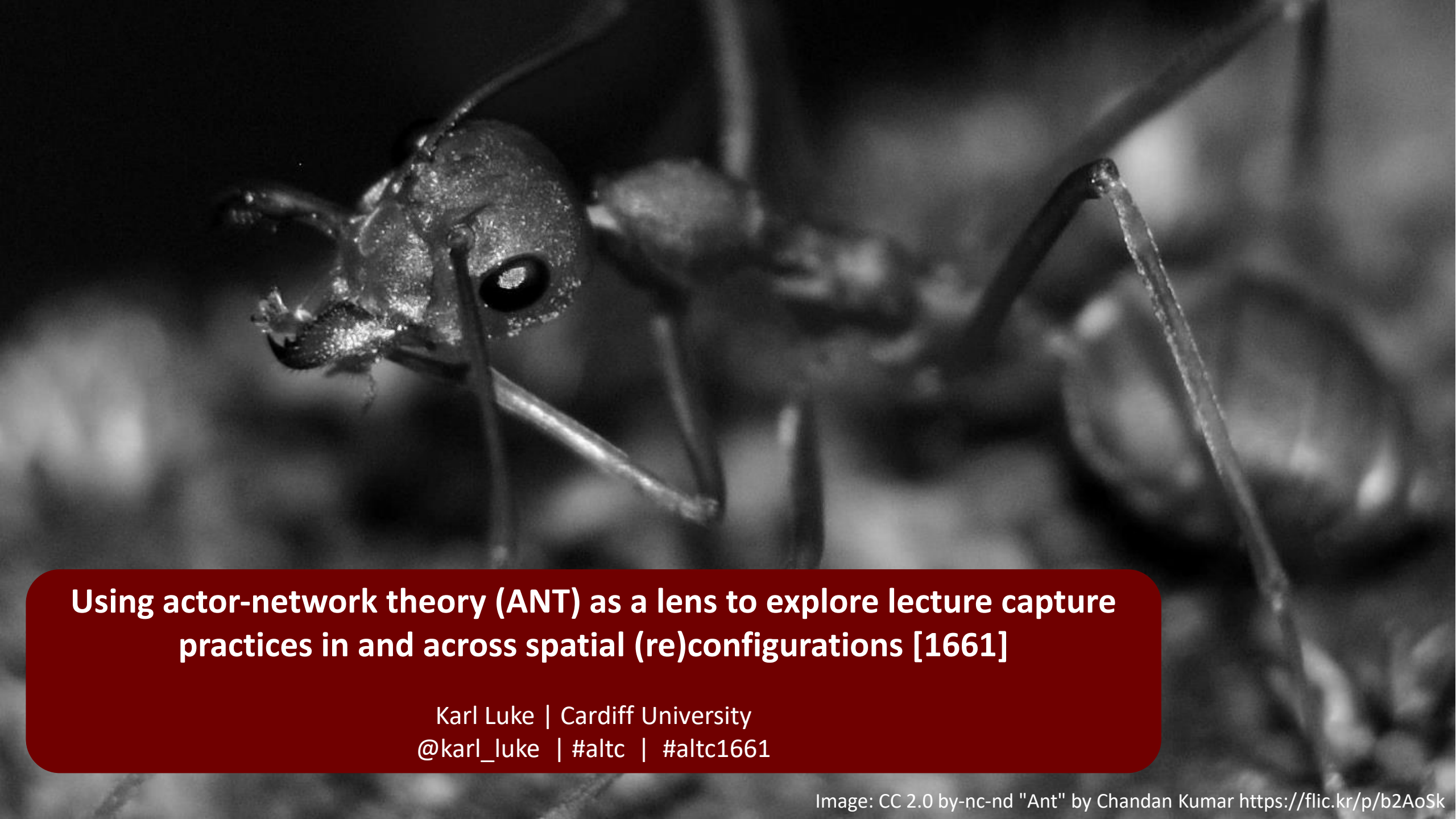
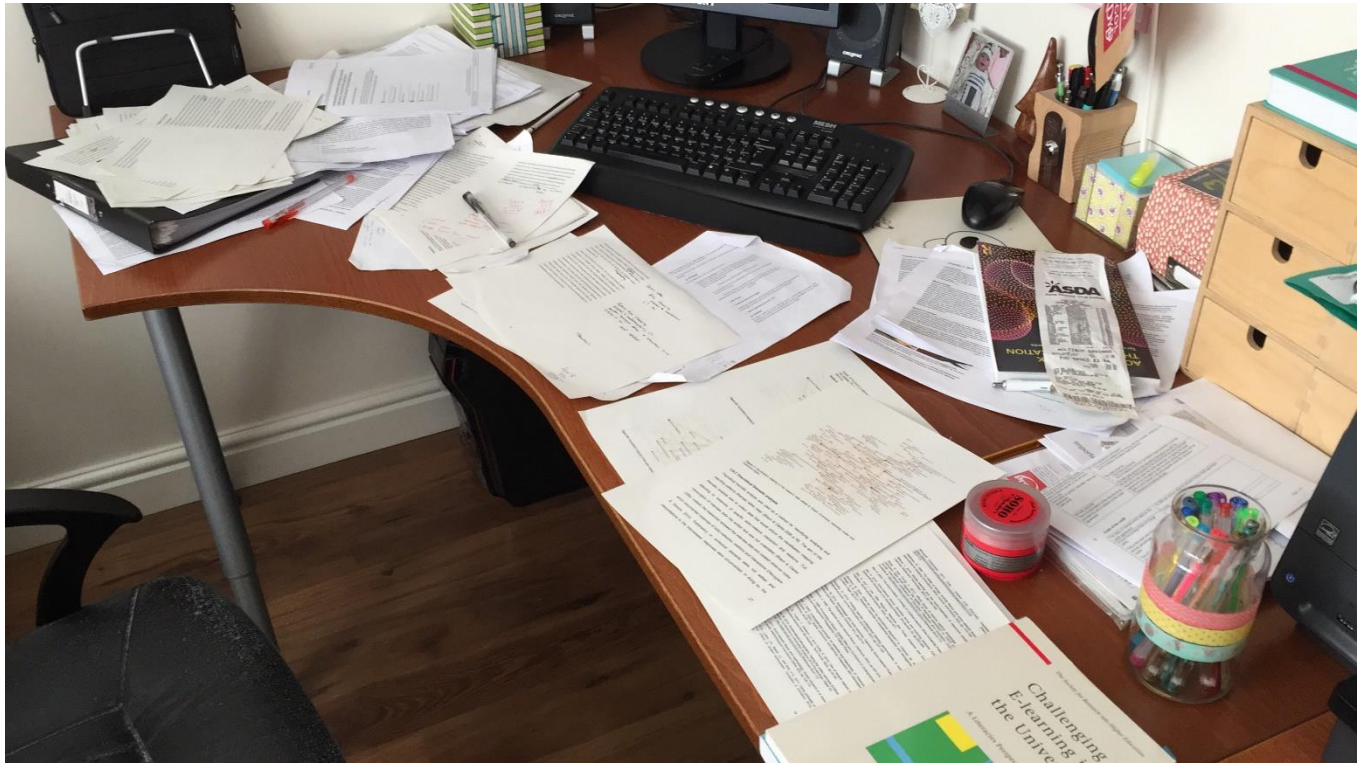


