Brian Whalley

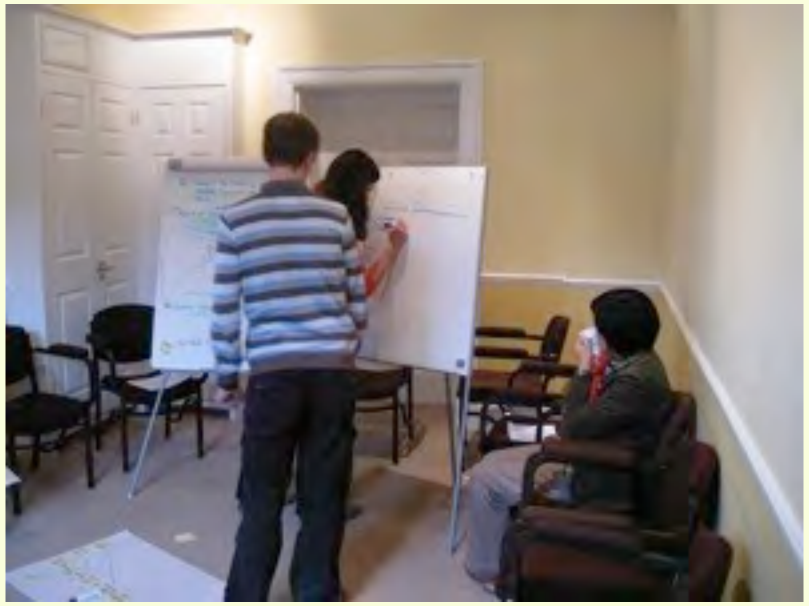
University of Sheffield
b.whalley@sheffield.ac.uk

Derek France, Chester University
Julian Park, Reading University
Alice Mauchline, Reading University
Katharine Welsh, Chester University
Vicky Powell, Chester University

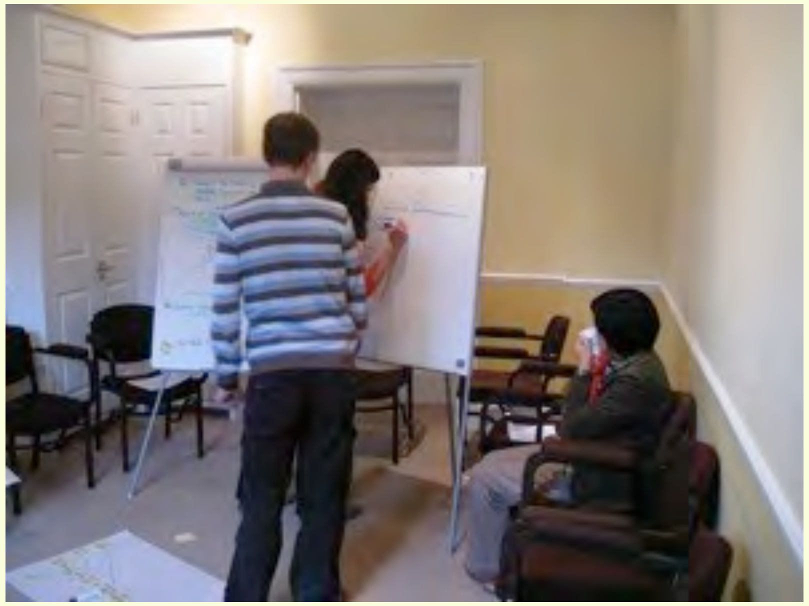
Personalised learning?
in personal learning spaces?

Personalised learning?
in personal learning spaces?

Personalised learning?
in personal learning spaces?

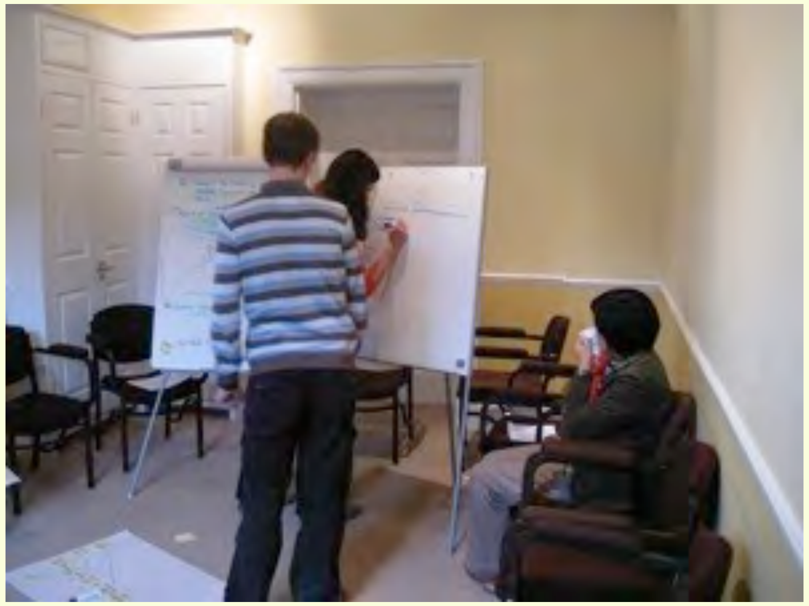


Personalised learning?
in personal learning spaces?



Personalised learning?
in personal learning spaces?

How do we personalise? and in what learning spaces?



And for learners:

‘Everyone should be able to participate and control their own learning process’

(Knowles, 1987)

How can we use ‘tablet’ computers to help?

We think of pervasive computing as a move from an interaction between an individual and a single device to an abundance of networked mobile and embedded computing devices that individuals and groups use across a variety of tasks and places

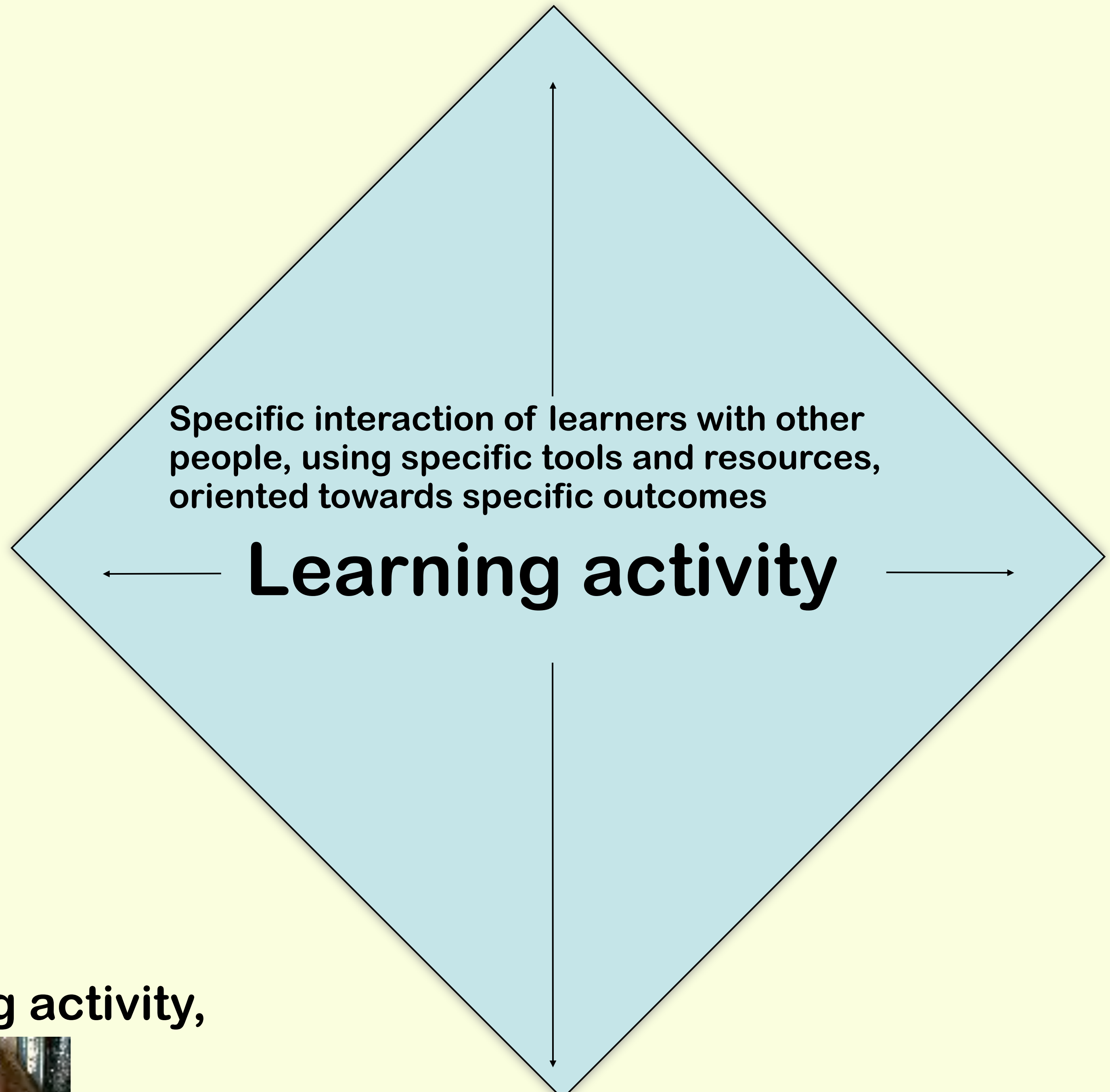
(Dryer et al., 1999)

Identities: preferences, needs motivations.
Competencies: skills knowledge, abilities
Roles; Approaches and modes of participating

Learners

Learning Environment

Tools, resources, artefacts affordances of the physical and virtual environment for learning



Learning Outcomes

New Knowledge, skills and abilities. Evidence of This and/or artefacts of the learning process

Others

Other people involved and the specific role they play in the interactions, e.g. support, mediate, change, guide

An outline for a learning activity, Helen Beetham 2007

Personal Learning Environment
A definition:

As such, a PLE is a single user's e-learning system that provides access to a variety of learning resources, and that may provide access to learners and teachers who use other PLEs and/or VLEs.

