Researching graphicacy and modelling

N.Seery
Department of Design and Manufacturing Technology
University of Limerick

E.W.Norman
Loughborough Design School
Loughborough University

Introduction

This abstract is being written to acknowledge and offer the opportunity to extend the contributions made by the academic staff and research students to the IDATER Online Conference on Graphicacy and Modelling shown in Table 1. It has not been written in consultation with them, but in the hope that many of them will be able to take part in on-going discussions at the EDGD - ASEE Conference concerning 'Universal Graphics – Multiple Perspectives'. These are multiple perspectives on 'Graphicacy and Modelling' that can be freely downloaded via the IDATER Online website (http://idater.lboro.ac.uk/category/conferences/graphicacy-and-modelling/) where comments can also be left.

The IDATER Online Conference on Graphicacy and Modelling was organized jointly by the Design Education Research Group at Loughborough Design School and the Technology Education Research Group at the University of Limerick. But why? And why did these academic staff and research students give of their time so generously to this cause? The back cover of the published proceedings gives a broad indication of the some of the reasons.

> *Graphicacy is important in just the same way that literacy and numeracy are important. Graphicacy is also neglected in a way that literacy and numeracy are not. Why is this so?*
> *The authors of the research papers at the Graphicacy and Modelling conference … explored these issues, and also its role in the modelling of human futures. This book is a starting point for further research in this area.*

Whether it is a recognition of the impacts that designing can have on the sustainability of human futures – economic, social and environmental; the development of a competency based curriculum that fully reflects the role of visual reasoning; the observation that visual intelligence is becoming a key aspect of communication; or simply recognition of long-standing neglect, it has become apparent to many people that graphicacy research needs attention. The IDATER Online conference in 2010 was a starting point; a 'line in the sand'.

Those interested in these perspectives will need to download the full papers, and this abstract can do no more than indicate the research strategy that is being followed and some of its starting points.

Foreword … *Understanding graphicacy*	Prof Steve Garner[1]
Editorial … *Online conferencing: designing and innovation*	Prof Eddie Norman[2] & Dr Niall Seery[3]
Invited Paper … *Vision, modelling and design*	Prof Ken Baynes[2]
Purposes of drawings in design sketchbooks	Dr Owain Pedgley[4]
A review of the nature, provision, and progression of graphical education in Ireland	Dr Niall Seery[3], Dr Raymond Lynch[3], & Dr Rónán Dunbar[5]
'Blurring the boundaries': a metaphor to guide the development of specialist learning spaces as part of an academy design development project	Dr Donna Trebell[6]
Continuity and progression in graphicacy	Xenia Danos[2] & Prof Eddie Norman[2]
The elephant in the room: the influence of prevailing pedagogical practice on the integration of Design and Communication Graphics in the post-primary classroom	Dr Oliver McGarr[3]
What is the role of observational drawing in contemporary art & design curricula?	Michelle Fava[2]
Examining sketching ability within initial technology teacher education	Diarmaid Lane[3], Dr Niall Seery[3] & Dr Seamus Gordon[3]
Defining the variables that contribute to developing 3D CAD modelling expertise	Anthony Rynne[3], Dr William F Gaughran[3] & Dr Niall Seery[3]
Eye-tracking experiment to test key emerging principles of the visual communication of technology	Cheng-Siew Beh[2] & Kevin Badni[2]
Differences in the epistemological beliefs of postgraduate pre-service teachers	Dr Raymond Lynch[3]

1 = Open University, 2 = Loughborough University, 3 = University of Limerick, 4 = Middle Eastern Technical University, 5 = Athlone Institute of Technology, 6 = DMT Education Consultancy Ltd

Table 1 Published papers from the IDATER Online Conference on Graphicacy and Modelling 2010

Method

A conference website was established in September 2010 and a Call for Papers was distributed. The papers were made available online together with the opportunity for online comments and discussion. Those contributors who were available met in Limerick in December. Some of the papers were presented and discussed. Following the conference the proceedings were published and made available online in order to facilitate further contributions and a follow-up seminar was held in Loughborough in December 2011. The discussion to be held at the EDGD - ASEE Conference in November 2012 is the third step of the journey.

Results

The essential starting point needs to be developing understanding of the relationship of designing, modeling and graphicacy. Fig 2 shows a possible representation developed through discussion between Cheng-Siew Beh, Xenia Danos and Eddie Norman. It appears in the Editorial to

the Conference book (p10) and this relationship was explored in the contribution by Ken Baynes, who concludes as follows:

What is clear is that the traditional interpenetration between designerly thinking and graphic models is going to continue. The proposition is that the two were closely linked in the emergence of human intelligence and will continue to enlarge the perceptual span of all human beings and of designers in particular (p24)
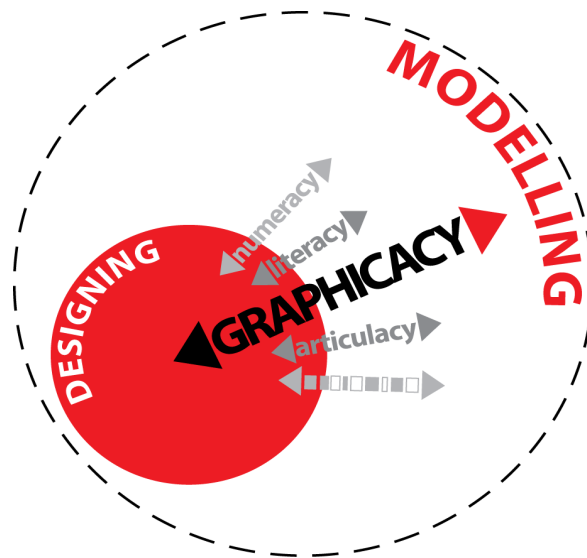
Fig 2 A possible representation of the relationship between designing, modeling and graphicacy (designed by Cheng-Siew Beh)

Subsequent papers go on to discuss these matters through analysing the purposes that drawings served in a particular design project (… the polymer acoustic guitar), issues relating to graphical education within curricula, the relationship of graphicacy and literacy (in architectural planning), the development of CAD expertise, empirical evidence relating to visual communication (eye-tracking) and the development of sketching ability.

The follow-up meeting in Loughborough included a first look at the 'lines in the sand' that had been identified and the associated research agendas. For example, in relation to the paper concerning 'Continuity and progression in graphicacy' (Danos and Norman)

Lines in the sand were suggested to be:
- Available literature is limited
- A fit-for-purpose taxonomy has been developed
- Its use can highlight cross-curricular links
- Tasks conducted within practice yield useful level descriptors
- An approach to co-research has been identified

Research agendas were proposed as:

- Can co-research be used to gather data on a significant scale?… even internationally?
- Would well-defined level descriptors lead to improved teaching and assessment?
- … and school graphicacy audits and policies as for literacy and numeracy?
- Would educational standards improve as a result of such 'whole school' strategies?
- Would the value of design education be more recognised?

Discussion

This abstract has been submitted in order to facilitate interested colleagues who are attending the EDGD ASEE Conference to join this on-going conversation. Further lines in the sand are expected to be drawn and research priorities discussed. The expectation is that a growing research community will emerge and that associated funding bids will be made. If these research agendas are important to you then you are very welcome to join the discussions.

References

Norman, E. & Seery, N. (2011). *IDATER Online Conference: Graphicacy and Modelling,* Design Education Research Group, Loughborough Design School (Downloadable from https://dspace.lboro.ac.uk/dspace-jspui/handle/2134/9015