Using actor-network theory (ANT) as a lens to explore lecture capture practices in and across spatial (re)configurations [1661]

Karl Luke | Cardiff University
@karl_luke | #altc | #altc1661

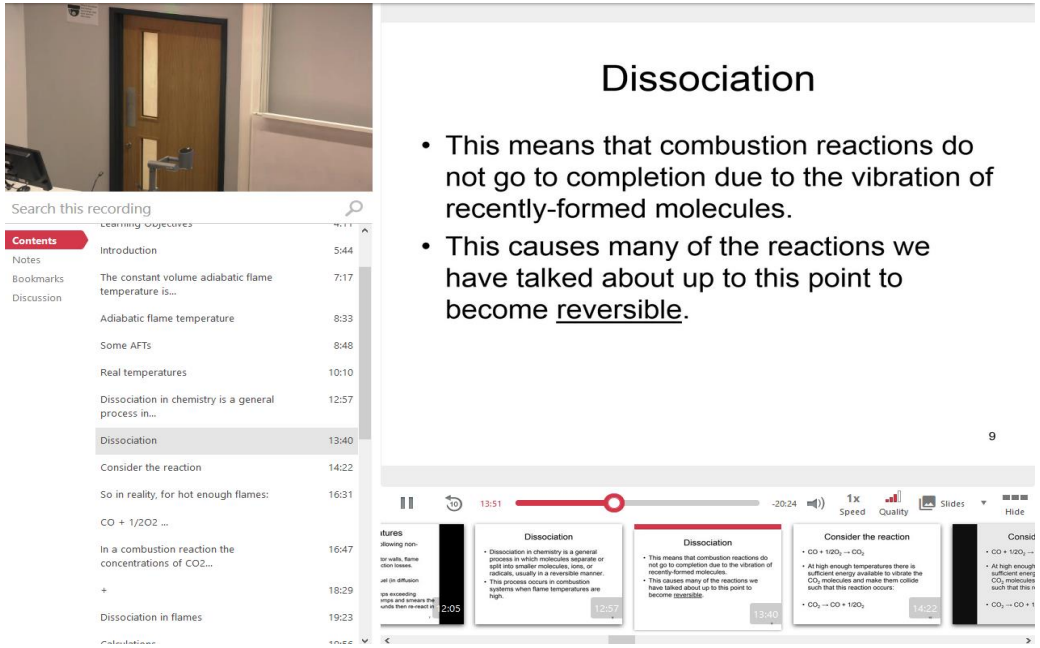
Outline

- Theoretical positioning
- Methodology
- Findings
- Discussion



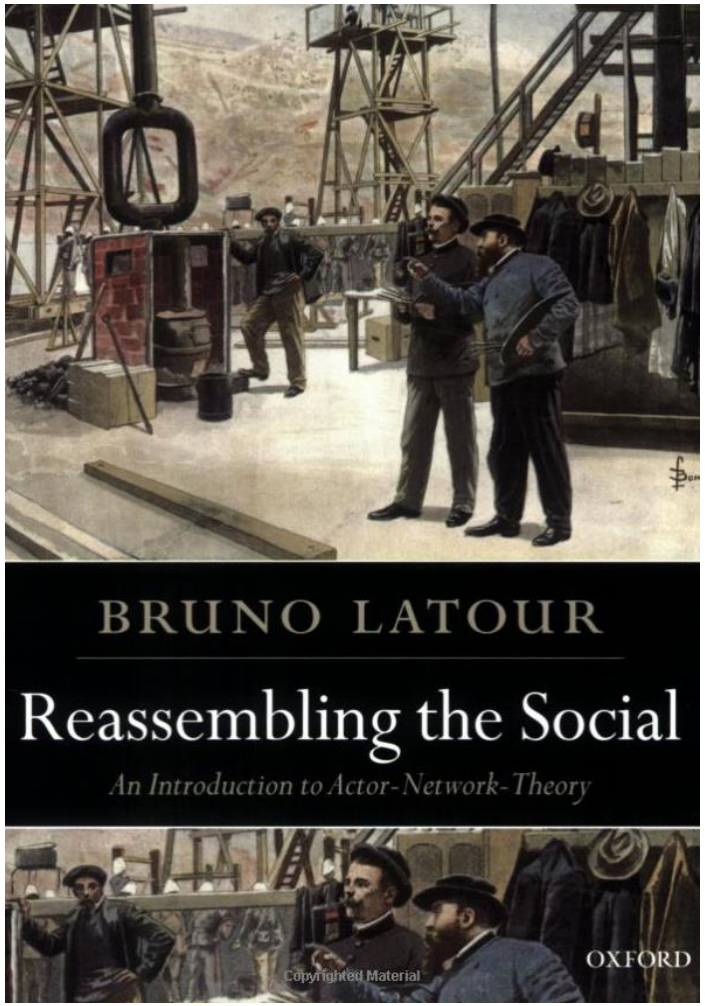
(Re)Considering Spatiality

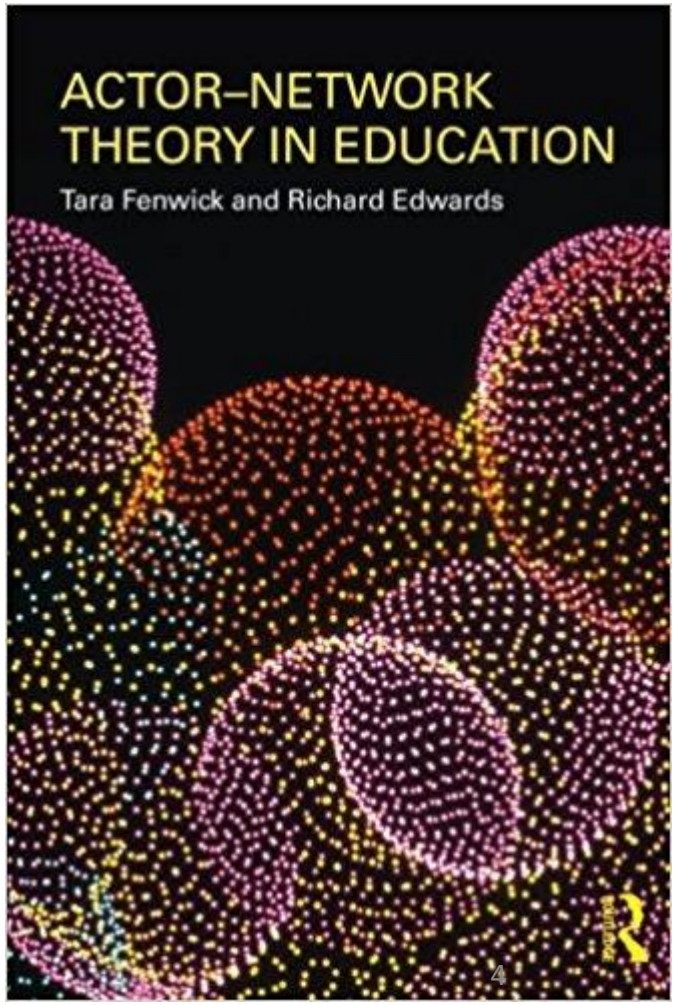
- Practices emulate from different spatiotemporal configurations, with different goals and ontologies attached (Mol 2002)
  - Practices can expand and flow across spaces, distances and/or time (Fenwick & Edwards 2010, McGregor 2004, Murdoch 1998)
- The materiality of the lecture capture artefact:
  - enrols knowledge and discourses from distant space-times (Burnett 2011)
  - engages in spatiotemporal compression
  - constructs contingent and active spaces