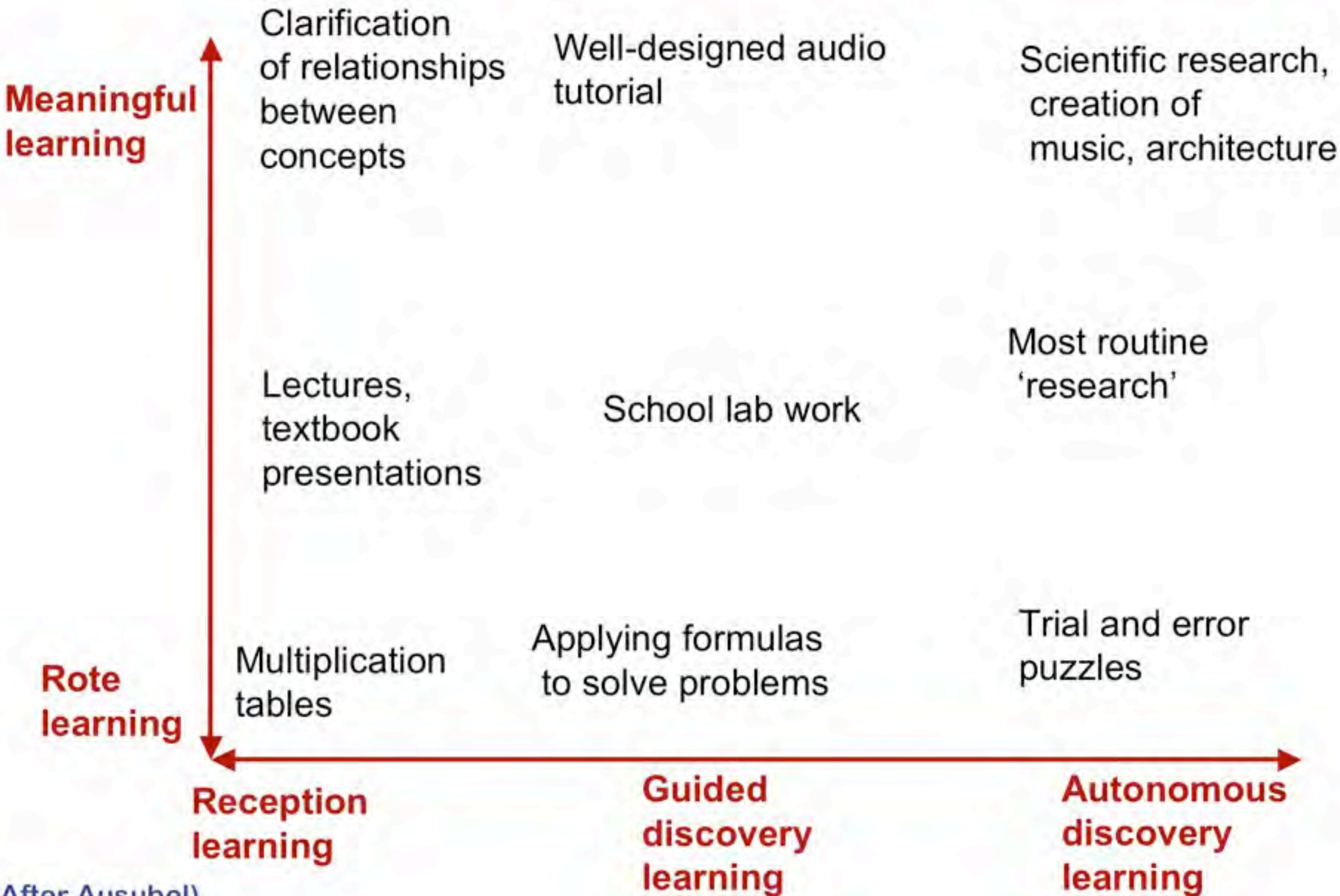
Mark van Harmelen 2006

(NB 'ideas about PLEs are still forming')

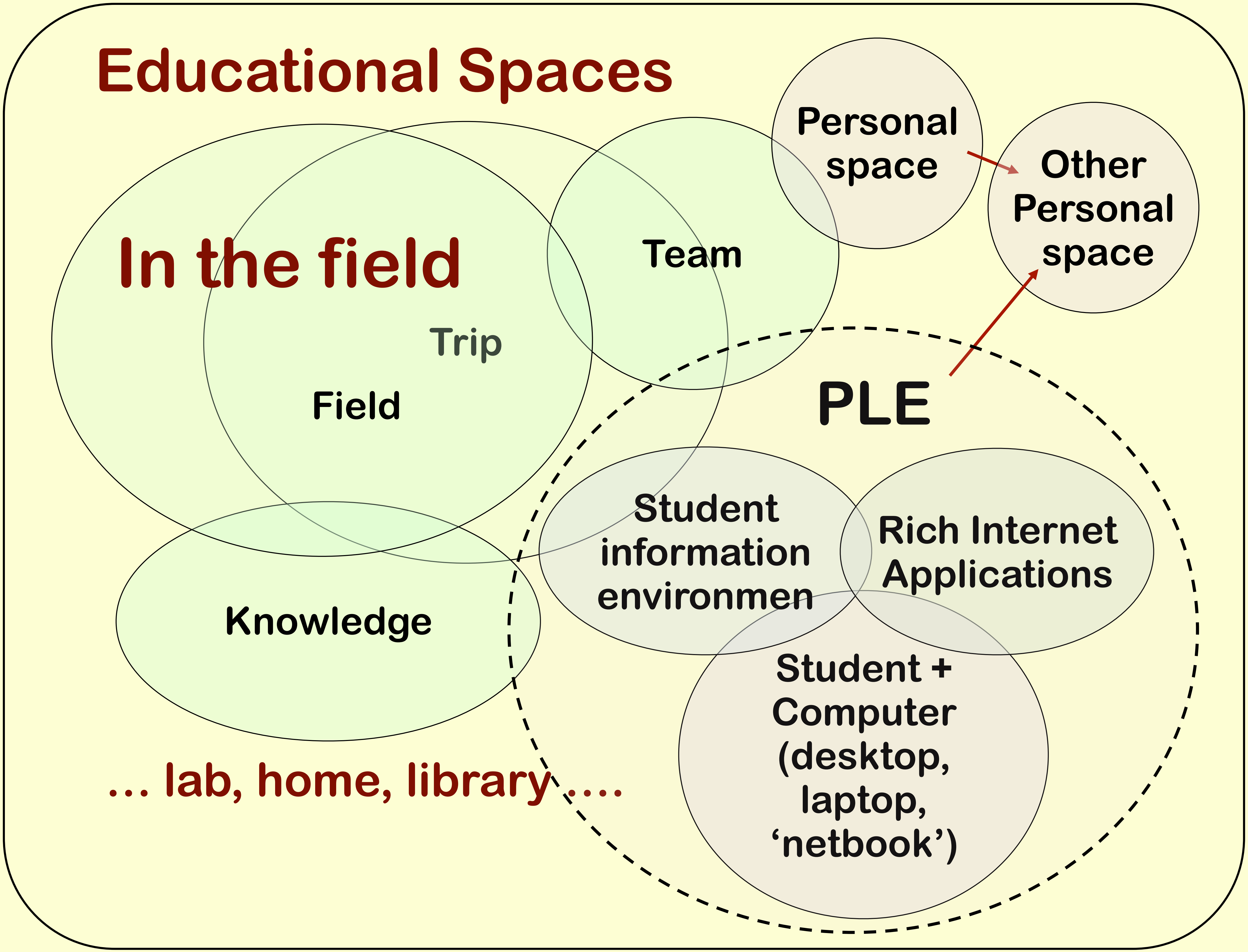
Work by Scott Wilson and Stephen Downes

Technology Enhanced Learning (Dillenbourg)

