

Locating learning: Making connections between virtual and physical spaces with mobile touch-screen devices

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Abstract

This paper is concerned with the potential of mobile touch-screen devices and emerging socio-technological practices to support pedagogies of place that provide a means for young people to reflect critically on the social construction of place and to take actions that speak of and to their own locatedness. Drawing on phenomenological conceptions of place that distinguish between abstract geometrical space and place as perceived, practiced and storied, as well as de Certeau's (1984) spatial theorisation of power that distinguishes between spatial operations of normalisation (place) and alterity (space), we examine two school-based examples of learning activities that bring together the virtual and physical in experiences and representations of place. The first example is an Australian local history unit, where lower secondary school students participated in a series of field trips, planned and conducted under the guidance of an Indigenous Elder. They used Smartphones and iPads to capture and create personalised audio-visual records of their knowledge of place that were then used to create geo-location games. In the second example, upper primary school students worked with local authorities and environmental educators to select sites for two environmental monitoring posts, which were then installed and provided a locus for the students' school-based environmental science learning, as well as a vehicle for community engagement. Drawing on interview and photographic data, this paper provides a reading of the way mobile technologies were deployed for student knowledge production, engagement with place, reconstruction of place and engagement with community. The paper features two narratives of physical-digital entanglement as a means of presenting the complexity, interrelatedness and ongoing enactment of digital and non-digital elements of place.

Keywords

Place-based pedagogies, mobile technologies, school field trips, community engagement, student knowledge production, space and place, de Certeau

Purpose

This paper raises questions about conventional notions of place by exploring the entanglement of materials, modes, senses, stories and times that are enacted within school-community learning partnerships, where students use mobile technologies to re-story place. The paper provides accounts using both visual material (photographs) and narrative to challenge the *physical versus digital* thinking that often characterises popular discourse and the dichotomous logics that underpin conventional policy and curriculum frameworks.

Thinking with theory

Our thinking about the physical-digital entanglements presented as part of this paper is based upon two spatialising moves. First grounded in a phenomenological conception of space, drawing on authors such as Massey (2005). Second, drawing on de Certeau's (1994) spatial conceptions of power, where spatial figurations operate dialogically as normalising narratives interact with alterity. These conceptual tools allow us to think place as something that is perceived, experienced and storied, as distinct from some abstract geometrical space, but they also allow us to consider the

interacting strata of stories, with some place-making stories seeking to control and to corral uncertainties, and to keep alterity out, and other place-making stories traversing and creating ruptures in the authorised and the taken-for-granted.

We also draw upon intersecting literatures on communication and learning (e.g., Pachler et al, 2010; Lessig, 2012; Latour, 2005; Jurgenson, 2012; Davis& Jurgenson, 2014; Bigum, 2012; Greuenewald, 2003; Ainscow et al., 2012), noting:

- The increasing convergence and ubiquity of channels;
- The rise of emergence, remix and contingency as figures for understanding digital knowledge work;
- The increasing ubiquity of multi-modal communication and multi-modal learning;
- The growing recognition of the importance of promoting lifelong learning and lifelong citizenship;
- The benefits of connecting schools with community and promoting student ownership of learning and of knowledge.

Two school-community learning projects

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| <i>Techno-historical trails of Peek Wurrong sites created by local students</i> | <i>Fluker Post Schools Project</i> |
| <p>Project</p> <ul style="list-style-type: none"> • Funded by Telematics Course Development Fund, Victoria, Australia • Partners – Will King (Brauer College history teacher); Rob Lowe Snr (Peek Wurrong Elder); Terri Redpath and Julianne Lynch, Deakin University | <p>Project</p> <ul style="list-style-type: none"> • Funded by Telematics Course Development Fund; Deakin University Faculty of Arts & Education • Partners – Martin Fluker, Naomi Auger (Victoria University); Nadine Frankel (Warrnambool East Primary School); Julianne Lynch, Deakin University • http://www.flukerpost.com |
| <p>Context</p> <ul style="list-style-type: none"> • Australian local history unit – year 7, regional Victoria, Australia • Students participated in field trips ‘on country’ with Indigenous Elder • Use smartphones and iPads to capture and create personalised audio-visual records of knowledge of place • Student-generated digital artifacts used to create geo-location games • Positioned secondary school students as producers of digital history | <p>Context</p> <ul style="list-style-type: none"> • Primary science specialism – grade 5/6, regional Victoria, Australia • Students worked with local authorities and environmental educators to select sites for two environmental monitoring posts • Post locations and digital photo collections provided a locus for the students’ school-based environmental science learning as well as a vehicle for community engagement. |

Data sources

- Field notes and video footage; photography
- Student focus group interviews
- Teacher interviews

- Interviews with Indigenous Elder
- Student-created artefacts

Entanglements

The paper presents the following two entanglements together with photographic and interview data:

1. Digital-physical entanglement of place – a techno-historical trail of local indigenous history

This communicative learning entanglement sees students engaging with the haptic affordances of Smartphones and iPads to audio-record and photograph the narrative cartography of school field trips. Guided by an Elder of the Gunditjmarra nation, the students were bussed to sites he selected as historically significant in the region. They experience stories of lifestyle, survival, injustice, ceremony. They see and photograph middens, meeting places, massacre sites. They are encouraged to digitally capture their knowledge, and upon their return to their classroom they have the resources to create individual place-based geolocation maps. These result in a myriad of different narratives and interpretations of the same places.