ANT 101

- Sociomaterial approaches
- Empirically grounded cases
- *Heterogeneous actors* - objects of all kinds - and seeks to de-centre the human and the social in educational issues



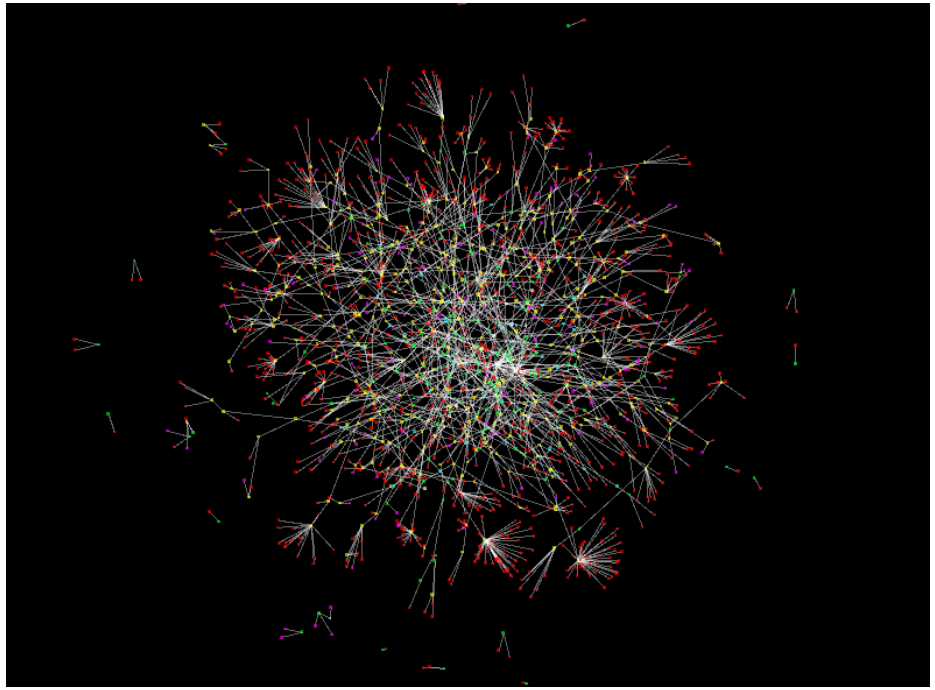


Heterogeneity/Symmetry

- ***Actors*** / ***Actants***
  - "entities that do things" (Latour 1992 p.241)
- ***Generalised symmetry*** (Callon 1986) between humans and non-humans
  - e.g. tools, programmes, documents, objects, machinery and technologies
  - all entities to be given **equal** analytical consideration; the human is not assumed to have a privileged position

Relationality/Associations

- Actors exist within a sociomaterial ***assemblage (or network)*** of materials
  - linked to perform a particular function (Callon 1986, Latour 2005)
- ***Relationalism*** between actors form instances of (momentary) stability