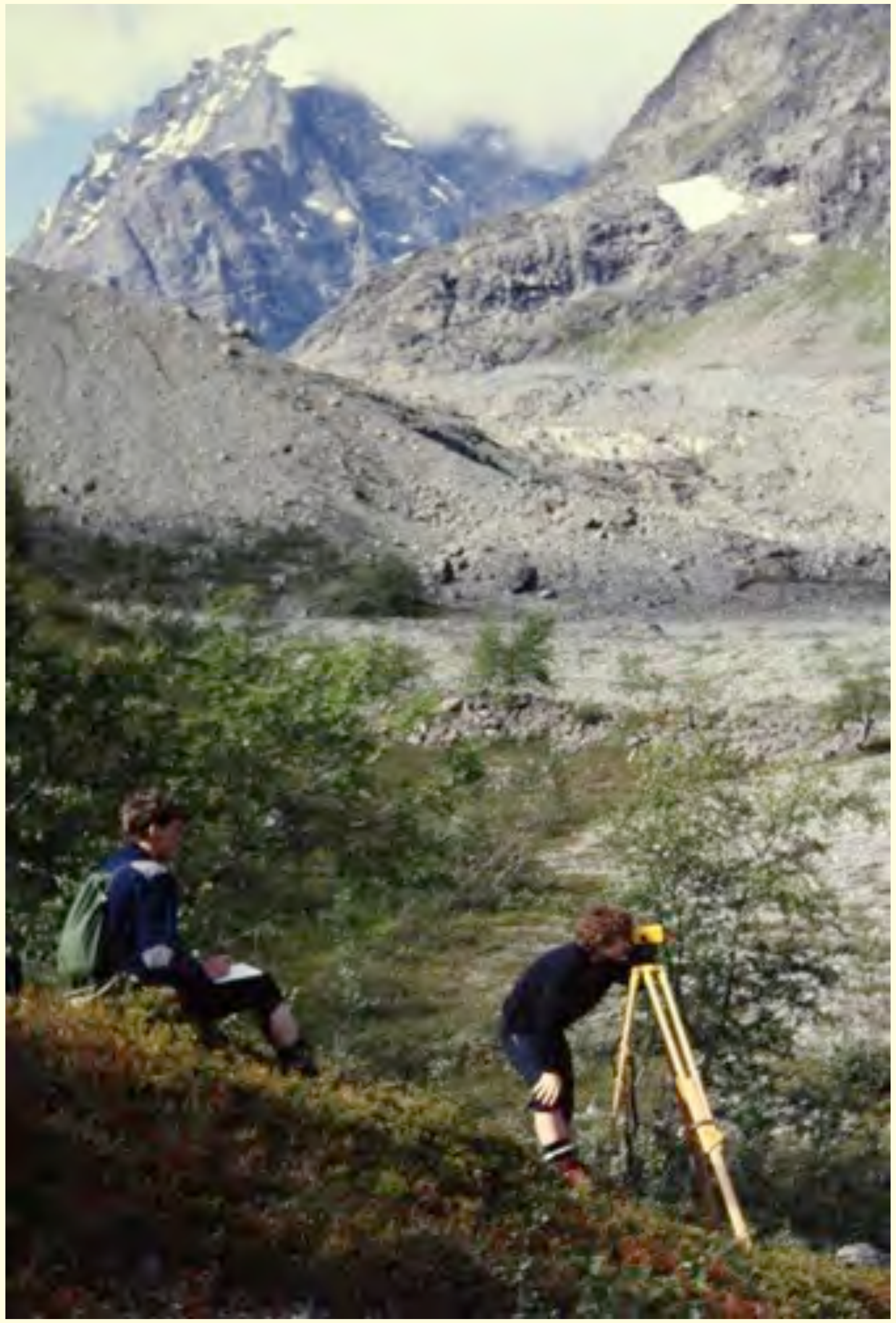
Reception and discovery learning



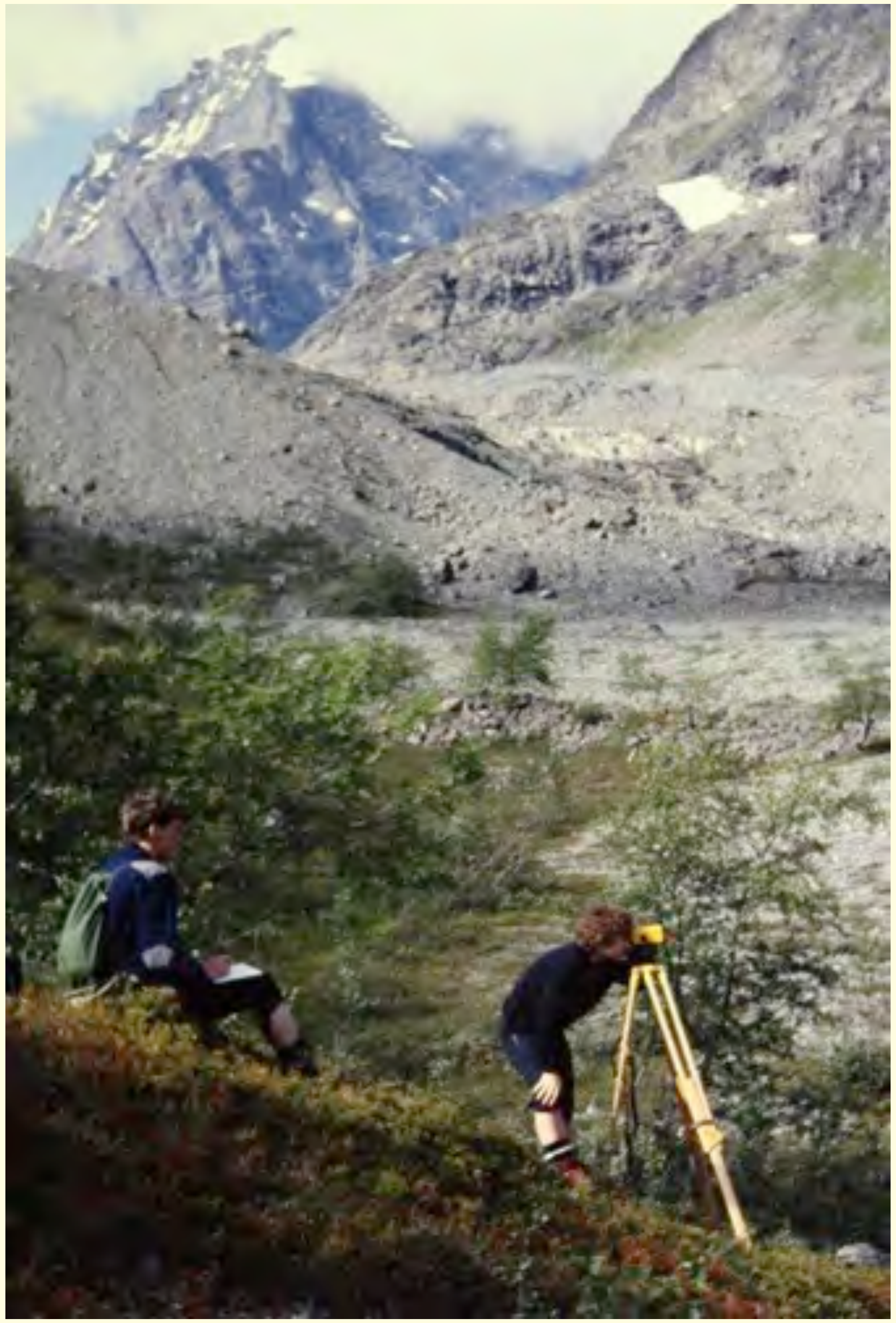
(After Ausubel)


Educational Spaces
Personal space
Other Personal space
In the field
Team
Trip
Field
PLE
Student information environmen
Rich Internet Applications
Knowledge
Student + Computer (desktop, laptop, 'netbook')
... lab, home, library ....

Computers in Fieldwork –
Lyngen Alps, North Norway, 1984

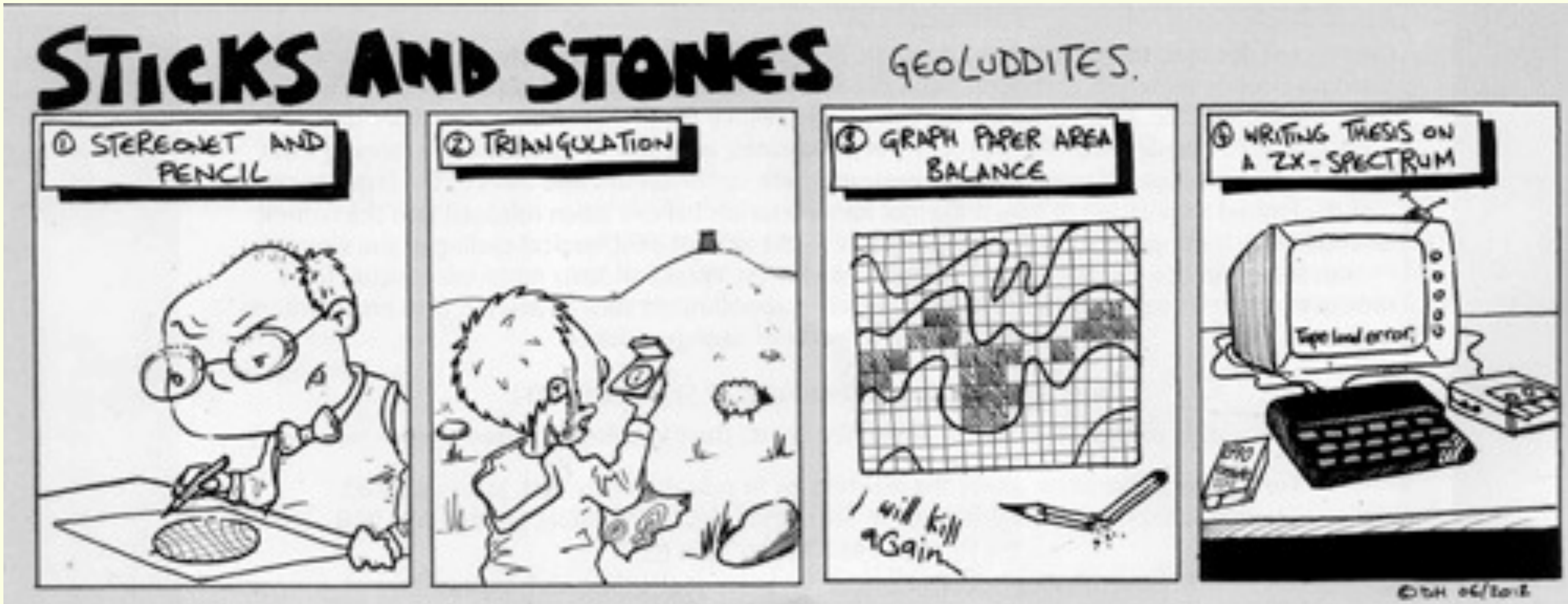


Computers in Fieldwork –
Lyngen Alps, North Norway, 1984



Apple IIe + HDD + CRT Screen + generator+ people to carry them

Technophobic Luddite Tendency*

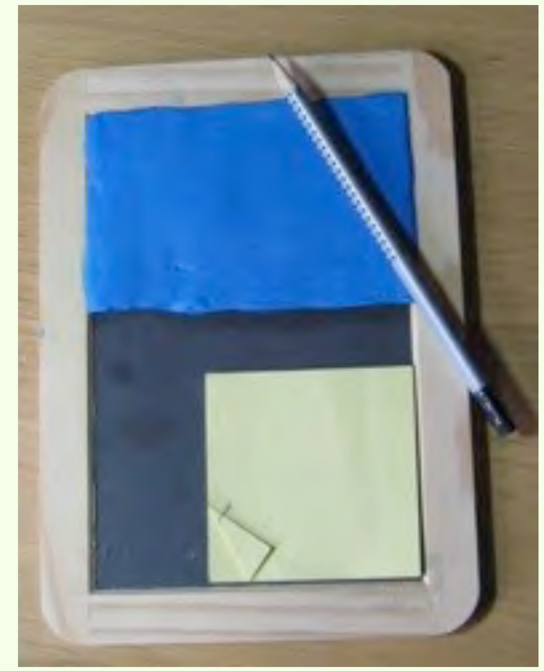


are not always old fogeys ....

* with acknowledgements to Paul Browning

My new "slate"*

- Cheap
- Light,
- convenient
- but ....



- not easy to back up, exchange information etc... (even with my ‘upgrades’)
- To some extent this also applies to conventional field notebooks:

(*From York City Museum, about £3.50)

Tablets

as Personal Learning Environments for students (and fieldworkers in general)

