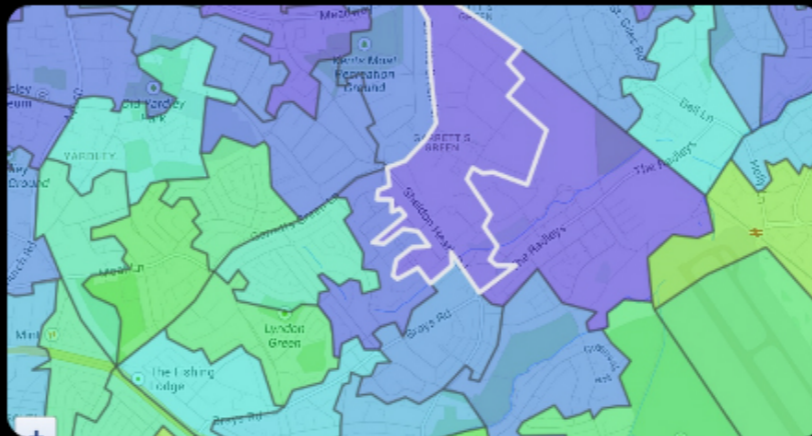


Teachers' narrative ecologies of professional development with digital technologies



Keith Turvey
Education Research Centre
University of Brighton
k.turvey@brighton.ac.uk

What, how and why?

Narrative ecology approach developed out of researching teachers' professional identities with digital technologies.

- What, conceptually is narrative ecology
- Methodological concerns: epistemological and ontological
- Pedagogical and technological concerns
- What does narrative ecology look like in practice and how can it 'talk back' to techno-centric initiatives?



Conceptually, what is narrative ecology?

Redwood Rings in Muir Woods

By Kristen Ortwerth-Jewell, Flickr <https://www.flickr.com/photos/kro-media/>

Analysing

to identify

Single folding microscope and reflecting goniometer, similar to the instruments Darwin used on the *Beagle*.



Specimen catalogue pages. Darwin wrote the results of his analysis of a rock on the page opposite the samples' description.

kit helped Darwin find out more about the rocks he collected as he travelled the world.

Darwin used some simple tools to help him collect and analyse rocks where he found them. He kept a second set of more precise instruments in his cabin on-board the *Beagle* for detailed analysis.

We know about Darwin's experiments with particular rocks because he carefully recorded the results.

to reveal a fresh surface for closer inspection or to discover fossils hidden inside. He used a hand lens to examine these rocks and fossils in more detail.

In his cabin on board the *Beagle*, Darwin could look closer still using his microscope. He used a blowpipe to find out which chemicals made up the minerals in his rocks.

A blowpipe focuses an intense flame onto a tiny fragment of rock. At a very high temperature grains and crystals in the rock either melt and mix, change size or change colour, all of these changes gave Darwin clues about what the rocks were made of.

To find out more about the individual minerals that made up his rocks, Darwin used goniometers to measure the angles between crystal faces. Darwin could look the angles up in a book to find out which minerals the rocks were made of.

Darwin's mobile tools/technologies?



The Sedgwick Museum of Earth Sciences, Cambridge. 'In the end then, the narrative and the paradigmatic come to live side by side' (Bruner, 1986, p.43).

