

# Remote fieldwork: Synchronous and asynchronous communication support for fieldworkers

Dr Trevor Collins  
Knowledge Media Institute

GEES: Geoscience graduates in the 21st century  
19th January 2011 – University of Leeds, UK

# Tools to support communication

- Synchronous
  - Happening at the same time
  - Examples: instant message chat, photo uploads, video streaming, VoIP phone calls, data sharing...
- Asynchronous
  - Not happening at the same time
  - Examples: discussion boards, emails, blogs, photo uploads, video uploads, audio podcasts, blogs, wikis...

# Outline

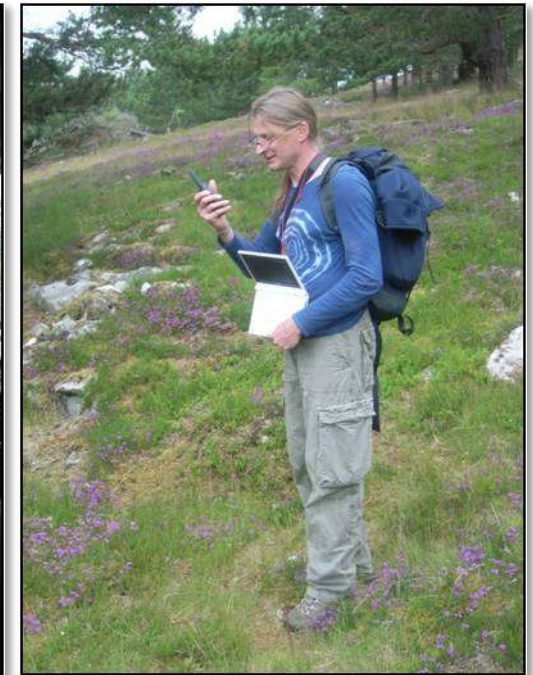
- Introduction
- Remote fieldwork
  - Approach: Technology enhanced learning
  - Pedagogy: Learning by doing
  - Requirements: Remote fieldwork
  - Technology: Communication using computer networks
  - Examples: Remote access and collaboration
- Demonstration & discussion
- Summary and further information

# Approach: TEL

- Technology enhanced learning
  - Technology and pedagogy development
    - Pedagogically informed
    - Technologically supported
  - Participatory and iterative development
    - Interdisciplinary teamwork approach
    - Shared common goal to enhance learning
  - Success criteria focused on learning outcomes

# Pedagogy (Learning by doing)

- Problem based learning
  - Practical problems
  - Tutor as a facilitator
  - Develop interpretation and reasoning



# Requirements of (remote) fieldwork

- Teaching and learning approaches
  - Cook's tour (tutor guide)
  - Tutor facilitator (problem based learning)
- Vicarious fieldwork: Seeing, hearing, feeling... being there
  - Seeing: Photographs and video
  - Hearing: (walkie talkies) VoIP phone calls
  - Feeling: Samples (and a hand lense)

# Technology: Computer networks

- Local (nearby) access
  - Local area network
    - Ethernet cable
    - Wireless (802.11x WiFi)
  - Benefits
    - Under your control
    - Relatively good bandwidth (i.e. volume) and low latency (i.e. delays)
  - Challenges
    - Time to set up and take down
- Internet (distant) access
  - Backhaul internet link
    - Broadband (e.g. home)
    - Mobile broadband (e.g. phone)
    - Satellite (i.e. BGAN terminal)
  - Benefits
    - Global access
  - Challenges
    - Dependant on network providers
    - Relatively limited bandwidth and latency (further to travel)

# Enabling Remote Activity project

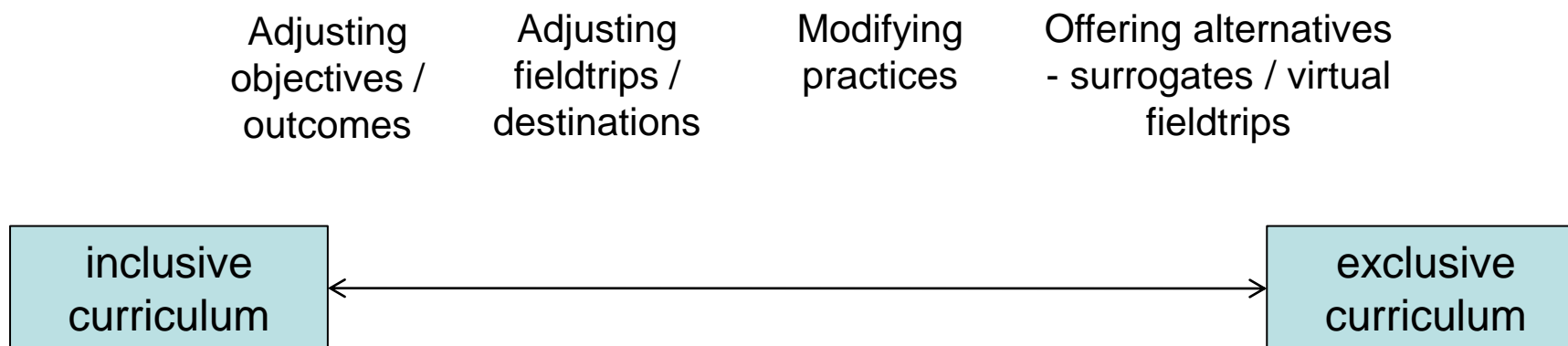
- Remote access to geology fieldwork for mobility impaired students





# Purpose: Remote access

- Access to difficult to reach locations
  - Accessibility: spectrum of approaches  
([Healey, Jenkins, Leach and Roberts, 2001](#))



# Out There and In Here project

- Remote collaboration between field and lab students



# Purpose: Remote collaboration

- Collaboration between individuals or groups
  - Separate locations ~ distinct resources and roles
    - Examples
      - Field area groups pooling data and synthesising shared findings
      - Field and lab students using lab or library resources to help interpret and inform field exploration
    - Encourage task focus, communication and reflection
      - Responsibility to share findings and conclusions

# Demonstration and discussion



<http://www.youtube.com/watch?v=2baM2JUEI8M>

Howick Haven (August 2009)

# Summary

- Remote access for additional fieldwork experiences
  - Access to difficult to reach locations
  - Collaboration opportunities with other groups
- So what? added value ~ shared activity artefacts
  - Local (nearby) or internet (distant) communication
    - Sharing electronic resources
    - Data collection, processing and presentation
    - Progress monitoring and orchestration

# Further information

- Enabling Remote Activity project
  - <http://projects.kmi.open.ac.uk/era>
- Out There and In Here project
  - <http://www.open.ac.uk/blogs/otih>
- The JISC toolshed
  - <http://ie-repository.jisc.ac.uk/450>
- ERA (VoWLAN) technical report
  - <http://projects.kmi.open.ac.uk/era/vowlan/report>
- Trevor Collins (email [t.d.collins@open.ac.uk](mailto:t.d.collins@open.ac.uk))