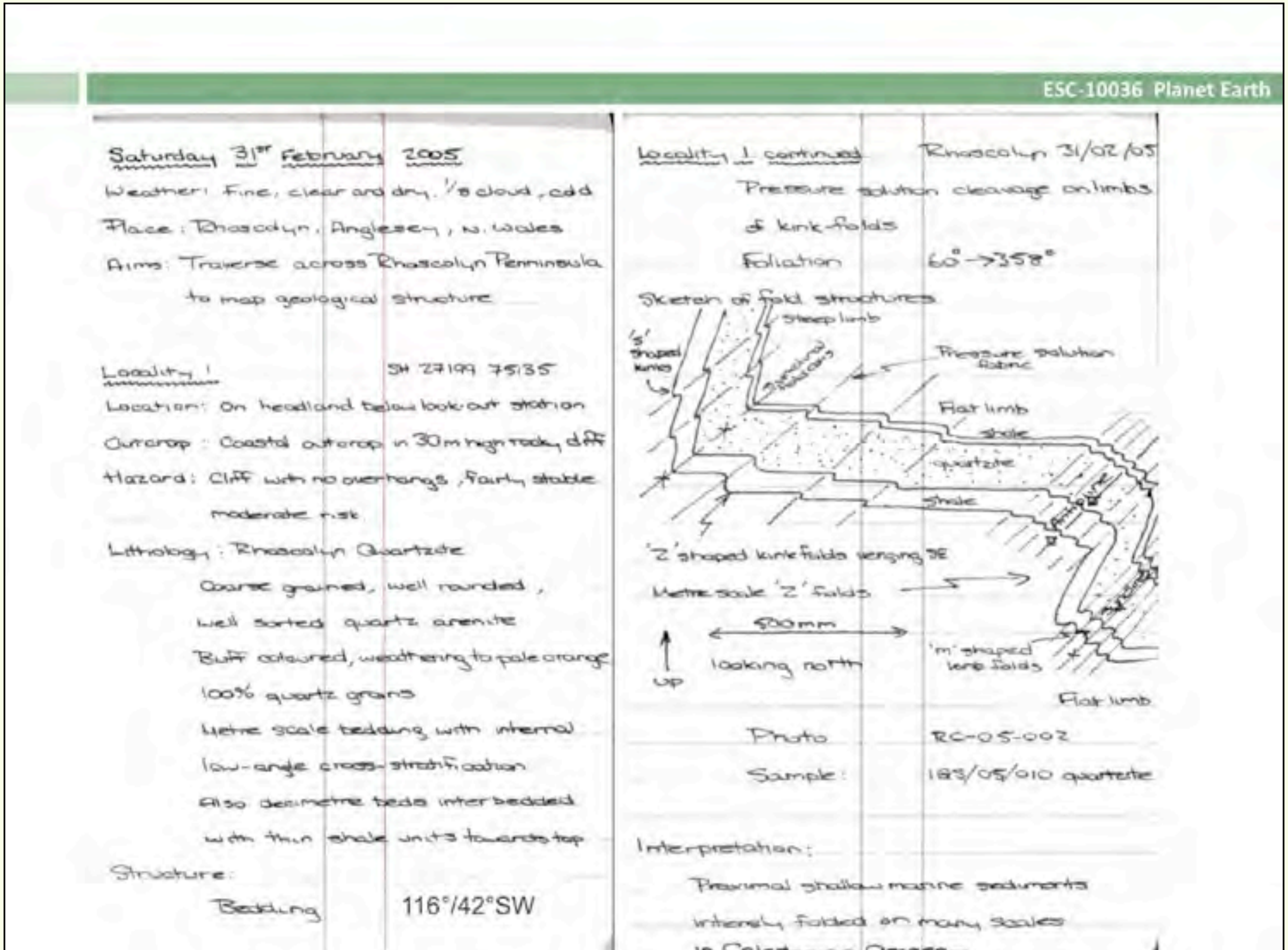
Notebooks in the field

- Can they displace (water-resistant) paper notebooks?
- What basic apps do you need?
- What 'extra' apps can provide
- Can tablets support disabilities - and make things easier in general?
- Can you use tablets anywhere?
- Challenge me, what do you want e-field notebooks to do?

iPad use and usage....

And it does not have to be internet connected

Demonstration:
How to make field notes


ESC-10036 Planet Earth

Saturday 31st February 2005

Weather: Fine, clear and dry. 1/8 cloud, cold

Place: Rhoscolyn, Anglesey, N. Wales

Aims: Traverse across Rhoscolyn Penninsula to map geological structure

Locality 1 SH 27199 75135

Location: On headland below look-out station

Outcrop: Coastal outcrop in 30m high rocky cliff

Hazard: Cliff with no overhangs, fairly stable moderate risk

Lithology: Rhoscolyn Quartzite

Coarse grained, well rounded, well sorted quartz arenite

Buff coloured, weathering to pale orange

100% quartz grains

Metre scale bedding with internal low-angle cross-stratification

Also decimetre beds interbedded with thin shale units towards top

Structure:

Bedding 116°/42°SW

Locality 1 continued Rhoscolyn 31/02/05

Pressure solution cleavage on limbs of kink-folds

Foliation 60°->358°

Sketch of fold structures

Photo RC-05-002

Sample: 183/05/010 quartzite

Interpretation:

Proximal shallow marine sediments intensely folded on many scales in Caledonian Orogeny

Thanks to Ian Stimpson

Demonstration:
textbooks etc

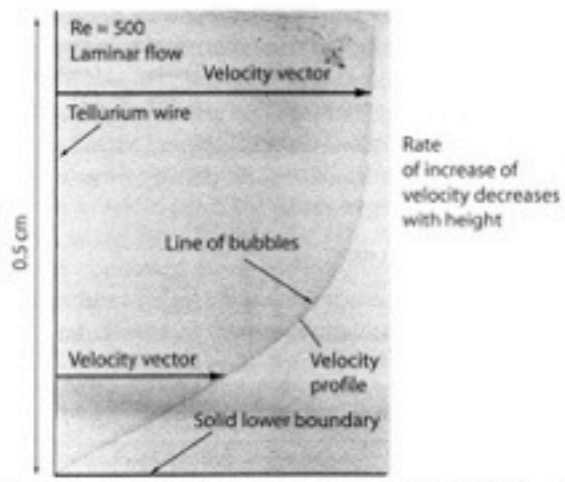


Fig. 4.11 Flow visualization of laminar flow boundary layer by a cloud of H_2 bubbles released by continuous hydrolysis.

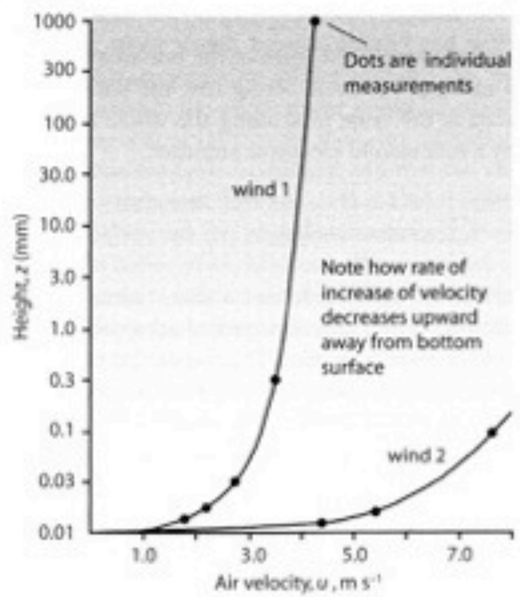


Fig. 4.12 Measurements of wind speed with height above the floor of a wind tunnel to illustrate boundary layers.

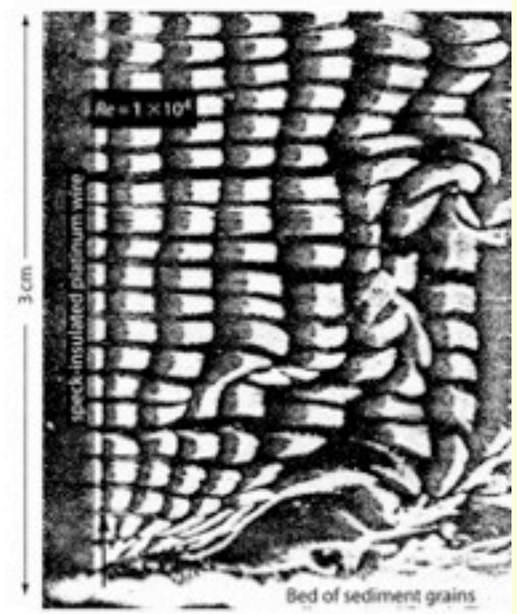


Fig. 4.13 Instantaneous photo of strain markers in a turbulen flow of water to show heterogeneous strain in a boundary la Water flows left to right past a speck-insulated vertical platin wire; pulsed voltage across the wire gives hydrolysis and pro of initially square blocks of hydrogen bubbles. Blocks are rel 0.2 s apart. Compare this with the smoothly varying gradien velocity in the laminar flow case in Fig. 4.11. Note the progr deformation of individual bubble block strain markers from right and the very high strains and strain rates close to the lo flow boundary over a roughened surface of sand grains.

force. It follows that there must be important localization of stresses close to the boundary.

4 The fluid molecules immediately adjacent to the solid boundary surface have not moved at all. It is a characteristic of all moving fluid that there is no "slip," that is, no mean drift, downstream at a solid boundary.

4.3.3 Boundary layer concept

The theory of the boundary layer was first proposed by Prandtl in 1904. The concept simplifies the study of many fluid dynamic problems because any natural or expe tal flow may be considered to comprise two parts: boundary layer itself, in which the velocity gradient enough to produce appreciable viscous and tu

Figure 18.14 Mechanisms of glacial flow. The surface velocity of a glacier is made up from components due to internal deformation of the ice, sliding at the ice bed interface and deformation of subglacial sediments.

Breiðamerkerjökull, south-east Iceland, deformation of the bed was shown to cause 88% of the total surface motion (Boulton and Hindmarsh, 1987).

18.2.7.4 Relative importance of glacier flow mechanisms

Glacier motion is made up from contributions of ice deformation, sliding and sediment deformation (Figure 18.14). The relative importance of each at a particular site depends on the thermal regime, the availability and distribution of meltwater and the composition and morphology of the bed. At Trapridge Glacier, Yukon

TECHNIQUES

MEASURING GLACIER DYNAMICS FROM SPACE

Glaciers are often situated in remote and inaccessible regions making remote sensing an attractive method for studying them. Satellite interferometry (see Chapter 22) uses two images taken at separate times and positions. Subtle differences in the phase of the back scattered signal between the two images allow both the