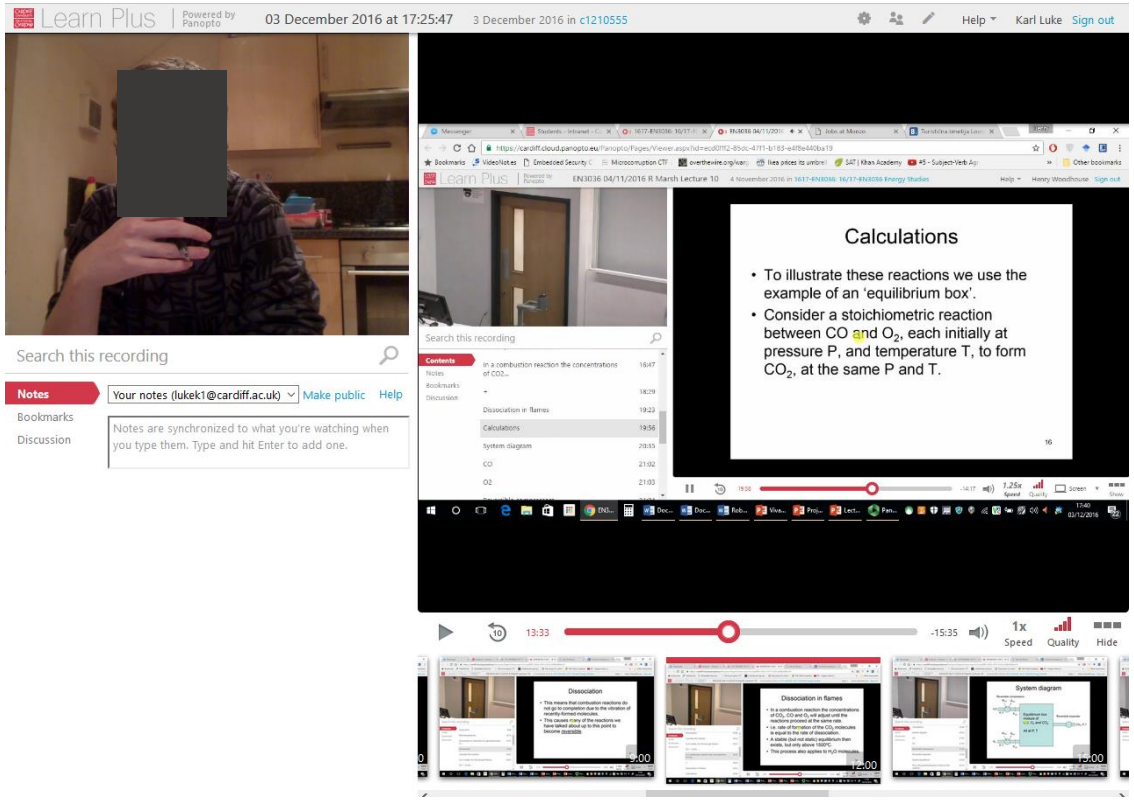


ANT and Spatiality

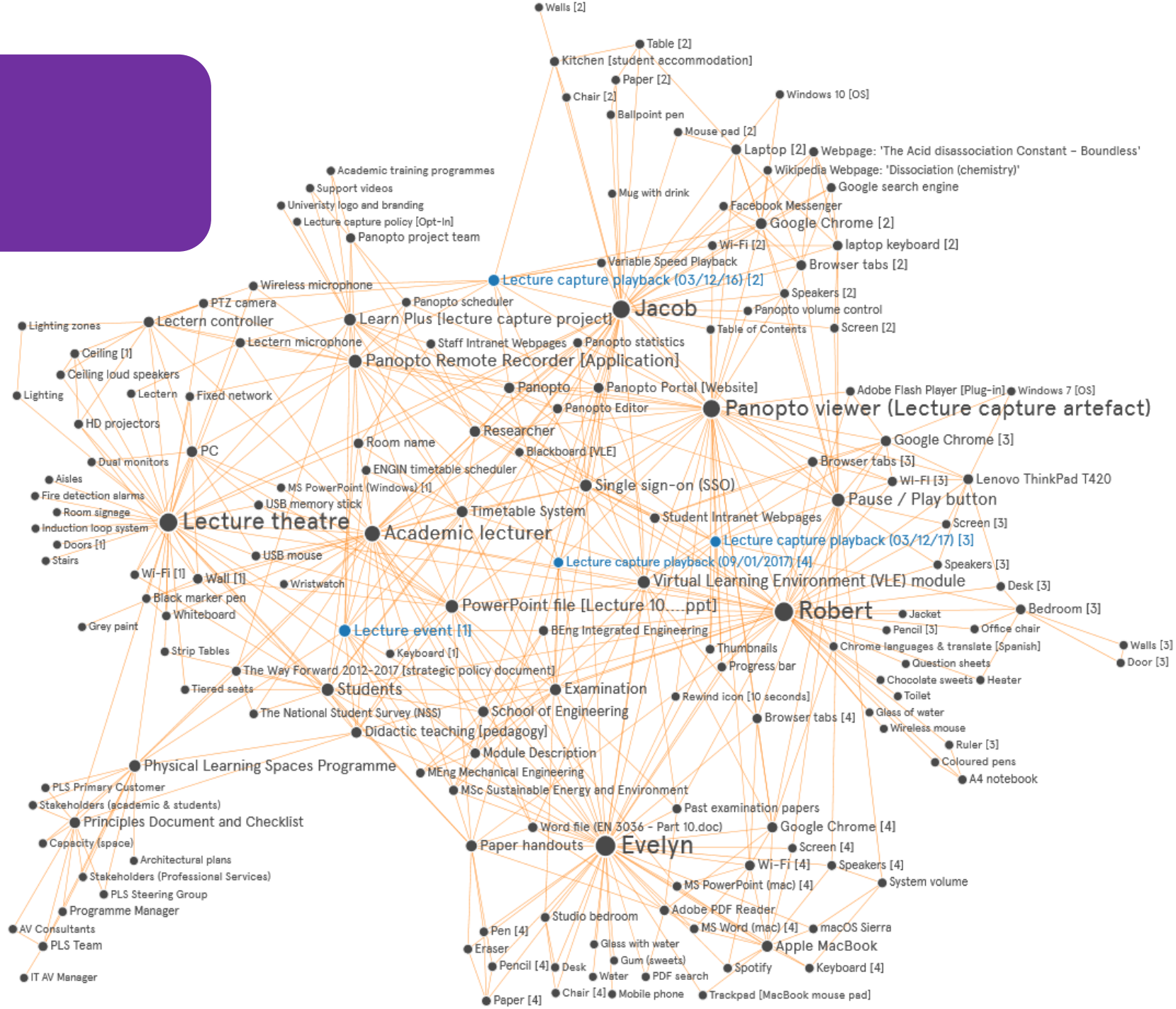
- Spatiality involves **different kinds of space, place and time,** resulting from actor interactions and relations (McGregor 2004, Murdoch 1998)
- Space is **contingent**, **active** and undergoing continual **(re)constitution** (Massey 2005)

