Hybrid digital material networked learning
Hybrid digital/material networked learning: reviewing the field

• Where the material, as well as the digital is an important aspect. e.g.
  • OU: Pirate telescope, Biological Oxygen Demand, Senseboard
  • Maker culture: learning by making (see IET Innovating Pedagogy 2013)

• What’s the state of the art?
Method

1. Agree list of search terms and combinations of search terms to be used
2. Define list of databases to be searched
3. Carry out searches and import results into Mendeley
4. In Mendeley use title, abstract, keywords to determine whether in scope and tag

In scope
- Subject area (discipline)
  - JACS code
- Level
  - School, Higher Education, Vocational, Multiple, Not specified, Other
- Type
  - Descriptive, Conceptual/Theoretical, Evaluative, Literature Review, Other, Not specified
- Primary focus
  - Focus on Technology, Pedagogy or Organisation of the case

Out of scope
- Code as 'out of scope' and check

No abstract
- Code as 'no abstract' and check
%age initial data set (n=2065)

- In scope: 39.1%
- Out of scope: 38.8%
- Unknown (No Abstract): 22.0%
In scope papers by publication date (n=808)
%age papers by discipline (n=812)

- Not specified NSJACS: 12.6%
- Ubiquitous computing UBJACS: 0.5%
- Technologies JJACS: 0.4%
- Computer Sciences IJACS: 4.2%
- Engineering HJACS: 76.0%
- Physical Sciences FJACS: 4.6%
- Veterinary Sciences DJACS: 0.4%
- Biological Sciences CJACS: 0.7%
- Allied to Medicine BJACS: 0.2%
- Medicine and Dentistry AJACS: 0.9%

% of papers
Hybridity terms (%age papers) (n=864)

- Tangible virtual: 0.4%
- Home experiment: 0.1%
- Robotics: 18.2%
- Ubiquitous computing: 1.4%
- Manipulatives: 0.2%
- Augmented reality: 1.9%
- Internet of things: 0.9%
- Remote laboratory: 83.9%
%age papers by primary focus (n=813)

- Technology, 56.0
- Pedagogy, 14.9
- Org, 24.0
- Other, 5.2
%age papers by type (n=804)

Descriptive, 87.3
Evaluate, 9.5
Review, 1.0
Type not specified, 0.1
Type other, 0.1
Conceptual, 2.0
Observation/discussion

Large literature in language of remote labs

Are we missing terminology in other disciplines?

Large engineering literature

Descriptive

Focus on technology

Pedagogy/evaluation
Next steps....

- Reviewing a sample of papers in detail
- Case studies