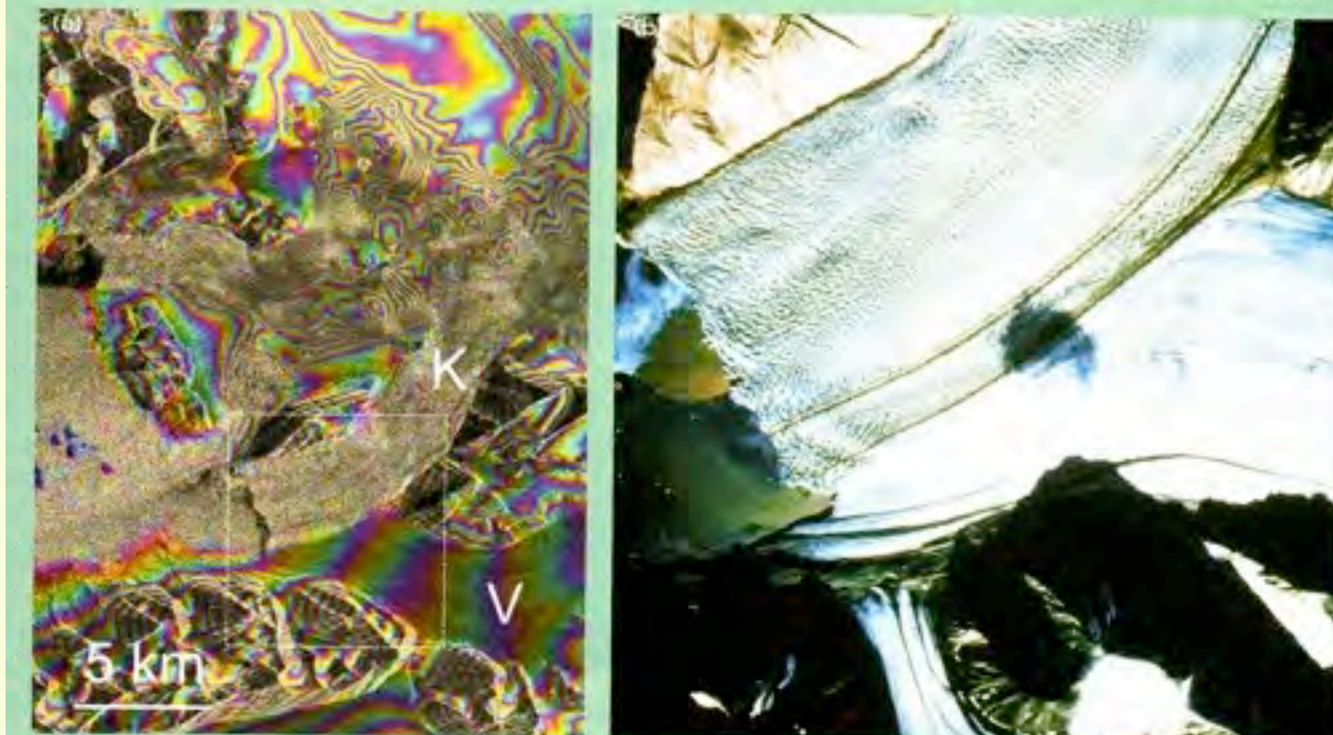


Figure 18.15 (a) Interferogram formed from two satellite images one day apart in December 1995. The Norwegian glaciers shown are Kronebreen (K), which is the fastest-flowing glacier in Svalbard with a flow speed of ~550–1500 m yr⁻¹, and Kongsvegen (V), which is a quiescent phase surge-type glacier (annual velocity ~3 m yr⁻¹). (Source: image courtesy of A. Luckman) Box shows area of enlargement shown in (b) which is an aerial photograph of these glaciers. The intense crevassing on Kronebreen is due to its fast flow. (Source: air photo (taken 1995), S95 1026 © Norwegian Polar Institute)

BOX 18.3 ➤

Plate 13
Ordovician Graptolites

1.* **Callograptus** cf. **salteri** Hall. (×1.) Ashgill Series; near Girvan, Ayrshire. RANGE: Genus, Upper Cambrian–Lower Carboniferous; Species, Ashgill Series.

2.* **Didymograptus hirundo** Salter. (×2.) Arenig Series; Skiddaw, Keswick, Cumberland. RANGE: Genus, Arenig–Llandeilo Series; Species, Arenig Series.

3. **Didymograptus extensus** (Hall). (×2.) Arenig Series; Lleyn, Carnarvonshire. RANGE: Genus, Arenig–Llandeilo Series; Species, Arenig Series.

4. **Glyptograptus teretiusculus** (Hisinger). (×2.) Llandeilo Series; near Pwllheli, Carnarvonshire. RANGE: Genus, Ordovician, Arenig Series–Silurian, Llandovery Series; Species, Llandeilo Series.

5. **Tetragraptus serra** (Brongniart). (×2.) Arenig Series; near Keswick, Cumberland. RANGE: Genus, Arenig–Llanvirn Series; Species, Arenig Series.

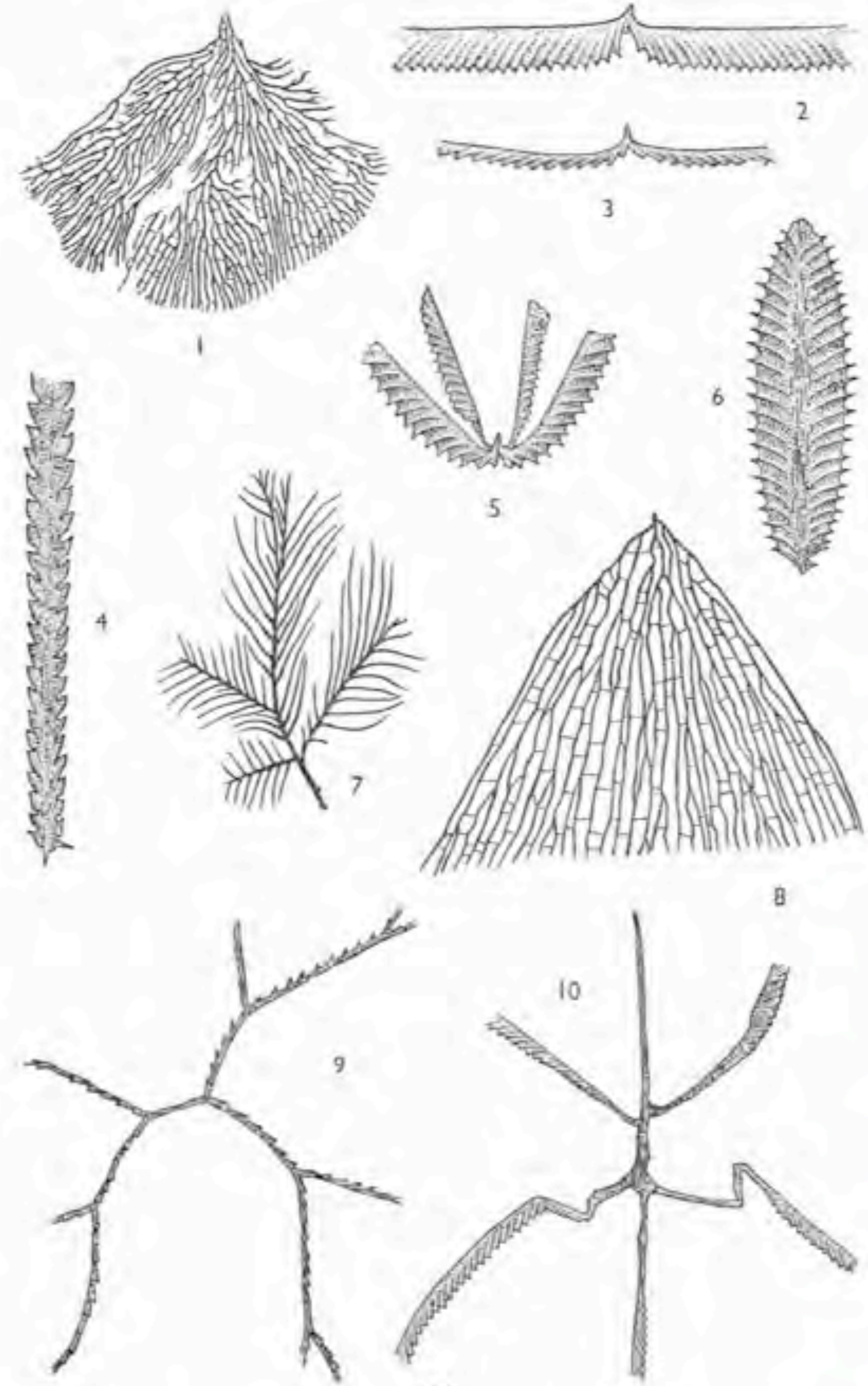
6. **Phyllograptus angustifolius** Hall. (×2.) Arenig Series; near Keswick, Cumberland. RANGE: Arenig Series.

7. **Ptilograptus acutus** (Hopkinson). (× 1½.) Arenig Series; Shelve, Shropshire. RANGE: Genus, Lower Ordovician–Upper Silurian; Species, Arenig Series.

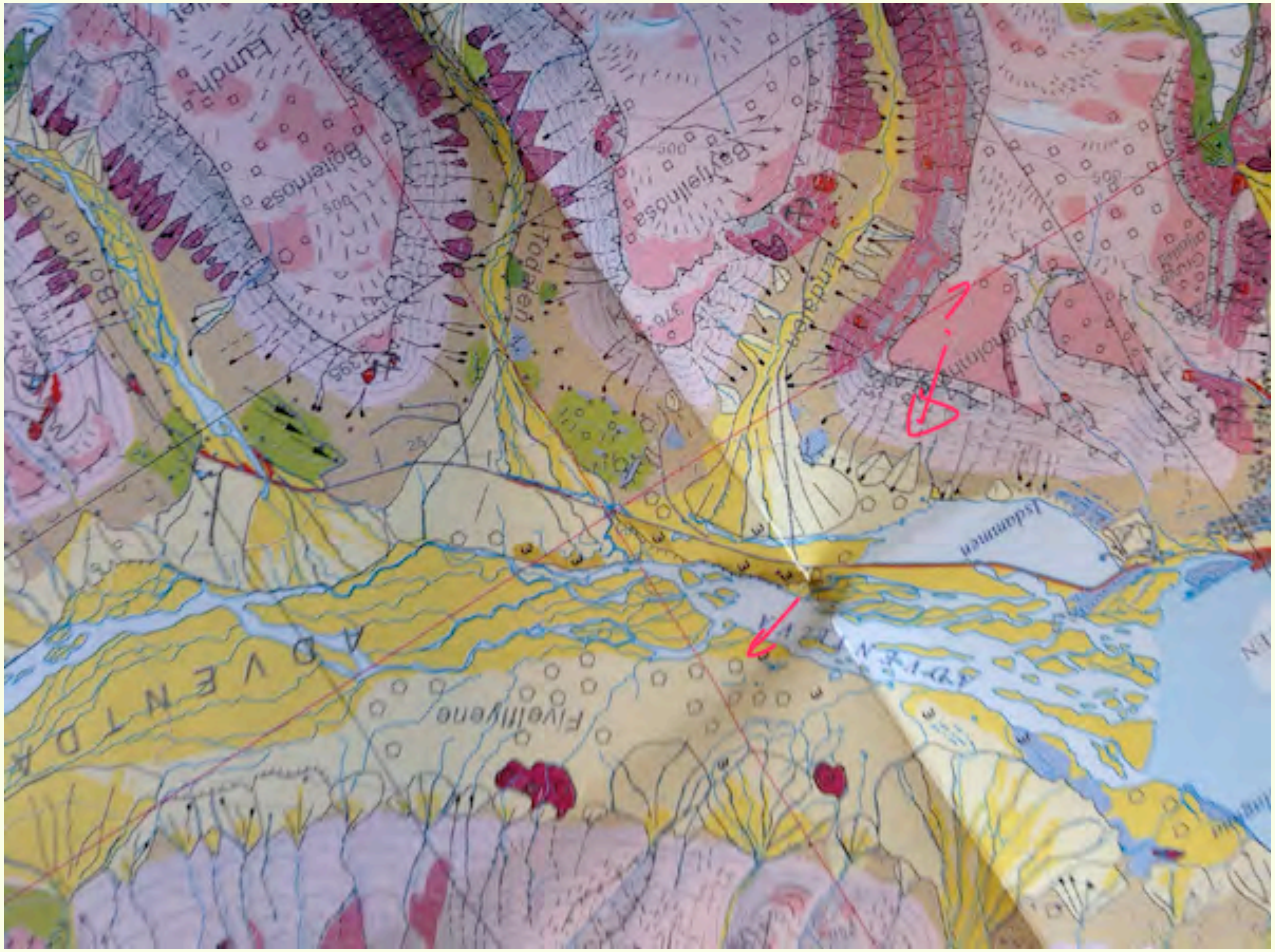
8.* **Dictyonema flabelliforme** (Eichwald). (×1.) Tremadoc Series; near Ffestiniog, Carnarvonshire. RANGE: Genus, Upper Cambrian–Lower Carboniferous; Species, Tremadoc–Arenig Series.