Research design

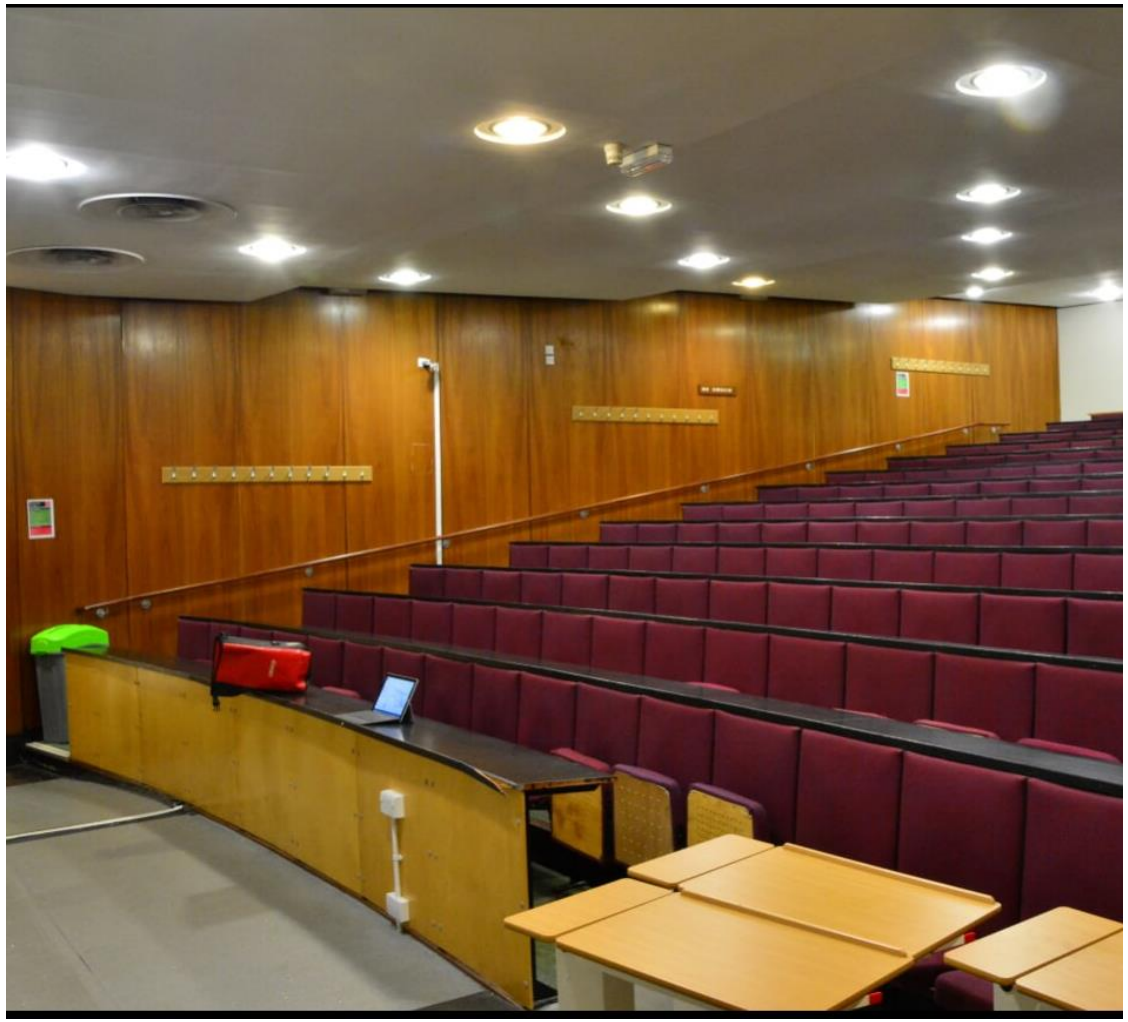
- ‘Follow the actor’ (Latour 2005).
- *Multi-sited ethnography*
- On-screen activities of participants alongside recordings of real-time interactions (Geisler & Slattery 2007)
- Tracing and mapping (*visual network analysis*)
- Multimodal analysis of student produced data (Kress 2014)



Mapping


Walls [2]
Table [2]
Kitchen [student accommodation]
Paper [2]
Chair [2]
Windows 10 [OS]
Ballpoint pen
Mouse pad [2]
Laptop [2]
Webpage: 'The Acid disassociation Constant – Boundless'
Wikipedia Webpage: 'Dissociation (chemistry)'
Google search engine
Academic training programmes
Support videos
Mug with drink
Universisty logo and branding
Facebook Messenger
Lecture capture policy [Opt-In]
Google Chrome [2]
Panopto project team
Wi-Fi [2]
laptop keyboard [2]
Variable Speed Playback
Browser tabs [2]
Wireless microphone
Lecture capture playback (03/12/16) [2]
Speakers [2]
PTZ camera
Panopto scheduler
Jacob
Panopto volume control
Lighting zones
Lectern controller
Learn Plus [lecture capture project]
Table of Contents
Screen [2]
Lectern microphone
Staff Intranet Webpages
Panopto statistics
Ceiling [1]
Panopto Remote Recorder [Application]
Ceiling loud speakers
Lighting
Lectern
Fixed network
Panopto
Panopto Portal [Website]
Adobe Flash Player [Plug-in]
Windows 7 [OS]
Panopto Editor
Panopto viewer (Lecture capture artefact)
HD projectors
Researcher
Google Chrome [3]
Room name
PC
Blackboard [VLE]
Dual monitors
Browser tabs [3]
ENGIN timetable scheduler
Aisles
WI-FI [3]
Lenovo ThinkPad T420
MS PowerPoint (Windows) [1]
Single sign-on (SSO)
Fire detection alarms
Pause / Play button
USB memory stick
Timetable System
Room signage
Student Intranet Webpages
Lecture theatre
Academic lecturer
Screen [3]
Induction loop system
Lecture capture playback (03/12/17) [3]
Doors [1]
USB mouse
Stairs
Lecture capture playback (09/01/2017) [4]
Speakers [3]
Wi-Fi [1]
Wall [1]
Wristwatch
Virtual Learning Environment (VLE) module
Desk [3]
Black marker pen
PowerPoint file [Lecture 10....ppt]
Robert
Jacket
Bedroom [3]
Whiteboard
Pencil [3]
Grey paint
Lecture event [1]
BEng Integrated Engineering
Office chair
Thumbnails
Chrome languages & translate [Spanish]
Walls [3]
Strip Tables
Keyboard [1]
Progress bar
Question sheets
Door [3]
The Way Forward 2012-2017 [strategic policy document]
Chocolate sweets
Heater
Tiered seats
Students
Examination
Rewind icon [10 seconds]
Toilet
The National Student Survey (NSS)
School of Engineering
Glass of water
Browser tabs [4]
Didactic teaching [pedagogy]
Wireless mouse
Module Description
Ruler [3]
Physical Learning Spaces Programme
MEng Mechanical Engineering
Coloured pens
PLS Primary Customer
MSc Sustainable Energy and Environment
A4 notebook
Stakeholders (academic & students)
Past examination papers
Principles Document and Checklist
Word file (EN 3036 - Part 10.doc)
Google Chrome [4]
Capacity (space)
Paper handouts
Evelyn
Screen [4]
Architectural plans
Wi-Fi [4]
Speakers [4]
Stakeholders (Professional Services)
MS PowerPoint (mac) [4]
System volume
PLS Steering Group
Adobe PDF Reader
Programme Manager
Studio bedroom
AV Consultants
Pen [4]
MS Word (mac) [4]
macOS Sierra
PLS Team
Eraser
Glass with water
Apple MacBook
Pencil [4]
Desk
Gum (sweets)
Spotify
Keyboard [4]
IT AV Manager
Water
PDF search
Chair [4]
Mobile phone
Trackpad [MacBook mouse pad]
Paper [4]

