Unplugged computing and semantic waves
Analysing Crazy Characters

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To explore the use of semantic waves as a way to better understand the effectiveness of unplugged computing activities

By analysing the semantic profile of a popular unplugged teaching activity
Rational for our study

• Research on effectiveness of unplugged approach mixed (Feaster et al., 2011; Thies and Vahrenhold, 2016; Rodriguez et al., 2017).

• Suggestion that physical enactment makes concepts concrete and memorable (Curzon et al., 2009; Baraslou et al., 2003).

• LCT provides a way to explore how and why unplugged works (or not).
Method:

• Technique: Simplified semantic profiling approach for exploratory case study (Maton, 2014).

• Case study: Appropriate for in depth description/analysis of an instance in action (Merriam 2009; Stake 1995).


From Barefoot. With kind permission of BCS and BT. https://www.barefootcomputing.org/resources/crazy-character-algorithms
Let’s do crazy characters
Semantic Profile for Crazy Character’s whole class introduction

Lesson Plan Steps
- Explain you are going to use a new word – can they listen out?
- Share the learning intention.
- Say you are going to use the algorithm now.
- Read out your steps and learners draw the crazy characters. Model adding extra detail.
- Ask pupils to show what they have drawn. I didn’t expect that.
- How could you change that?
- Ask what the algorithm was. Explain what an algorithm is

Semantic Profile Notes
- Signalling: A signal that a high is coming on the semantic profile.
- Concept Introduction: This is what you are going to learn about.
- Connecting: Connecting the theory to the concrete.
- Concrete activity: Practical activity with high semantic gravity. Learners are adding knowledge if the meaning is connected. The extra detail adds flow.
- Counter expectancy: Alternative options are introduced, increasing density.
- Staged return: Density increases as context is reduced.
- Packing: Develop/reveal the definition/reveal the concept.

Key
- SG Semantic Gravity
- SD Semantic Density
Back to Paul ...
Discussion Points

What are the different ways to pack and unpack knowledge? (Discussion 1)

Who packs and unpacks? (Discussion 1)


Semantic profiles and semantic waves

Adapted from Maton (2013)

- Strong density
  - Weak gravity
  - Abstract Concepts
  - Technical Language
  - Unpacking
    - Explain in terms of concrete things and simple language
  - Repacking
    - Link back to the abstract ideas and technical concepts

- Weak density
  - Strong gravity
  - Concrete things
    - Things the learner can easily understand
  - Unplugged activity
    - Examples
    - Diagrams
    - Metaphors
  - Everyday language

Time passing through the learning experience
Discussion Points...back to Paul

Layers, ladders and routes…
What routes can you follow between metaphor and concept?
(Discussion 2)

How important are waves within waves?
(Discussion 2)

References


References


Links

Google doc

Teaching London Computing Webpage