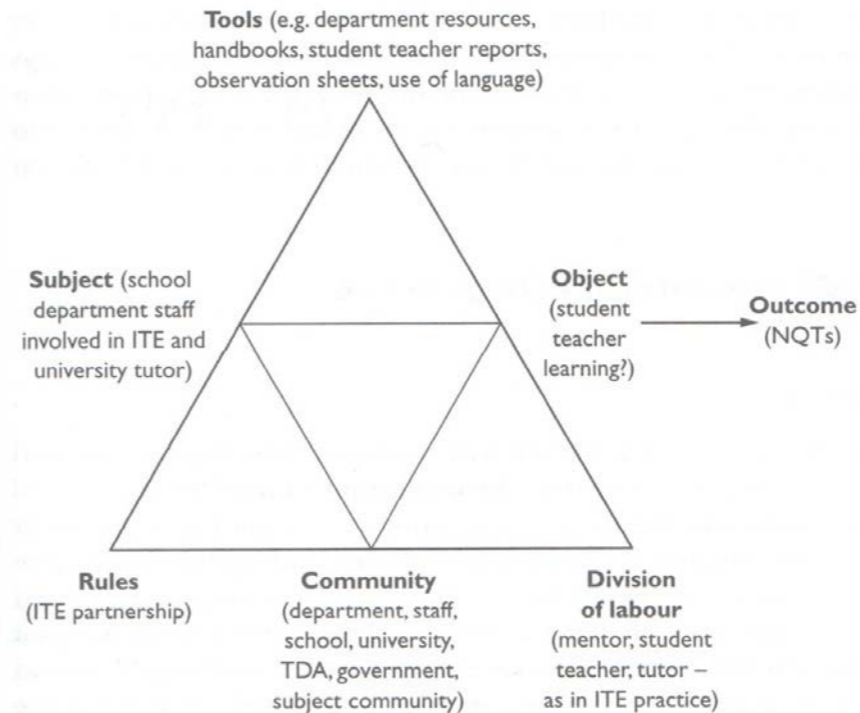
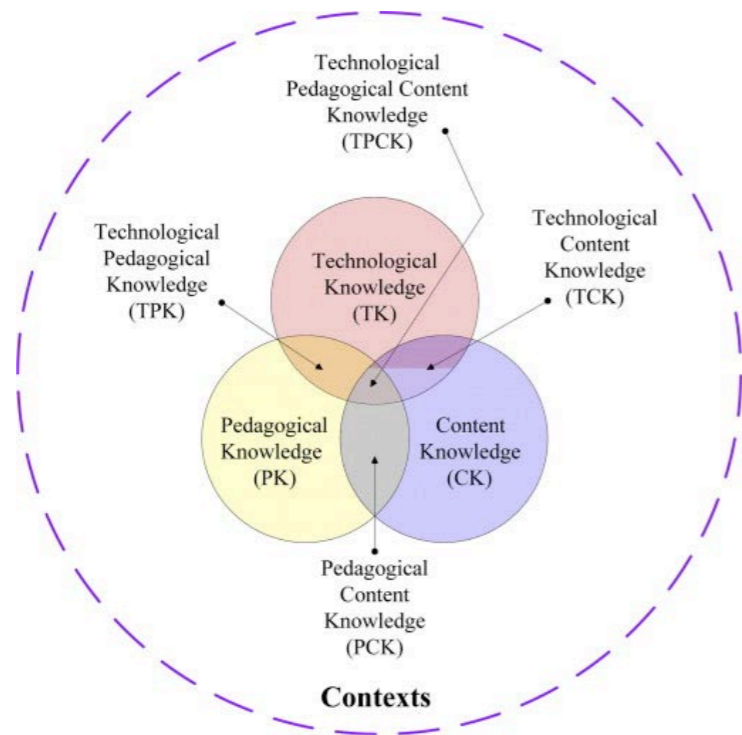
From objects of natural sciences to subjects of social sciences

Bruner's modes of thought (1990):

- Paradigmatic cognition – involving the categorisation of events, things e.g. schematic knowledge that establishes connections between categories and concepts (door, window, room)
- Narrative cognition – ‘deals with the vicissitudes of human intentions’ (Bruner, 1986, p.16). And starts from the premise that human action is ‘the outcome of interaction between a person’s previous learning and experiences’ (Goodson, 2010, p.8).

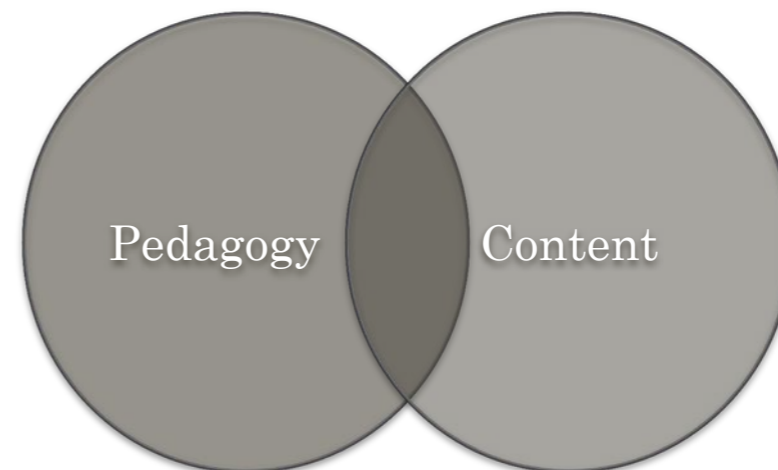
Tools of the social sciences

TPACK – Mishra and Koehler



Activity theory - An activity system for school-based ITE (Ellis, Edwards & Smagorinsky, 2010, p.33)

