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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(The Open University)
David Burden
(Daden Ltd)

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What we built

Access via web browser

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

### Virtual Field Trip Ecosystem

<table>
<thead>
<tr>
<th>Authoring Institution</th>
<th>User Institution</th>
<th>Geospatial Subcontractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>(also likely to be a user institution, but could be non-educator)</td>
<td>Educators</td>
<td>Digitise area from sat/aerial/site</td>
</tr>
<tr>
<td>Technicaly Skilled Educator/Staff</td>
<td>Customise Lesson Plans</td>
<td>Under contract (if req)</td>
</tr>
<tr>
<td>Create new locations and core lesson plans</td>
<td>Learning Analytics</td>
<td>£ Revenue Stream from others' use</td>
</tr>
<tr>
<td>£ Revenue Stream from others' use</td>
<td>Experience Virtual Field Trips</td>
<td>£ Payment, eg per use, per loc, global pass, per annum</td>
</tr>
<tr>
<td>£</td>
<td>Create User Generated Content</td>
<td>£</td>
</tr>
</tbody>
</table>

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

**Multiple Lesson Plans**  
- KS1-3  
- GCSE/A  
- UG/Grad  

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

**Management/Support Costs**
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...

![Image of The OpenScience Laboratory](image)

**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*