

## **Visualising Meaning in Contemporary Architectural Education**

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**Abstract:**

The paper summarises the research design for a study examining meaning in contemporary architectural images. This is consequential as there is an overwhelming shift from traditional to digital modeling of student work in contemporary architectural education. Students tend to, often encouraged by the prevalent discourse, work exclusively towards the final output of design studio projects rather than arriving at solutions through the reflective design process by recalling previously acquired knowledge. This trend may be unfavourable to educational institutions and future practitioners as students increasingly present final solutions which demonstrate little or inaccurate indication of structure, material, and context. The project addresses ways in which the architectural image is produced and attitudes towards output and production.

**Keywords:** Artefact, assessment, content analysis, ideology, image, learning, meaning, process, representation, simulacra

The project is emergent from reflection upon previous experience teaching professional architecture courses. An inclination towards digital modelling and visualisation software as the sole approach in the design studio is overwhelmingly present. Students are often encouraged by the prevailing discourse to work exclusively towards the finished product of design projects rather than development through the reflective process founded on recall of previously acquired knowledge. Suggesting that there is a growing disparity among students between visualisation and knowledge-knowledge that may be encouraged through the act of drawing. This trend may be a disservice to educational institutions and future practitioners as students increasingly present final solutions which demonstrate little or inaccurate indication of structure, material, and context. Broadly, the project's aim is to examine the influence of digital architectural images on contemporary architectural education. It addresses the modes in which the architectural image is produced and attitudes towards artefact and production. The intention is not to disagree with the many benefits of digital modelling used within the discipline of architecture but does examine the ideology within educational institutions and how its use is cultivating architectural graduates which no longer fit within the historical definition of the architectural professional. The following text first discusses instigation of the project followed by a brief survey of the existing literature, theoretical influences, and finally methods with which to proceed with the query.

The problematic lies within the hunch that experienced practitioners, those whose training included traditional modelling, are conversant and capable moving in-between the two modes of modelling; traditional and digital, supporting and facilitating the generative design process<sup>1</sup>. Presently, many architectural design students are exclusively competent in digital modelling, potentially leading to 'fixation'<sup>2</sup> and disregard of the critical, creative thinking required for successful design problem-solving that emerges from the generative design process when one can competently move between the two modes of modelling. These concepts are recognised within the existing literature, tutors' accounts, and student work leading to the research question: Does an exclusively digital studio achieve and represent learning outcomes in contemporary architectural education? The project addresses the digitally modeled architectural representation and the intention of visual communication.

The study aims to respond to this hunch with the overriding research question and subsequent objectives generated by review of existing literature, preliminary research, philosophical underpinnings, and reflection;

1. Were learning outcome easier to identify and assess in pre-CAD studios and do digital models produce an artefact disconnected from meaning?
2. Is the design process truncated when students are allowed to arrive at a solution too quickly via digital modelling producing visualisations rather than more traditional metaphorical representation? Can this praxis support a reflective manner of designing?
3. Where is digital modelling located within the value system of contemporary architectural education? Is there a shift which challenges architectural education's ideals and intentions?

Currently, there are two conflicting perspectives; the first believing that traditional modelling<sup>1</sup> is directly related to the critical thinking and problem-solving which occurs during the design process and the second which encourages digital production of images emphasising product over process.<sup>2</sup> Michael Brawne acknowledges each perspective stating that within the discipline of architecture, design and drawing are inseparable, whether created by hand or computer is immaterial as long as thought is translated into some sort of discernible artefact. The initial review of literature referenced three existing studies<sup>3</sup> addressing the previously mentioned themes which are further discussed here:

Each of the three studies is addresses the value of representation and modes of modelling. Familiarity with these studies and their themes is central for grounding my project. Designers have a unique approach to problem-solving working and testing multiple solution possibilities before arriving at the most satisfactory. In many ways, digital modelling doesn't require this of the designer which can lead to 'fixation.' Each study agrees that there is a close involvement between architectural meaning and the praxis of the architectural designer from the abstract design beginnings to concrete technical issues [Pérez-Gómez: 2006, 218]. This uniquely designerly approach to problem-solving is threatened by the sole use of digital modelling by eliminating exploration and defining the problem and solution together. The experienced architect possesses procedural knowledge where the novice does not and is not able to generate anything other an unoriginal solution [Cross: 2001 4, 5, 10]. Donald Schön points out that successful solutions are seldom done in one burst at the beginning of the design process. However, this is the manner in which many undergraduate students approach design project briefs. Fixation is reinforced when students are allowed to use digital modelling from the outset. Successful design seems to be more a matter of development and refining of the problem and solution together with continuous analysis and synthesis between the two evolving simultaneously until the two are resolved [Dorst & Cross: 2001, 435]. The digitally reliant student can be identified by their attachment to precursory solution concepts hesitant to develop or make changes from the initial gesture [Cross: 2001, 7]. When the prematurely generated solution proves unsatisfactory they tend to discard the solution altogether spending additional time and effort in search for a separate alternative [Cross: 2001, 7].