Students, their teacher, the Indigenous guide and the university researcher are bussed to an ocean location. They stop to see a small wooden cross on the side of the road which reads “George Wattmore - killed by blacks” and listen to the Elder’s interpretation of its significance. Slightly further along the bus stops at a related context, a massacre site, where many Indigenous people were pushed from the high cliff and into the sea. Significantly the students notice there is no memorial here to photograph. The story they hear visibly affects the students:

‘My family camps here for holidays. We go fishing here... I had no idea this happened....now I know the real story of this place. It isn’t like reading it in a book’.

But what is “real”? This is a fluid space. Over several years the researcher has accompanied various groups on excursions to this place and has experienced the changes involved in the narrative and its interpretation. Weather affects the sound and mood of the experiences, photos are taken from different angles. Sometimes it is bleak and windy and the stories are associated with increased sadness, whereas at other times the calm and cloudless landscape invites less angst. Different student groups respond with more or less engagement and this dynamic is reflected in the type and number of photographs taken and the questions asked about additional details. Sometimes the guide says he feels the ‘old people’s stories’ strongly and at these times much detail usually informing the narrative is not told. Not then, not there.

For the researcher the interrupted narrative – changeable, multiple – offers extra insight into the dynamic socio-material construction of space, as do other markers along the oral history based trail. At the racecourse, a place in the region where the racing and tourism industry celebrates a holiday carnival each year, the students leave the bus and record the scene through a new lens. Historically this was a place where women and children gathering food fled towards the safety of caves nearby, hunted during what the guide refers to as the ‘Sunday shoot.’ For these students the word ‘race’ and the place now known as the town racecourse takes on a different meaning. Back in class the students’ geolocation mapping

superimposes this story on the popular landmark. Again the story is fluid and the depth in the detail experienced by different school groups varies. In this way each field trip creates a newly practised space, sometimes connected more to the dynamics of the specific school group, and to variations in empathy, listening focus and perhaps the more or less salient aspects of the story the guide chooses to highlight on one particular day rather than another.

A paper map is given to students by their teacher to plot landmarks at a nearby Indigenous community 'mission', the site of another field trip. A corralled space is marked and new signage explains how the ancient remains of Indigenous people have been returned for identification, having been taken from their land long ago and kept overseas. Given permission from the guide to enter, the students do not hesitate. They file in. Yet the guide, the teacher and the researcher hesitate and independently choose not to follow. They later talk about this, and together question their strong reaction and shared avoidance, and realise that each felt physically and emotionally unprepared to be in that space on that day. Was it that as adults they knew more of the background history, the controversy, the as yet unfinished business of identifying and returning these people to their homes? Although the photos show the surrounding landscape as beautiful and peaceful, again the individual narratives reflect different entanglements in the physical and digital connections involved in interpretations and remakings of place.

2. Digital-physical entanglement of place – Fluker Post

The post is a piece of wood, manufactured to last for ten years, installed in the ground adjacent a site of environmental interest. The post is a hub connecting a dynamic network, bringing together – through tenuous and ever-changing connections – a host of ever-changing entities.

The site of interest – an estuary, always in flux – sometimes open, sometimes closed, momentarily captured by a photograph taken by an unseen passer-by and uploaded to a digital online collection. The photo collection grows and documents change – or the moments either side of change. Sometimes the tide is in, or out, or somewhere in between. Sometimes large rocks can be seen. Sometimes they are covered by the sands. Sometimes birds feeding. Sometimes people and their dogs. Occasionally a council back-hoe digging a channel to open the river mouth – local government, property owners, businesses, insurance companies, all have an interest in the phantom river mouth.

The post connects people and their organisations:

- The university researcher from another town who made it and put it in the ground; a second researcher from another university who funded its production;*
- the school, teacher and students who are now custodians of the post and the online collection. All noted on the marketing-approved signage on the post.*
- The people and organisations who were consulted in the selection of the site – the local council, the catchment management authority, university scientists.*
- The public who visit the site, perhaps with their dogs, perhaps to watch birds, perhaps under doctor's orders, and who contribute photos to this citizen science project. Sometimes these contributors post online comments about the weather that day, or the picnic they had, or a dead fish they found, or their ambivalence about rabbits. Some send in historical photos, taken long before the post's installation – a moment from another point in time.*

The post is also connected to other posts, in other locations, cared for by other people. Grasslands, woodlands, revegetation projects, creeks and rivers, national parks, marine sanctuaries, a water treatment plant.

In connection with these other entities, the post produces media items, awards, money. To some, the post has a celebrity status – children want their photos taken, posing with the post or with Dr Fluker and his Fluker Post SUV.

The formal curriculum sends lines into this ever-changing network of people and things – earth science, water science, living things, food chains, extreme weather events, erosion, “thinking scientifically” - what constitutes a good research question, what data might be needed, what does the data capture and what escapes? Sometimes the photos are printed and laminated for inspection and comparison by the students. The photos provide a visual record, but what do they exclude? Conversations about ‘audio traps’ and ‘near infra red cameras’ ensue.

The students look for ‘evidence of life’ – on the sand with magnifying glasses, collection jars, ipads. The net of lines going in / going out extend indefinitely if followed, making a nonsense of distinctions between local and global, connecting the digital and the physical. The digital and the non-digital touch each other.

Speaking back to conventional notions of ‘place’

When we follow the materiality of mobile touch-screen device usage – as deployed within place-based school-community learning projects, we find that the digital is *material*. The virtual – whether a story, a memory, an imagining, or a digital object or event – is entangled with the physical and produces material affect; and this entanglement works places and works us. Virtual-physical dichotomies do not hold up when tested against practice. Places are constantly made and remade, as new spaces, stories, and relations emerge. They are multimodal, multilayered, multiple.

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