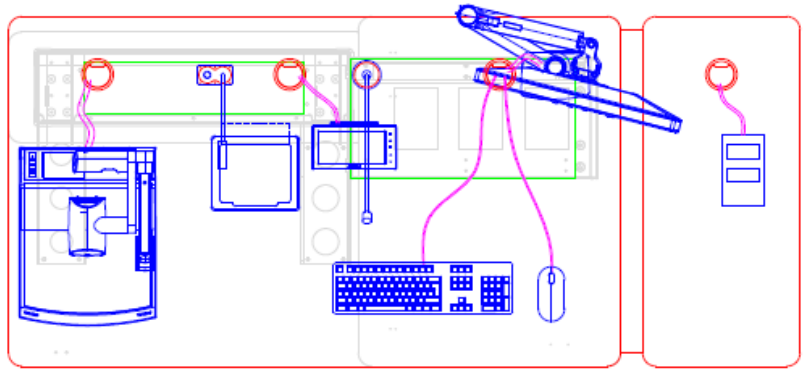
Structuring templates



A comparison of the space prior to refurbishment and after completion. Photographs illustrate that the key characteristics associated with the lecture theatre - the fixed tiered seating and front stage area - were maintained.

Lecturing as a network effect

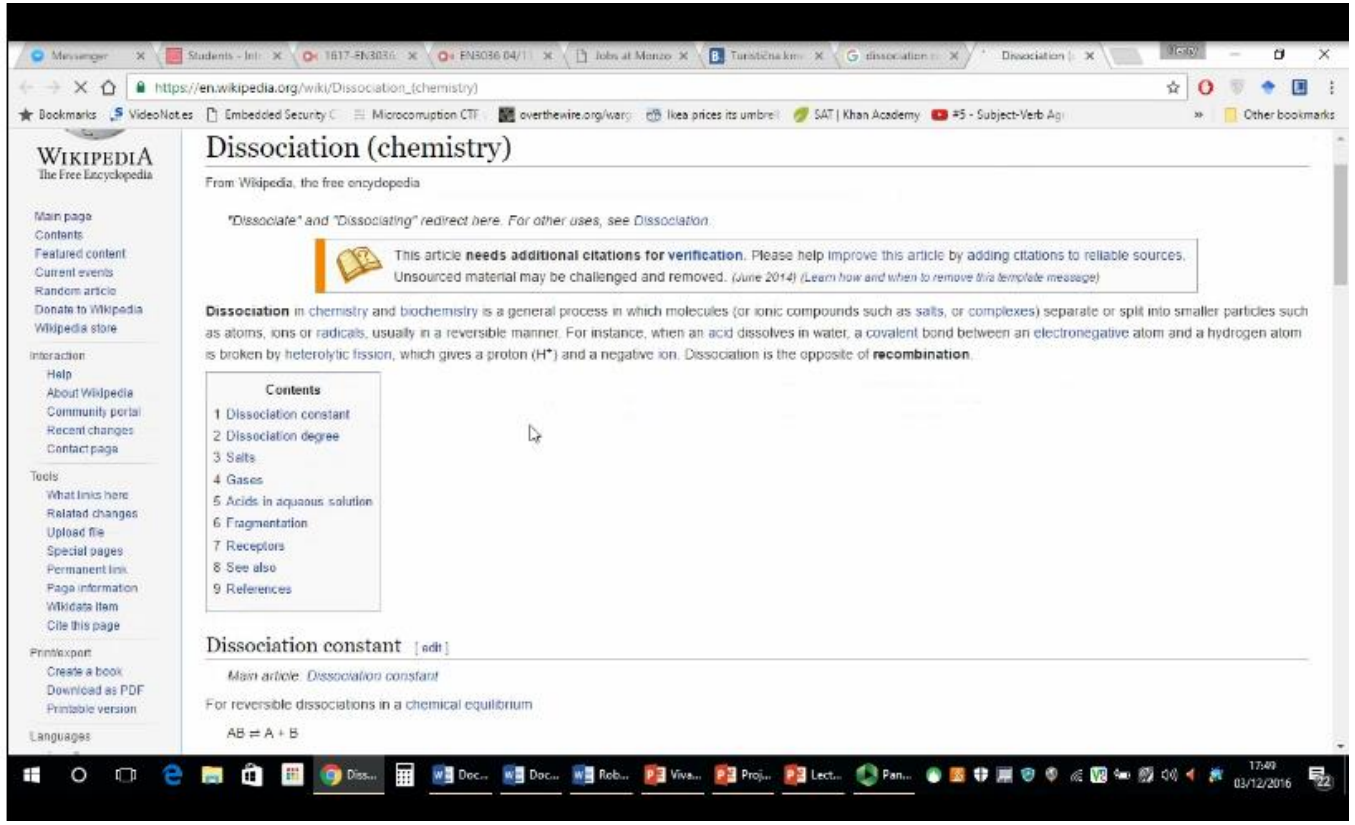
- Discourses and **pedagogical practices** (i.e. didacticism and lecturing) are ***relational effects*** within the *assemblage* of the lecture environment
  - *Didactical configuration* for *didactical performance* (Drijvers et al 2010)
  - Actors amplify, frame and solidify the practice of didactic teaching



N1.32

Spatiality and the lecture capture artefact

- The **computer screen** enacts multifunctional spatiality (Decuypere and Simons 2016)
- Lecture capture creates a rich, **multimodal learning space** by connecting various actors, unconstrained by time or place (Middleton 2015)
- The capture artefact engages in **spatiotemporal compression** (Nespor 2003)



