



Making Construals as a Vehicle for Interactive Collaborative Learning

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The CONSTRUIT! project: EU Erasmus+ 2014-2017

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‘Making construals’? CONSTRUIT!?

Making construals is an alternative way of conceiving computing that is better suited to the interactive collaborative learning than a ‘computational thinking’ perspective

CONSTRUIT! is concerned with

“Making construals as a new digital skill for creating interactive open educational resources”

Motivating ideas ... Papert

Seymour Papert in **Mindstorms** refers to two trends:

ubiquitous computing that people accept as part of the reality of everyday life

a social movement afoot: *an increasing disillusion with traditional education*

"... these two trends can come together in a way that would be good for children, for parents and for learning. This is through the construction of educationally powerful computational environments that will provide alternatives to traditional classrooms and traditional instruction. "

" I do not present LOGO environments as my proposal for this ... too primitive ... too limited by the technology of the 1970s ... The role I hope they fill is that of a model. By now the reader must anticipate that I shall say an **object-to-think-with**, that will contribute to the essentially social process of constructing the education of the future."

Motivating ideas ... Crook

Charles Crook in **Computers and the Collaborative Experience of Learning** emphasises the central importance of intersubjectivity:

“... analysing zones of proximal development (ZPD) ... has furnished useful insights into the character of instructional interactions ... However ... much real instructional discourse is ...embedded in a more open-ended and communal kind of interaction ... Not as intimate as ZPD conceptions suggest ... not simply concerned with supervising the actions that might effectively complete some current problem-solving task ...”

Computers have “a special potential for resourcing the social construction of shared knowledge” however “... the meaning of some teaching utterance is rarely to be located in, or made manifest through, its simple surface features – as if such meaning were something to be generated by a rule-bound system of the sort that computer-programmers would seek to construct”

Common themes

Both Papert and Crook:

- recognise the importance of the social dimension in learning
- believe that there is great potential for the computer in this regard
- look for a role beyond simply programming
- emphasise the need to develop richer conceptual frameworks

Themes in CONSTRUIT!

“Making construals as a new digital skill for creating interactive open educational resources”

- A construal as ‘an object-to-think-with’
- ... or as ‘how we think something works’
- Computer support for computing unplugged
- Issues/qualities investigated in the project: accessibility, comprehension, **collaboration**, assessment, customisability, topicality

Aims for CONSTRUIT!

An open online course based upon
a curriculum for making construals
an online instrument for making construals
resources: construals, documentation