9.* **Clonograptus tenellus** (Linnarsson). (×2.) Tremadoc Series; Cherme's Dingle, near The Wrekin, Shropshire. RANGE: Tremadoc–Arenig Series.

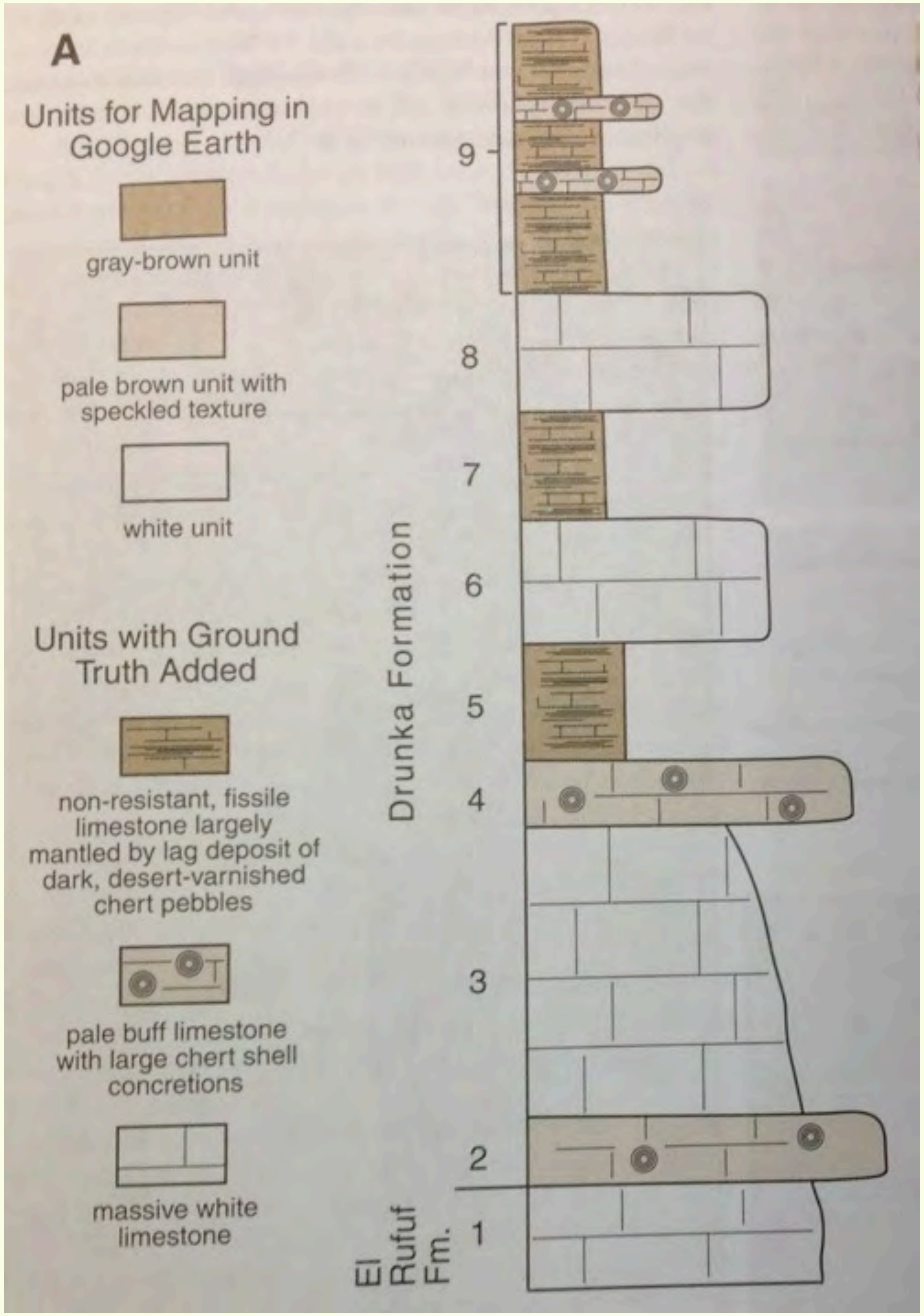
10. **Dichograptus octobrachiatus** (Hall). (×2.) Arenig Series; near Keswick, Cumberland. RANGE: Genus, Arenig–Llanvirn Series; Species, Arenig Series.



Geologically-useful apps



basemap photographed by Camera, stored in Photos exported to Skitch for annotation (then shared or mailed on)



Mapping tools: examples and reminders

This is for mapping from Google Earth.

Add whatever you, or your students, might need

Geologically-useful apps

Camera
used for a field photo
can be exported to a notebook app
(Penultimate, Moleskine, AudioNote, Gusto, Notability)

BTW, anybody know what the fish is?

5 Aug 2012 11:10

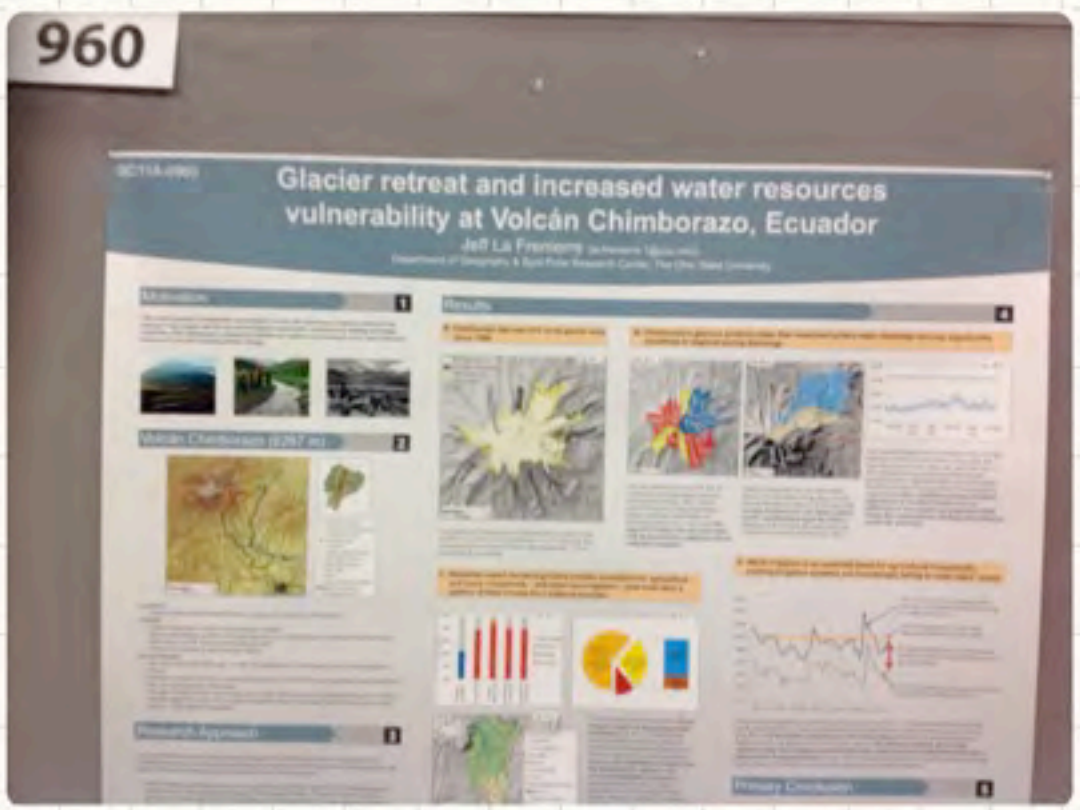
Note 5 Aug 2012

Welcome

NOTABILITY

Close up?

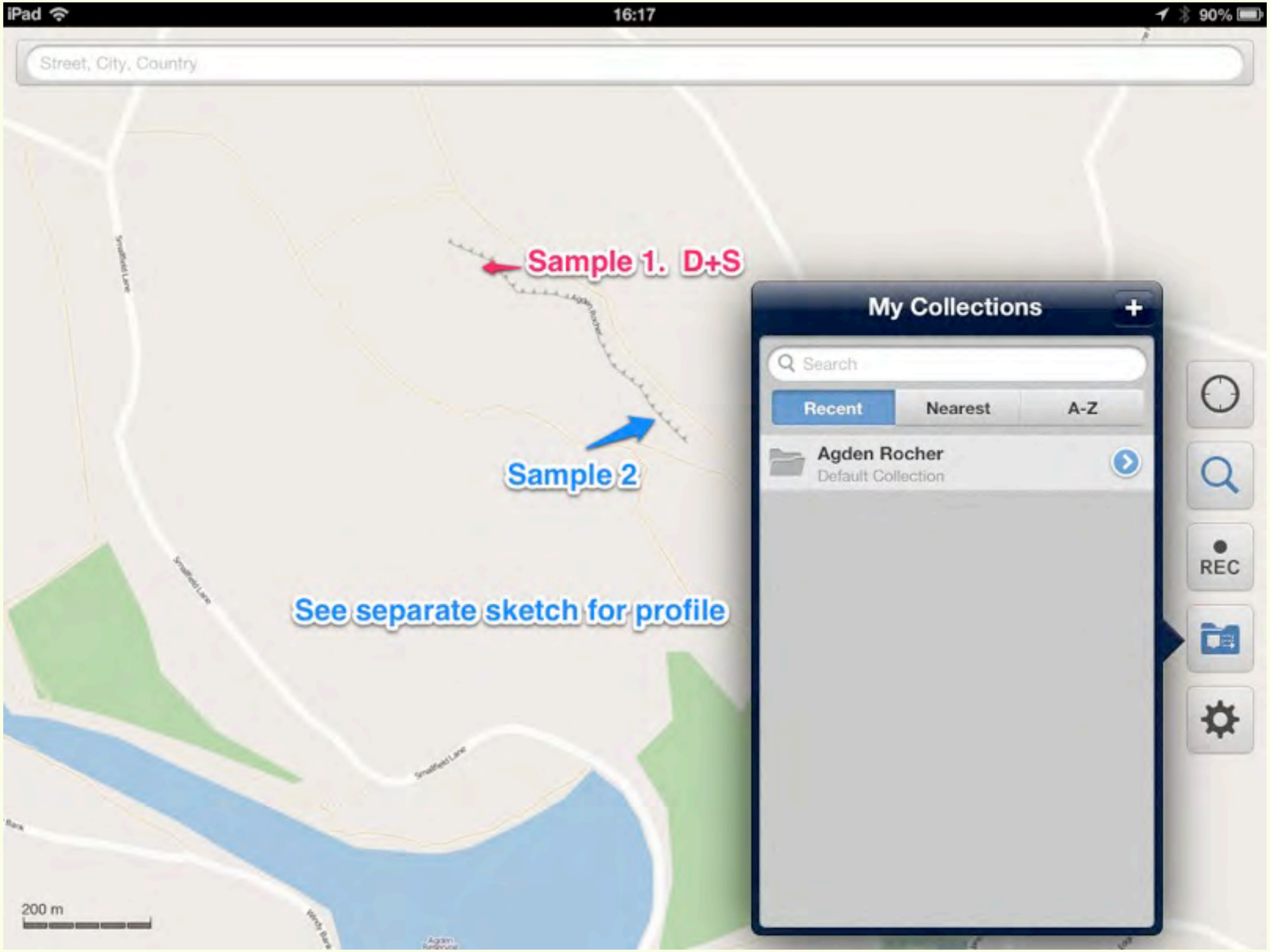
The image seems to be scalabl e vis the usual annota