Spatiotemporal (re)configurations

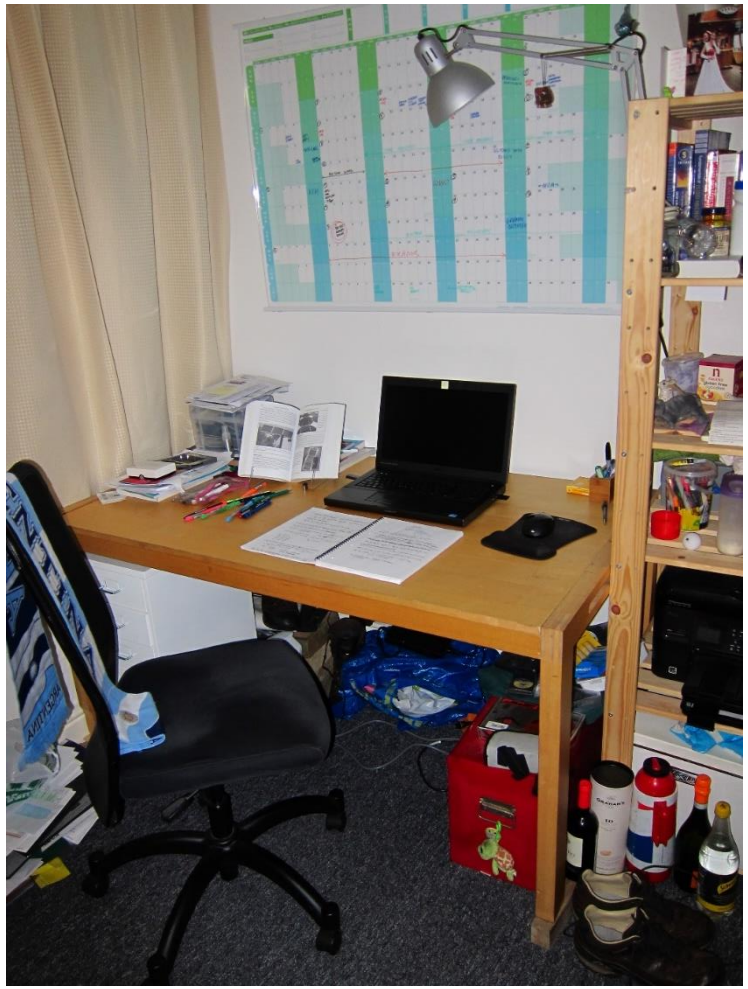
- Every lecture capture playback will offer a **unique sociomaterial construction**, across spatiotemporal dimensions (Mol & Law 1994, Thompson 2012)
  - Meshing of physical and virtual spaces mediated by a range of actors
- The lecturer is now competing within new actor-network configurations
  - **Displacement** of spatial and regional presence weakens the academic's position as actors with authority (Mifsud 2014, Sørensen 2009)

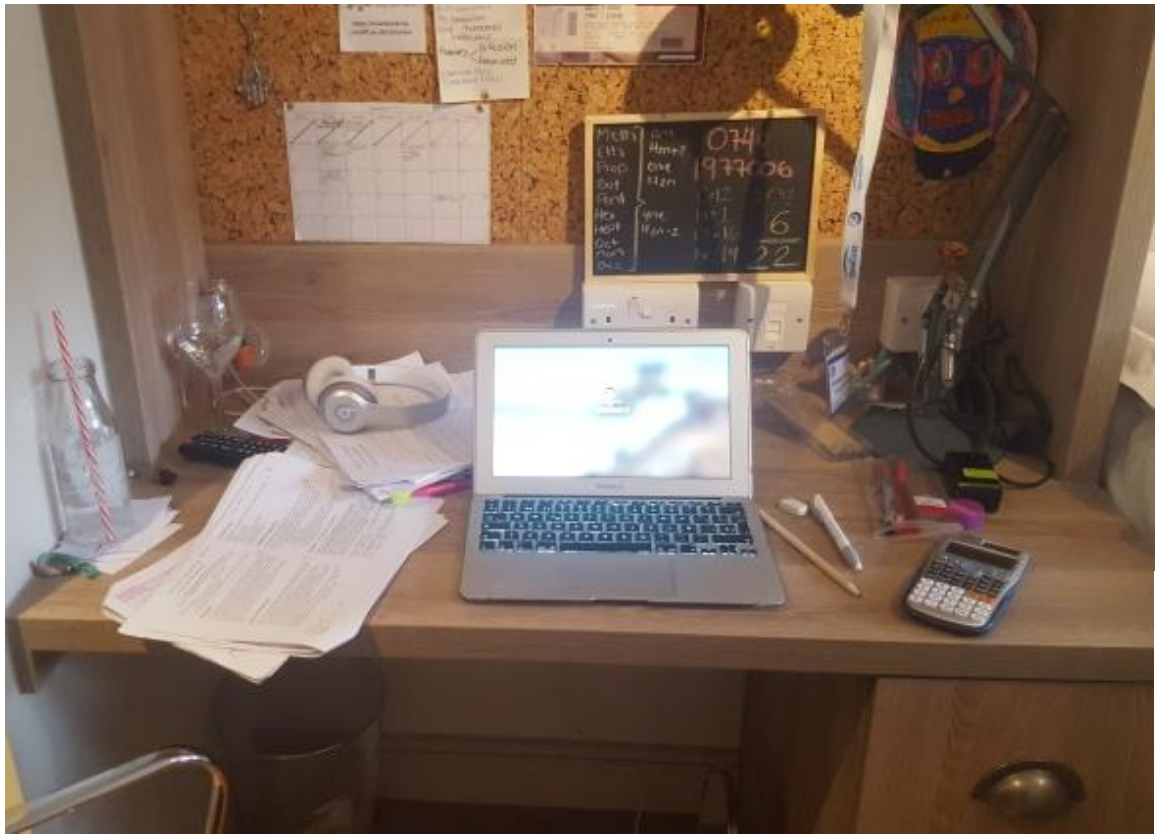
"

*I combine it [watching lecture capture videos] with going to a **café**, going to a **library** or to **my place** to study. What I don't want it to be is just go to café for study, or just go to the library. **I need to change the environment because I get bored.***

"

Pre-constructed study routines





June 2017

Authors
Tabetha Newman and Helen Beetham

Table 17. The location in which online learners most commonly study

Places of study	% online learners
At home	85.1%
At work	8.1%
In a library or learning centre	3.5%
In a café or social space	1.1%
Other	2.3%

Multi-spatial practices and stability

- Participants negotiated study practices within the spatiality of **familiar environments**
- This practice of **note-talking** can be viewed in terms of a **complex sociomaterial arrangement**, involving hybrid spaces and many interacting actors