“The most important species in an ecosystem are called keystone species, which exert some kind of controlling influence over the system.”
(Zhao & Frank, 2003)



PCK – Shulman (1987)

Re-presentation

How can we research others' professional identities if we acknowledge they are in a constant state of becoming?

The tree imposes the verb “to be,” but the fabric of the rhizome is the conjunction, “and....and....and...” This conjunction carries enough force to shake and uproot the verb “to be.” Where are you going? Where are you coming from? What are you heading for? These are totally useless questions.

(Deleuze and Guattari, 1988, p. 26)

Intentionality



Have you heard the one about the ornithologist and meteorologist who went for a walk in the woods? (Bonnie Nardi, 1986)

Presumptions and dangers - all insiders?

- It is presumptuous and dangerous precisely because we are never analyzing and interpreting the unmediated or primordial; our listening presence as a researcher is as much an act of moulding as *being* moulded in the moment, however much we vacillate on our capacity as researchers to 'bracket out' our own preconceptions (Marton, 1997; Schostak, 2006).
- It seems too often research seeks prematurely to identify patterns of human activity as proxies for some deeper truth or understanding, and, in the process, potentially ignores or is not sensitised to the existence of plural perspectives and contextual equivocality (Sanger, 1996,).

Capturing the inimitable

Connecting the intra-psychological and inter-psychological

Wertsch (1985) highlights Vygotsky's perspective on language as a bridge between the inter-psychological and intra-psychological worlds of the individual. Accordingly, the inter-psychological and intra-psychological are inseparable and only through understanding the 'ties as well as the genetic transitions' between these can one 'hope to build an adequate account of higher mental functioning' (Wertsch, 1985: 94).

Technology



What does it take for a teacher to become at one with pedagogy and technology like an accomplished musician is at one with their music and their instrument?