? Multi-disciplinary, for all educational sectors

Final conference at Warwick July 13-16, 2017

Contact

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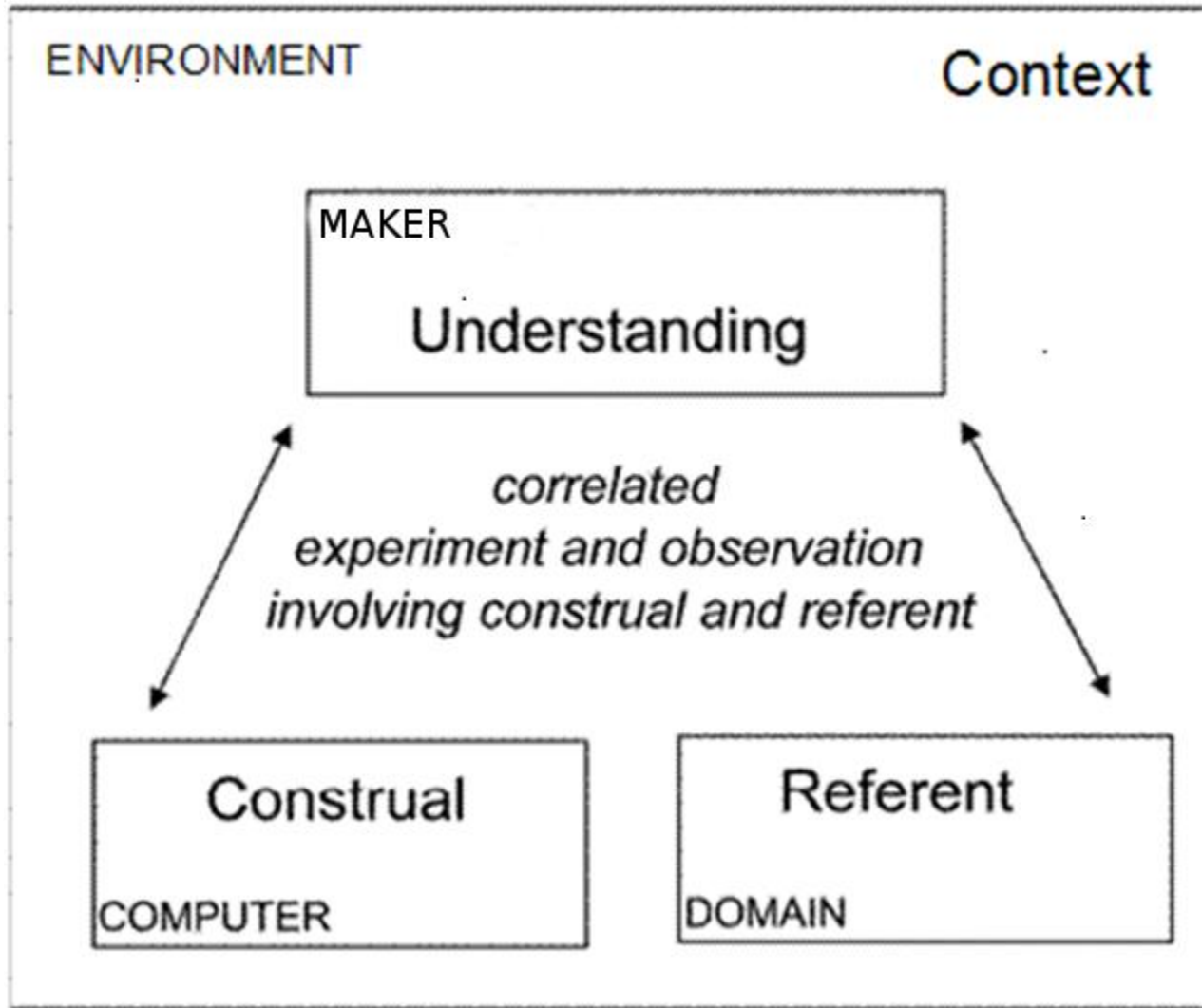
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Making Construals as *Construction*



Making construals as ...

Making connections in experience ...

between – for instance:

a word and its meaning

a person and a relationship (e.g. mother)

a map and a city

a number and its significance (e.g. a price)

The experience is essentially personal ...

... the connection may not be

A [digital] construal

A construal

an interactive physical artefact that embodies our ‘working understanding’ of situation in terms of **agency, observation & dependency**

Agency, observation and dependency of two kinds:

- perceived by the maker of the construal
- projected onto other agents of which the maker can have no direct experience.

The 'ODA' framework

Agency

what we think initiates the changes we observe

Observation

the specific entities we think agents respond to and which mediate their state-changing actions

Dependency

the way in which changes to observables are perceived by agents to be concomitant

Sense-making

A situation has a characteristic ODA template

A construal embodies

counterpart observables, dependencies and agency matching this same ODA template.

In computational settings, crafted situations have

- highly stable patterns of interrelationship
- can be reliably reproduced.

Illustrative examples

Faraday's construals [David Gooding 1990]

Spreadsheets

'force a writer to absorb Republican material'

NY crossword: Clinton / Bob Dole

"My 'puter"

"What is the opposite of ...

day? ... chicken? ... tree? ... sofa?"

Feedback ...

Please give your feedback on the workshop via the link at the top left of the schedule.

You can also email me

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