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 resolution
- Hand specimens
- Task lists
- Navigation avatars
- Guided (linear)
- Free-roaming teleports
- Chat
- Range adjustable
- Support
- Manual, transcripts

Access via web browser
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**  
eSTeM project + Steve Tilling

2. **V-skiddaw for A-Level students**

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

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**Virtual Field Trip Ecosystem**

- **Authoring Institution**  
  (also likely to be a user institution, but could be non-educator)
  - Digitise area from sat/aerial/site
  - Create new locations and core lesson plans
  - Under contract (if reqd)

- **User Institution**  
  - Educators
  - Customise Lesson Plans
  - Learning Analytics
  - Experience Virtual Field Trips
  - Create User Generated Content
  - KS1-3, GCSE/A, UGrad
  - Students

- **Geospatial Subcontractor**
  - Digitise area from sat/aerial/site
  - £ Revenue Stream from others’ use

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

- **Core App**  
  - VFTaaS Operator (Daden)
  - Management/Support Costs

- **Revenue/Cost flows in yellow**
  - £ Revenue, eg per use, per loc, global pass, per annum
  - £ Payment, eg per use, per loc, global pass, per annum

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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