Modern technology and its power of reproduction has created the condition under which the image separates from the object and materiality [Warwick: 2000]. The lack of temporality of digital modelling further promotes the dominance of final illustrative products asserting a clear separation between the two phases of design: process and artefact [Gurel & Basa: 2004, 195]. These disconnected images upset the discipline's standardised conventions and attached meaning [Deleuze and Krauss: 1983, 55, 56]. Traditional modelling, in particular sketching, serves at least three purposes, acting as external memory, visual-spatial cues, and a setting in which design thoughts are constructed [Cross:2001, 11]. Design education must attempt to foster the ability to imagine, to externalise, to act socially, to construct and learn from experience and to communicate concepts [Baynes: 2008, 8, 10]. Differing discourses guide design studios which respond to latent ideologies which influence assessment of student work [Gurel & Basa: 2004, 193]. Architectural education must adapt, however, the learning outcomes of the digital studio are not yet fully known or understood. Recent graduates exclusively proficient in digital modelling create a disparity between themselves and pre-CAD designers.

Digital modelling renders the world in visualisations rather than representing the designer's vision. Vision is what the eye can see while visuality is a vision which has been technologically and/or socially constructed [Rose; 2001, 6]. The existing model of education has its roots in the 19C. Ecole des Beaux Artes which marked a shift from hands-on learning of the built environment to its representation through standardised architectural conventions [Gurel & Basa: 2004, 193&194]. Theoretically, viewing the power of the final graphical presentation conceives it as an idea which is formed through a body of discourse produced and circulated by architects, designers, academics, and philosophers in different forms of texts in the design environment which in turn influence students. Neil Leach draws from the works of cultural theorists including Jean Baudrillard aiming to highlight the conflict within contemporary architectural culture critiquing the role of the image in the domain of architecture and challenging the unrigorous thinking that has become the norm [Leach: 1999, viii]. If digital expression alone begins to govern the process of education, focus inevitably shifts from the process of design to the final artefact. Assessment of final graphical presentation as an aesthetic concern may dilute the intention and protocol of design education [Gruel & Basa: 2004, 193]. This accurate of my experience in architectural design studio as students appear not to be equipped to deal with difficulties as they arise. The reliance on image alone diminishes the denotative meaning associated with conventional architectural representation of the material built environment.

Set in the postmodern, the project is constructed as a critical evaluation of contemporary architectural education emerging from philosophical underpinnings which inform the project both theory and method. The postmodern social critique aims to bring attention to the uncertainty confronted in society and ultimately the education of architects by challenging what is now taken for granted and the effects of the changes which may be overlooked. Mixed method research allows the combining of quantitative data collection and qualitative triangulation and interpretation, acknowledging discourses, identifying actor-networks, and reflection upon grounded theory, Baudrillard's work has influenced the project as it is critical of contemporary representation.

Support of traditional architectural conventions is necessary largely because the drawing, or representation, is only an analogue of the building which cannot replace the physically built further leading to critique of the postmodern condition of hyperreality [Brawne:2003 p.83]. Baudrillard argues that postmodernity is ocularcentric not only because images are more common, nor because knowledge is increasingly articulated visually, but because we increasingly interact with the contrived visual experiences- or simulacra. He critiques the simulacrum arrived at when the distinction between representation and reality, or the signs and what they refer to in the real world, breaks down [Appignesi & Garratt:1995 p.55]. This is unavoidable, architecture as a discipline is subjected and subject to technology, media, and socio-cultural value systems. With the overall focus on meaning and education, a postmodernist social critique allows the use of a mixture of research methods to investigate how image is used as a means of communication, learning, and as indicator of what has been learned. Social constructionists debate that human actions shape technology, rather than human action being technologically determined. The use of technology cannot be understood without first understanding how it is embedded in the social context. Varying forms of content analysis will be employed as data collection to examine written and visual texts, with use of qualitative questionnaires as the hypothesis, research objective and reflective analysis emerge from grounded theory. The purpose of conducting the project as a social critique is to bring to light the conditions which maybe problematic focusing on the oppositions, conflicts and contradictions in a given social group- architectural education in this case. Situating the project as socially determinate looks at the shift in ideology towards digital modelling rather than the position of technologically determinate which would be concerned with the technology itself.

Content analysis classifies textual and visual sources to topically relevant and manageable bits of data, particularly relevant for researching art and design. The method is used to generate variables in microcosms of society- the study of a particular group's practice in a localised environment representative of a larger scope of the institution of architectural education [Weber: 1990 11]. The method requires setting the relevant criteria to examine the following texts; published academic documents, tutor experiences, and visual output from students. From the social perspective, rather than the technological, content analysis is useful for investigating the following particulars which:

- compare 'levels' of communication to compare the communication against objectives.
- identify the the intentions of the text and/or communicator (in the case of my study 1. administrators, 2. tutors, and 3. students).
- describe the attitudinal and behavioural responses to the texts.