Geoff Simkins: Jazz Saxophonist

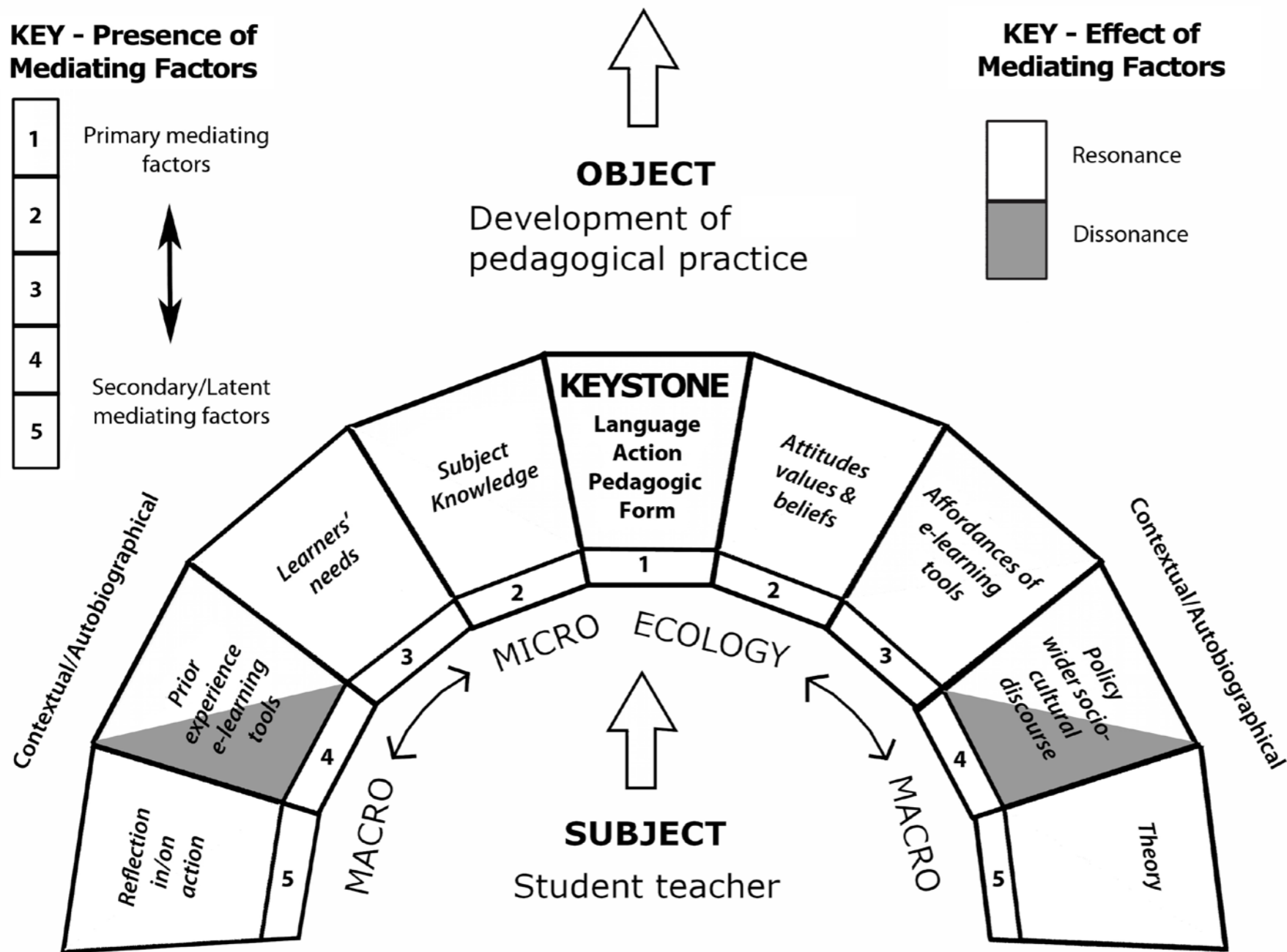
Didactic Analysis

Loveless and Williams state (2013, p.158); 'being ready, willing and able to teach, calls for a reading of the world in which content, context and tools can be orchestrated with skill and purpose.' The European tradition (Klafki, 1958 and 2000,np) of didactic analysis requires the teacher not just to understand the what (content) and the how (pedagogy) but also the why 'with its attendant past and the anticipated future'. The pedagogical appropriation of new technologies is a complex process, predicated on a number of contextual and autobiographical factors.

Klafki (1958) pedagogy as 'a selection made in a particular human, historical situation and with specific groups of children in mind.'

Also Selwyn and Facer's call for more 'state-of-the-actual' analysis of TEL (2013)