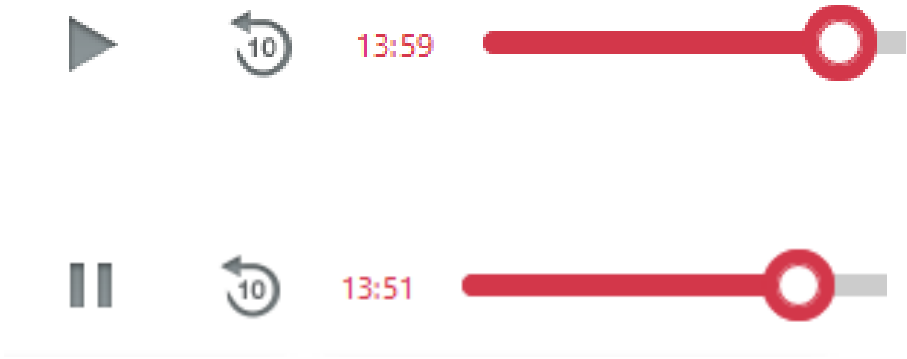
"

*I had the **printed notes** from the lectures with me and some **question sheets**. I had **other notes** which, like in this **book** here, are my written notes. I had some **old past papers** as well…I've got a **big desk** … I've got a nice **office chair**. And I also had my **rulers** and **coloured pens** and **pencil** and stuff like that which I just keep sort of on the desk so when, well you can see the notes here, that helps me remember things.*

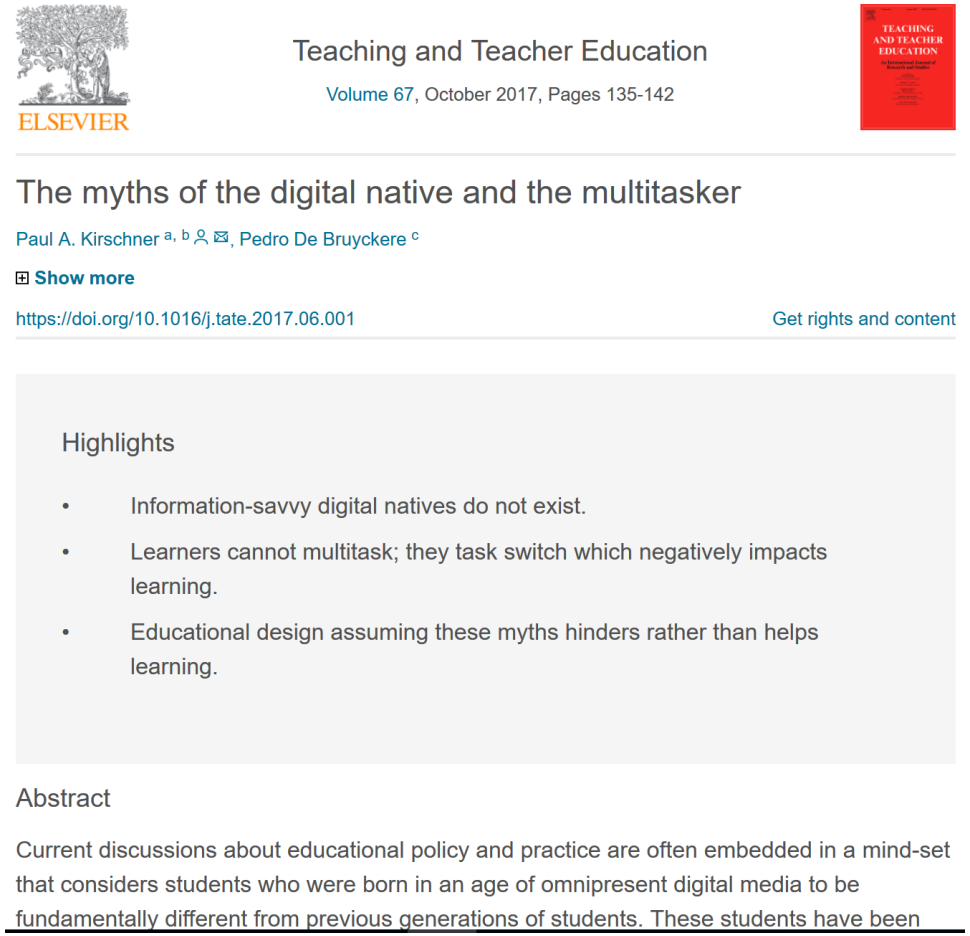
"

Negotiating multi-spatial practices

- The **play/pause button** functions as a *'valve'* and "*configures spaces for pedagogic purposes*" (Thompson 2012 p.101)
  - Affords switching between different actors
    - i.e electronic documents, webpages, physical notebooks and handouts
  - Such material practices would fall apart if the button itself was absent
- However…the pause button serves conflicting qualities
  - Not harmonious with study practices (i.e. social networking / checking mobile phone)



Implications for learning



ELSEVIER

Teaching and Teacher Education

Volume 67, October 2017, Pages 135-142

The myths of the digital native and the multitasker

Paul A. Kirschner [a, b], Pedro De Bruyckere [c]

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Highlights

- Information-savvy digital natives do not exist.
- Learners cannot multitask; they task switch which negatively impacts learning.
- Educational design assuming these myths hinders rather than helps learning.

Abstract

Current discussions about educational policy and practice are often embedded in a mind-set that considers students who were born in an age of omnipresent digital media to be fundamentally different from previous generations of students. These students have been

"

I stayed within the lecture video. I pause. Then I look to exams to know if that topic was in the exams… I started looking at each year [past exam papers posted in VLE]…I pause as I don't like voice or talking if I'm not actually watching. ***If I'm not paying attention*** *then I'm trying to listen and then if I end up doing something else then* ***I'm not focussed****.*

"

- Issues with multitasking?
- Efficient learning requires (momentary) stability and predictability (Thompson 2012)?
- What can we do to support such activities?

Conclusion

- Exploring sociomaterial relations commands attention to how space and time are (re)configured (McGregor 2004, Murdoch 1998, Nespor 1994).
- Individualised study practices materialised within **emergent connections**
  - ad-hoc use of available objects and artefacts, across various physical and virtual spaces
- Practices are held together by **innocuous but powerful actors** (i.e the play/pause button)
- Reveals the **messy complexities** involved in enacting learning practices

Discussion

- “Matter matters”
- If used pragmatically, ANT can provide nuanced insights for the development and deployment of learning technologies and learning spaces (Johri 2011)
- Visualisation mapping may provide perspectives into opportunities for imagining and enacting alternatives to teaching and learning
- Opens up the opportunity to attend to debates concerning the material organisation of spaces, which can be an important focus for future research

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