

## STRUCTURED ABSTRACT



IGIP/ICL CONFERENCE

### **Making Construals as a Vehicle for Interactive Collaborative Learning**

(A workshop proposal)

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#### **CONTEXT**

A **construal** is an interactive artefact (in this context, computer-based) that embodies provisional understanding of a situation through capturing characteristic patterns of observation, dependency and agency. *Making construals* is a new approach to using computers that integrates the roles of the teacher, student and developer in educational software. Whilst being developed over three decades, this approach has been extensively trialled and informally evaluated by computer science undergraduates and postgraduates. It is now the focus of an open online course being developed for a wider educational audience in an EU project. In this project, it has been trialled with teachers and pupils in Greek secondary schools, and at science festivals in Finland and the UK.

#### **PURPOSE**

This workshop introduces and promotes 'making construals' as an approach to interactive collaborative learning (ICL) with potential for broad application. Its purpose is to disseminate the basic concepts, principles and practice of making construals in conjunction with a practical online environment ("the MCE"), to demonstrate some key applications and to seek feedback from experts in the ICL field. Particular attention will be given to evaluating and enhancing the accessibility of the MCE and its suitability as a vehicle for ICL activities.

#### **APPROACH**

Making construals is an approach to computing that aims to complement what Winograd and Flores characterised as the 'rationalistic' tradition that has had a dominant influence over academic computer science .

Our workshop will have three aspects: an overview of making construals, highlighting relevant projects and publications and summarising empirical findings based on experience of interacting with several hundred computer science students, tens of school teachers and pupils, and several educational consultants: some practical experience of using the MCE for ICL, as illustrated by construals drawn from mathematics, computing ("unplugged"), medicine and music; and a final discussion in which we shall welcome participant feedback.

#### **ANTICIPATED OUTCOMES**

Making construals represents a significant shift in orientation as far as principles for giving computer support for interactive collaborative learning is concerned. We hope that workshop participants will recognise its value as a new conceptual framework for practices already represented in contemporary applications of computing in education (notably in the use of spreadsheets) and be able to appreciate the potential for effective exploitation in ICL by a wider community, including computing non-specialists, that is offered by our supporting platform.

#### **SUMMARY**

We hope to show that making construals has significant current merit and future potential as a broader approach to computing to support ICL. By complementing 'computational thinking', it can supply an infrastructure for exploiting computer-based technology, far better suited to interactive collaborative development, that – in the spirit of constructivism – blends learning and construction.

#### **REFERENCES**

*Spreadsheets in Education*, Bond University School of IT, Australia, <http://epublications.bond.edu.au/ejsie/>.

#### **KEYWORDS**

making construals / interactive artefacts / spreadsheets / interactive collaborative learning