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

Tom Argles, Shailey Minocha
(The Open University)

David Burden
(Daden Ltd)

email: tom.argles@open.ac.uk

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...

How to combat fear that VFTs might replace real field teaching?

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
- Under contract (if reqd)
- Digitise area from sat/aerial/site

User Institution
- Educators
- Customise Lesson Plans
- Learning Analytics
- Experience Virtual Field Trips
- Create User Generated Content

Geospatial Subcontractor
- £ Revenue: Stream from others’ use

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

Multiple Lesson Plans
- KS1-3
- GCSE/A
- UGrad

VFTaaS Operator (Daden)
- £ Revenue/Cost flows in yellow
- New Locations
- New Features
- Management/Support Costs

£ Payment, eg per use, per loc, global pass, per annum

£ Revenue Stream from others’ use

£
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…

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

Site visit, April 2013