The process can be useful for exploring the broader actor-networks involved, the way these texts affect the various users and participants by reflecting the patterns of institutions and groups within the actor-network. Further, this can reveal the focus of the society, institution, groups within the network, and the individual. Recognising and describing the trends in the content and practices [Weber:1990 9]. A pilot study consisting of an informal questionnaire and survey of selected texts was used to test research methods and to guide and confirm the objectives of the study illuminating the broader social contributors to the issue.

Thus far, the survey has concluded that knowledge is value dependent, and changeable. The project may reveal through content analysis and reflection, how, what and why students are learning what they are learning. At the same time, the study brings into view what students are not learning, what they are not being taught, why this is so, and how this condition affects education and ultimately industry practices. Digital images are clearly here to stay and the concern is that they address primarily our vision and not other cognitive and embodied senses transforming our conceptual understanding of reality and monopolising the discourse surrounding visual architectural representation [Pérez-Gómez: 2006, 217]. Despite computers' advantages and innovations, drawing digitally amplifies inclinations towards decontextualised and self-referential architecture reduced to image alone. Digital modelling has influenced and ultimately reshaped the design process of the current generation of architectural students and graduates. The study endeavours to present further understanding of the condition so that educators may appropriately adapt curricula and strategies.

## Explanatory Notes

<sup>1</sup> Kruger, C. and N Cross. 2006. 'Solution Driven Versus Problem Driven Design: Strategies and Outcomes.' *Design Studies*, v. 27, no. 5, pp. 527-548.

<sup>2</sup> *ibid.*

<sup>3</sup> 'Design Cognition: Results from Protocol and other Empirical studies of Design Activity,' N. Cross, 'The Status of Graphical Representation in Interior/Architectural Design Education,' Gurel & Bassa, and 'The Use of Drawing in Architectural Design: some recent experience from UK Practice,' B. Edwards

## References

- Appignesi, Richard and Chris Garret, 1995. *Postmodernism for Beginners*.  
Icon Books Ltd: Cambridge.
- Baynes, K. 2008. Design education: What's the point? *Design and Technology Education: An International Journal*, v.11 n.3.
- Baudrillard, J. 1983. *Simulacra and Simulations; translated by Sheila Faria Glaser*.  
University of Michigan Press: Ann Arbor.
- Baudrillard, J. 1996. *The Perfect Crime trans. by Chris Turner*. Verso: London.
- Beck, Clive. 1993. 'Postmodernism, Pedagogy, and Philosophy of Education' online, Ontario Institute for Studies in Education., [http://www.ed.uiuc.edu/eps/PES-Yearbook/93\\_docs/BECK.HTM](http://www.ed.uiuc.edu/eps/PES-Yearbook/93_docs/BECK.HTM), accessed 17 March 2010.
- Bloland, H. 1995. 'Postmodernism and Higher Education,' *Journal of Higher Education*.  
Sept-Oct., [http://findarticles.com/p/articles/mi\\_hb172/is\\_n5\\_v66/ai\\_n28662067/](http://findarticles.com/p/articles/mi_hb172/is_n5_v66/ai_n28662067/),  
accessed 15 March 2010.
- Brawne, Michael. 2003. *Architectural Thought: The Design Process and the Expectant Eye*.  
Architectural Press, an imprint of Elsevier: Oxford.
- Coyne-Jensen, C. 2008. 'Towards Embodied Visual Literacy Praxes: Drawing within experience,'  
Paper Delivered at the Visual Literacies 2nd Annual Global Conference. Oxford, England.
- Cross, N., 2001. 'Design cognition: Results from protocol and other empirical studies of  
design activity', *Design knowing and learning: Cognition in design education*, pp. 9-103.
- Davis, C. 1996. *Levinas: An Introduction*, Polity Press: Cambridge.
- Dorst, K and Cross, N. 2001. 'Creativity in the Design Process.' *Design Studies*. v. 22 no.5.  
425-437.
- Gurel, M. and Basa, I. 2004. 'The Status of Graphical Presentation in Interior/Architectural Design  
Education.' *Journal of Art and Design Education*. v. 23 n. 2. pp.192-206.
- Leach, N., 1999, *The Anaesthetics of Architecture*. MIT Press: Cambridge, Massachusetts.
- Leach, Neil ed. 1997. *Rethinking Architecture a reader in cultural theory*. Routledge.
- Pérez-Gómez, A., 2006, Questions of representation: the poetic origin of architecture, *arq*:  
*Architectural Research Quarterly*, 9(3-4), pp. 217-25.
- Rose, G. 2001. *Visual Methodologies*. Sage Publications Ltd.: London.
- Ward, G. 1997. *Teach Yourself Postmodernism*. Cox & Wyman Limited: Reading.
- Weber. R. 1990. *Basic Content Analysis 2nd ed*. Sage Publications, Inc. London.