Feature in Ubehebe Crater

handles and we'll see if it can be ted and saved.

Geologically-useful apps

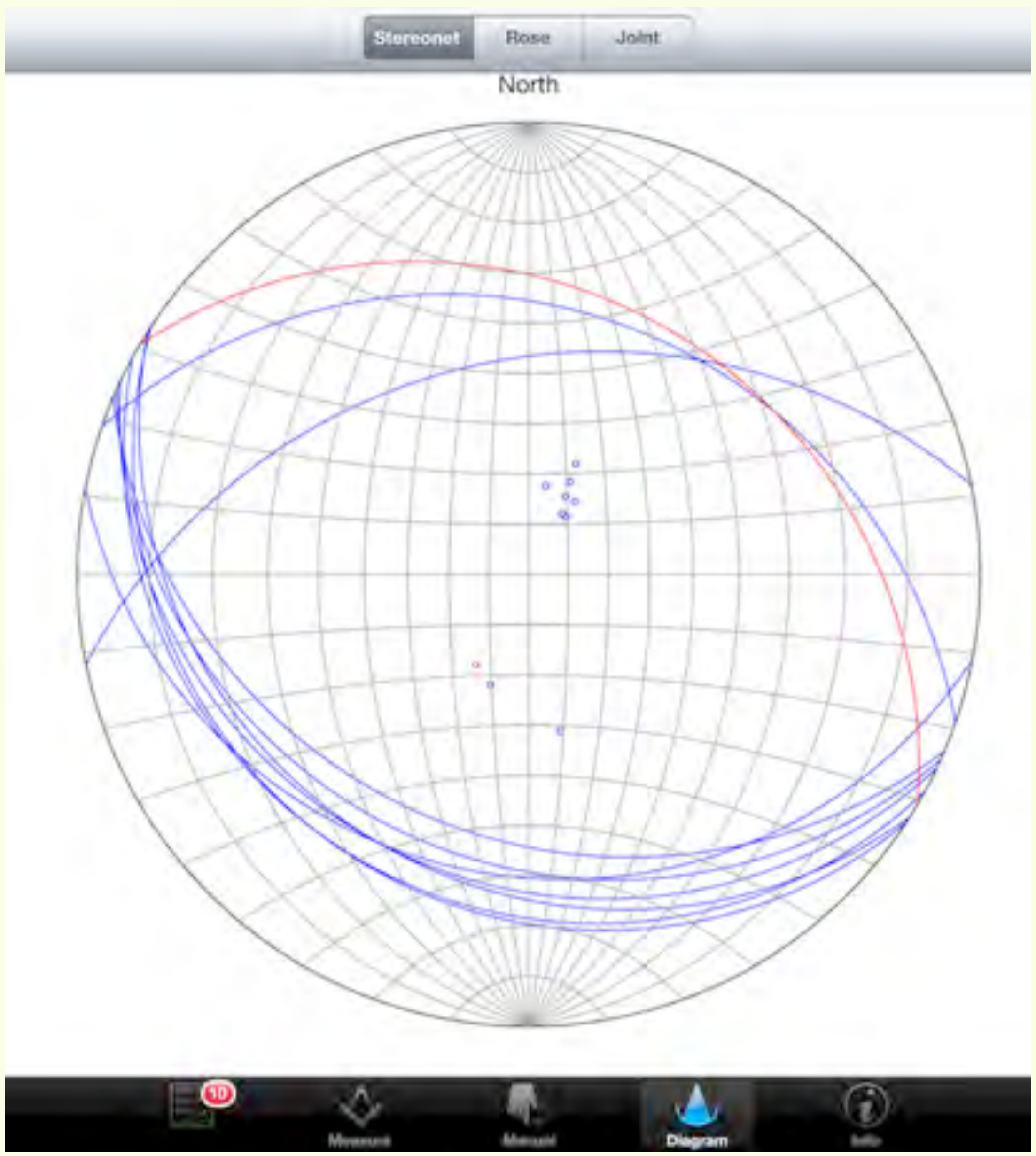


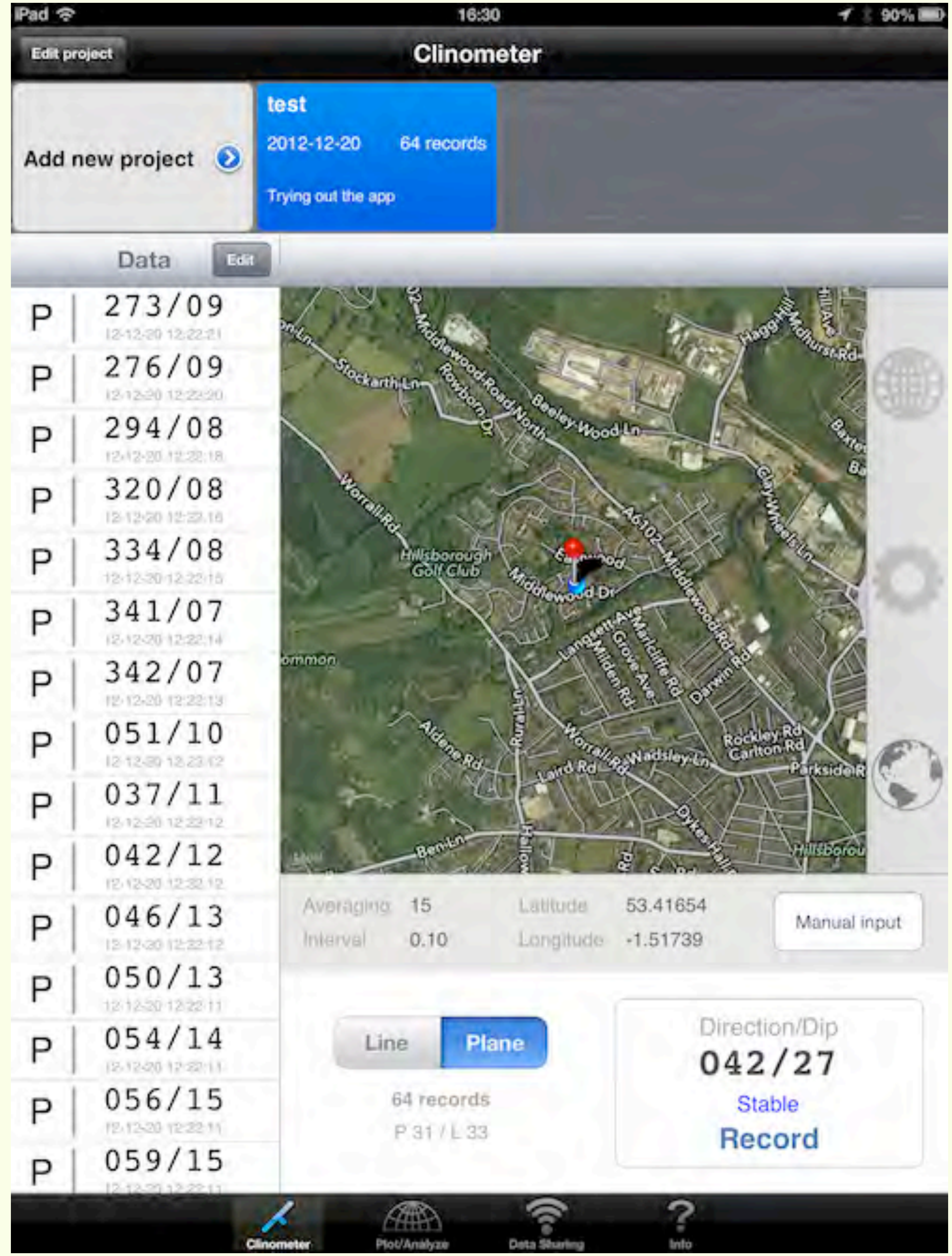
Galileo Map + Skitch

Geologically-useful apps

GeoID

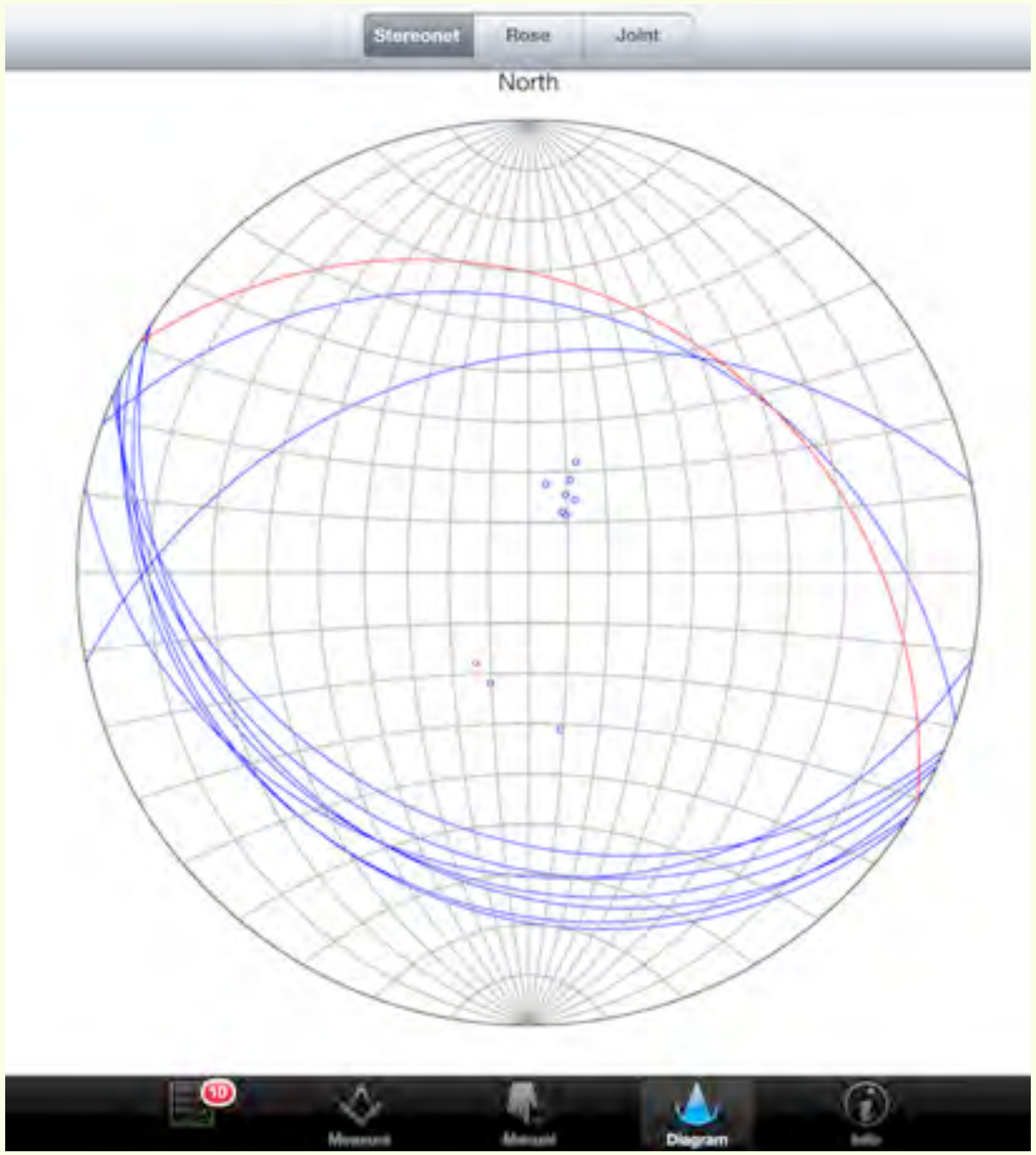
Lambert



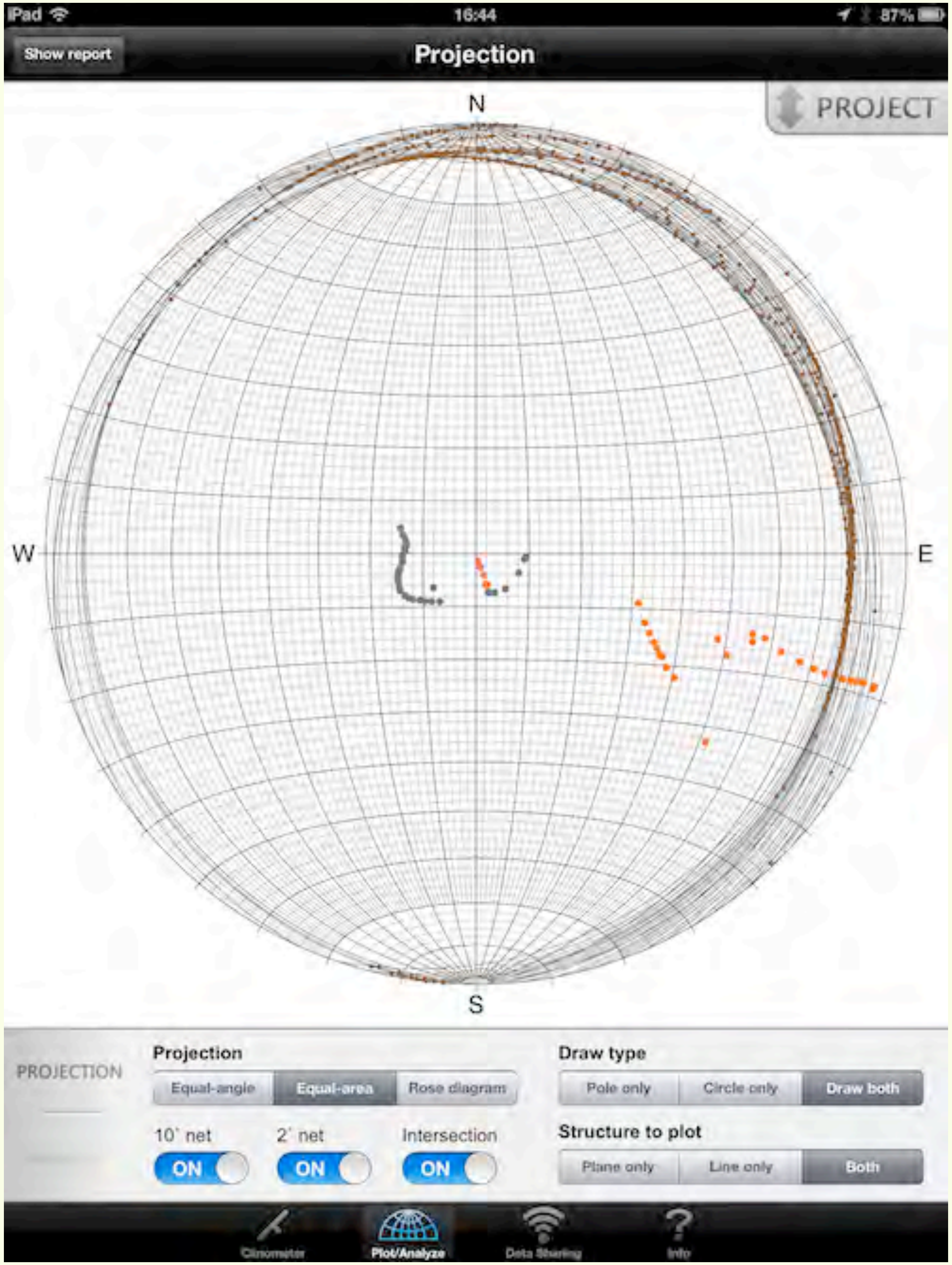


Geologically-useful apps

Lambert



GeoID

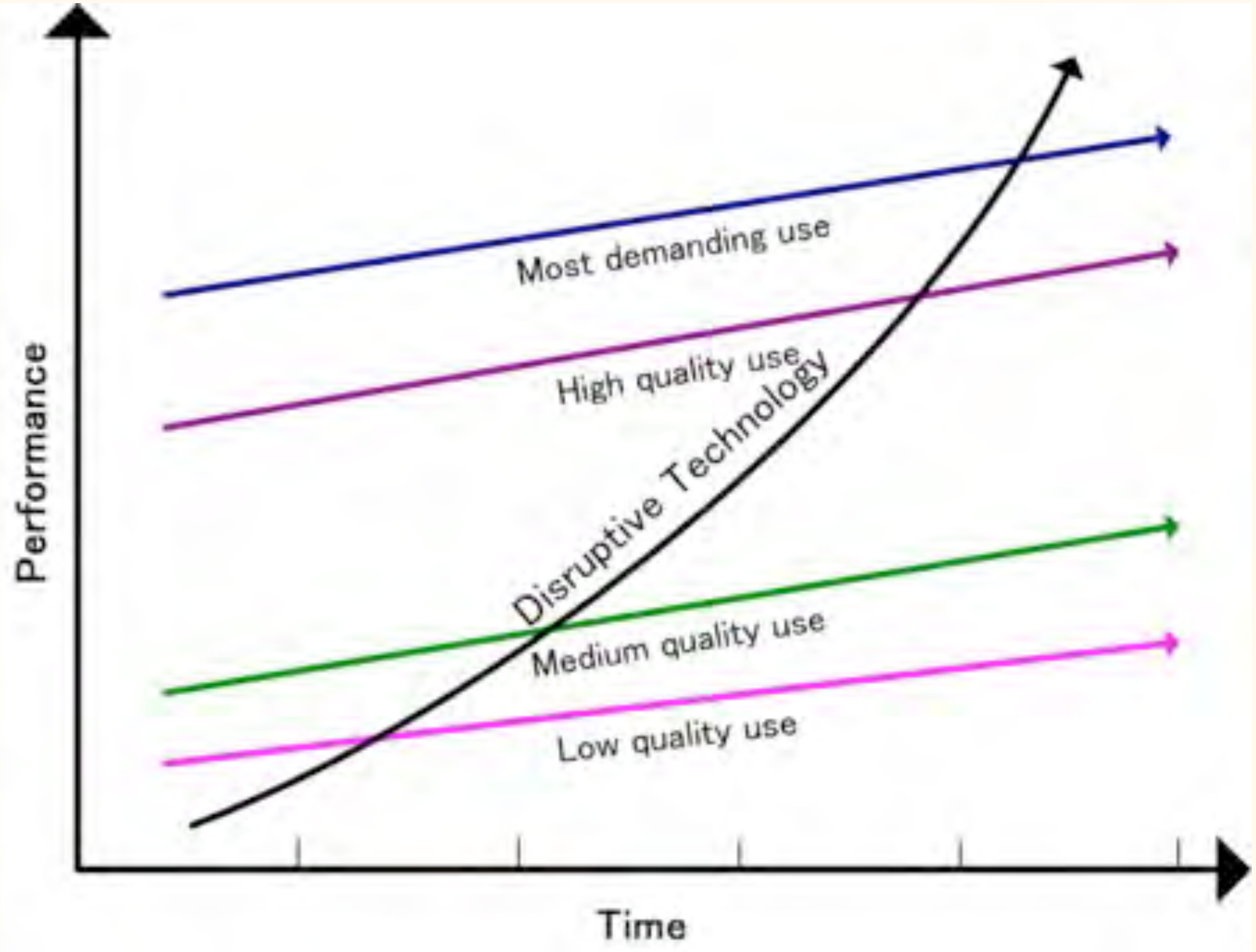


Geologically-useful apps add-ons

Other useful bits

- Add a microphone (‘desk’; lapel/lavalier)
- Add a thermometer (iCelsius)
- Add a GPS (BadElf)
- Camera/video download
- Solar Panel

Disruptive* Devices? Disruptive Technology? Disruptive Innovation?



‘Disrupting Class - How disruptive innovation will change the way the world learns’ Christensen, Horn and Curtis, 2011

Yes, iPads work well in the field

They can be personalised, associated with specific tasks and do the job better than 'traditional' notebooks.