Narrative ecology framework for Analysis



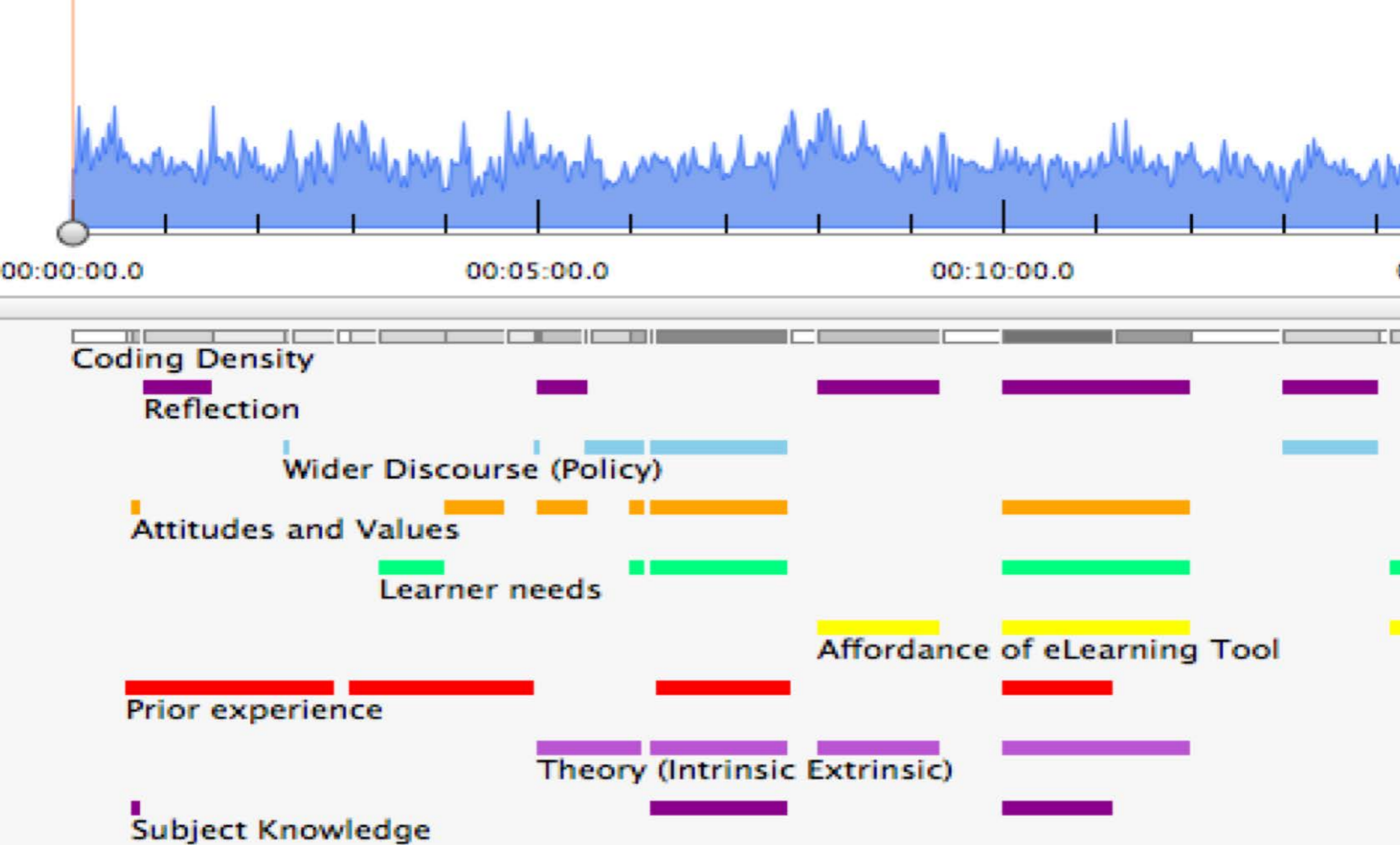
iPads in Education; from technological to pedagogical tool

- What are the perceived enablers and constraints on the pedagogical appropriation of mobile technologies in the case study contexts?
- How are pedagogical practices adapted through the use of mobile technologies?
- How do practitioners perceive the significance of any adaptations to their pedagogical practice?
- What is the perceived usefulness of the narrative ecology framework for developing pedagogical practice with new technologies (iPads)?

2 Phases

Phase	Type	Quantity
1	Group Interview	8 Participants
	Presentations	8
	Researcher field notes	1
2	In-depth narrative interviews	4
	Narrative Portrayals	4

1. Mobile learning symposium (University)
2. In context narrative interviews (School/University)



Coding a narrative interview

Nvivo

Talking back through narrative portrayal

Narrative case: Sam

Sam is a Science teacher in a large secondary school in England (11-16 year olds). At the time of this research she was in her seventh year as a qualified teacher and as well as her role in the science department she had a role as a 'digital leader', providing support to other colleagues with the integration of digital technologies into their pedagogical practice. The school has recently adopted a 1:1 iPad policy providing all students with iPads through a scheme in which parents can purchase an iPad for their child at various subsidised levels depending on financial circumstances. There are also options provided for those families just above the Free School Meal entitlement threshold who are unable to afford to buy a device. The school looked into various strategies such as Bring Your Own Device (BYOD) before adopting their approach and Sam was involved in this process from early on.

Story the data

Using the data extracts handout can/how would you locate them in a narrative ecology?

Discussion

Questions?

Thank you for listening!

Handout:

Turvey, K. (2014) iPads in education? A participatory design for professional learning with mobile technologies. In: Passey, D. and Tatnall, A. (Eds) *Key competencies in ICT and Informatics: Implications and issues for educational professionals and management*. IFIP Advances in Information and Communication Technology, 444. Springer Verlag, Berlin, 106-123

Forthcoming publications, see ResearchGate profile at:
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