs: challenges

Cost: resources, people, time
Real data: detail vs performance
Framework: self-contained vs adaptable
Comparisons: virtual vs physical fieldwork
Overload: not alienating non-gamers...

Gaming engine: affordances

‘3D’ landscape – geology in context; spatial literacy
Rich interface – interactivity and immersion
Self-contained – (mostly): little linked material
Multi-user – especially for distance learners
‘More than fieldwork’ – do something different:
  – flying
  – aerial views, map overlays
  – in-world cross-section
  – teleports (time-saving)
  – fadeable avatars

What about: F2F students? or schools?
Evaluation & the future...

1. V-skiddaw at the OU
   eSTEeM project + Steve Tilling

2. V-skiddaw for A-Level students

3. A Virtual Field Trip Service
   innovate UK project
   Daden Ltd, DesignThinkers, OU

What about: F2F students? or schools?

Virtual Field Trip Ecosystem

- Authoring Institution (also likely to be a user institution, but could be non-educator)
  - Technically Skilled Educator/Staff
  - Create new locations and core lesson plans
  - Digital area from sat/aerial/site

- Geospatial Subcontractor
  - Digitise area from sat/aerial/site

- User Institution
  - Educators
  - Customise Lesson Plans
  - Learning Analytics
  - Experience Virtual Field Trips
  - Create User Generated Content
  - £ Revenue Stream from others’ use
  - £ Payment, eg per use, per loc, global pass, per annum

- Web/Cloud
  - Multiple Locations, eg Skiddaw, Snowdon, Everest, Moon

- Core App
  - Multiple Lesson Plans
  - KS1-3, GCSE, UGrad

- VFTaaS Operator (Daden)
  - New Locations
  - New Features
  - Management/Support Costs

Revenue/Cost flows in yellow
Questions for you

1. Main attractions of Virtual Skiddaw?
2. How would you use a similar VFT?
3. Should we make more?
4. Would you like to be involved?
Shameless plug...

The OpenScience Laboratory
An initiative of The Open University and The Wolfson Foundation
This online laboratory brings interactive practical science to students anywhere and anytime this internet is available. The laboratory features investigations based on one-person instruments, remote access experiments and virtual scenarios using real data. Several activities are available to all, while others are available only to registered users.

Project team (1)

Open University
Shailey Minocha – leader, virtual worlds
Tom Argles – geologist
Brian Richardson – production manager
Kat Garrow – project manager
Sarah Hack – graphic designer
Nick Braithwaite – OSL Director
Sarah Davies – academic consultant

Trent & Peak Archaeology
David Strange-Walker – LiDAR, photogram
Project team (2)

Daden Ltd
David Burden – project lead
Paul Rahme – programmer
Macdonald Mbaya – programmer
Darrell Smith – project manager
Tim Lozinski – graphics/environment
Iain Brazendale – programmer
Lucy Smallwood-Rose – administrator
Guy Wallace – graphic designer
Chris Stevens – programmer

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