

## Case Study – Environmental Science

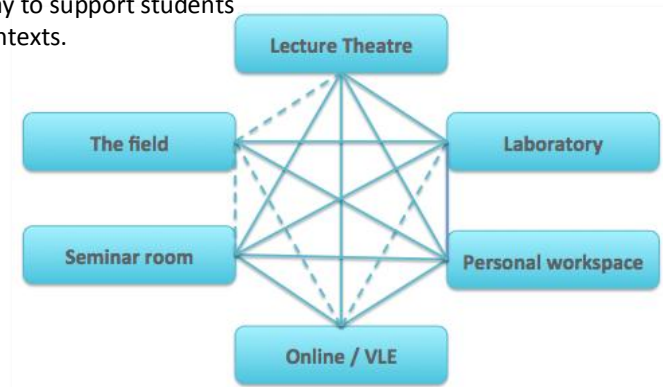
### Learning across contexts – mobile for fieldwork

**CONTACT** Janet Jackson  
Senior Lecturer

#### CONTEXT

“Mobile learning should aim to innovate and to discover what is gained through having portable tools that support observations, interactions, conversations and reflections, within and across various contexts of use... (Kukulka-Hulme, Traxler & Pettit, 2007) Downward *et al.* (2008) observed that environmental scientists’ are uniquely positioned to pilot mobile technologies, because they work across so many different learning contexts (see diagram). The challenge for this course was to find a way to support students learning both *within* and *across* these contexts.

Within each context the student should have access to the learning reference sources and they should also be able to capture their developing ideas in situ, to reflect on and extend into other contexts. Currently the most challenging is working in the field, where traditionally data is recorded in paper notebooks. This can be time intensive, weather dependent and limiting in terms of having previous data or other resources (e.g handouts, maps) to hand. In this pilot we wanted to evaluate whether mobile technology could provide a better solution.



#### INTENDED OUTCOMES

- To enable students to quickly and easily document findings and ideas in the field
- To enable the student to access resources electronically and re-use data in other learning contexts

#### THE PROCESS

We trialled the mobile technology on two field trips, to Wicken Fen National Nature Reserve in December 2011 and to Stonehenge in February 2012. For both trips, the tutor set up a group blog in NILE, and asked the students to record their findings on site using mobile devices, and post them to the blog for discussion.

The Wicken Fen field trip formed part of a second year module on Habitat Ecology and Management. Students were asked to observe and record details of the wetland habitat, which is one of the most important in Europe, and share their observations with the group. They also planned to use GPS to tag the exact locations of their images and notes, to share with the wider community via Flickr, an image sharing site.



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The Stonehenge field trip formed part of a Sustainable Development module, focusing on land use, visitor experiences and planning. Students were asked to consider the proposed changes to the landscape, plans for the new visitor centre and to form a case from the perspective of one of a range of stakeholders with interests in how the site is used.

For both trips, students were asked to capture images, audio and video narratives using their own mobile devices where they had them, or a borrowed iPod Touch from the Learning Technology team if they didn't. Students also given limited access to wifi using mifi units borrowed from the Learning Technology team, which can connect up to five devices via a 3G signal to upload to their NILE blog via the Northampton App. Students were also given an [information sheet](#), with some ideas on how best to use the mobile device.

A feedback survey revealed that students enjoyed using the devices, particularly for photography and video, which helped them to record a lot of data very easily. 80% of the students said that the app was 'easy' or 'very easy' to use.

Connectivity was a real challenge, particularly for the Wicken Fen trip where there was very little mobile signal. This was challenging partly because of student expectations – when handed an internet-enabled device, they expected to be able to connect and start accessing information. The purpose of the trip though was for them to record their own data, and be creators rather than consumers, so expectations needed to be clearly set!

Connectivity was also an issue for the GPS tagging of resources, and for some apps, like Dragon Dictation, which relied on data connection or stored information in the cloud.

The weather on the Wicken Fen trip was also a challenge, particularly for those using touch screen devices!

**“I found it useful having it all in one thing e.g. notebook, camera”**

**“Dictation was useful, but it's hard to type notes while wearing gloves!”**

#### KEY POINTS

- Framing the device is crucial – explain why you want students to use it and what value it can add for their learning.
- Allow students to experiment – some even recorded their stakeholder roleplays on site!
- Inclusion is important. Make sure you have loan devices for those that don't have their own.

#### REFERENCES

Downward, S., et al. “Podcasts and Locations”. In Salmon, G. and Edirisingha, P. (eds) (2008). *Podcasting for Learning in Universities*. Maidenhead: Open University Press, pp 57-69.

Kukulska-Hulme, A., Traxler, J., and Pettit, J., (2007). “Designed and user-generated activity in the mobile age”. *Journal of Learning Design*, 2(1), pp. 52–65.

