The Cartography of Theory and Practice

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ABSTRACT

Strickler argues that the growth of visual communication as an academic discipline can only occur if there is an "empirical bridge between theory and practice" (1999: 38). Such a bridge is also a precondition for the evolution of visual communication as a forward looking and reflective industry as opposed to one that simply responds to the dictates of the market. However, building this bridge is no easy task; visually articulate and practically oriented students are reluctant to engage with theories that may challenge their passionately held understandings of design. All the more so when the commonest mode such inquiry is conducted through is reading and writing. The challenges and problems of writing for visual thinkers has been well articulated by Grow (1994). That such students are resistant to forms that they are generally not well equipped for or confident in is hardly surprising. Couple this with a seemingly near universal questioning of the relevance of theory by aspiring practitioners and it would seem the odds are stacked against such an enterprise. In this paper we will reflect upon efforts to build this bridge through design theory curriculum using visual mapping tools drawn from constructivist education theory. The efficacy of these efforts is explored through both quantitative and qualitative student feedback.

CONTEXT

The Bachelor of Design (Visual Communication), at the University of Technology Sydney, is a 4 year vocational degree. Though grounded in practice the course has a strong emphasis on theory and research, often to the annoyance of students who just want to do design. The basis of this case study is a compulsory theory subject in the second semester of second year that explores the social contexts in which visual communication is embedded. Over the 5 years we have run variations of this subject, student feedback has indicated that although the research methods taught were useful the content didn't resonate with their visual communication interests. The issue of relevance kept emerging, which indicated student anxiety about their employment prospects upon graduation. This anxiety was exacerbated by both their lack of understanding of the industry and the important subject and work experience placement choices they had to make in third year that would begin to determine where they would fit into the visual communication industry.

We designed this subject to act as a bridge from theory into the realm of visual communication practice whilst simultaneously challenging students' assumptions about it. The two key strategies used to build this bridge are the subject content, or its theory, and its exploration using visualisation / mapping techniques, or its practice. Somewhat ironically, we chose as our topic the language of visual communication practice, which is largely adjectival, because students at this stage of the course are obsessed with the visual and take for granted the rich descriptive language that surrounds it. The consequence of this is that whilst they have begun to develop a consciousness of the ideological dimensions of the visual they remain largely unaware of the ideological dimensions of this language.

I. THE STRUCTURE OF THINGS

A. How Many Pictures is a Word Worth?

"The combination of the reduction of reality and the construction of an anological space is an attainment of abstract thinking of a very high order indeed, for it enables one to discover structures that would remain unknown if not mapped." (Robinson 1982: 2)

Ramsden (2003: 39-61) argues that the key to facilitating deep learning experiences, is to accommodate student learning styles and predispositions and ensure that subject relevance is clearly articulated. With that in mind we tap into students' subjective experience as the path towards engaging with theory. Central to this approach is the idea that they are both responsible for their learning and developing the unfolding subject content. We don't deliver weekly lectures exploring the topic area in any great detail, though the relationship between language and the profession is touched upon. Rather we provide a research framework for inquiry that encourages students to investigate the role of language through an examination of the meanings of specific words in the context of visual communication practice. We teach and contextualise some basic research methods and articulate their academic and design potential. These include interviews, literature reviews, the analysis of material culture and observational work.[1] They're taught as flexible tools, to construct knowledge, guided by four framing questions. These questions can be summarised as follows and are traced through the accompanying assignments in Fig.1. Though this structure is a clearly defined linear progression, which is an

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[1] Although these methods are relevant to design practice this isn't the focus of this paper.

artificial construct, we have done this for analytical clarity in the learning process and to assist students to locate themselves in the wider context of their topic.

Framing Question	Accompanying Assignment
1) What do I know? Student's current personal knowledge, preconceptions, prejudices, experience of a topic area.	1) A series of self-reflective word and image maps exploring the relationships between the concepts and understandings they have, of their selected word, based on their experience to date.
2) What does someone else know? Wider social knowledge, prejudices and experience of a topic area including popular culture, research publications and professional knowledge.	2) A research report summarising literature, media and first hand expert accounts (eg interview with an established designer) they have examined in relation to their selected word.
3) What do I know now? Synthesis / reflection / transformation of the student's personal understanding based upon focused engagement with wider social knowledge.	3) An extended dictionary style definition of their selected word accompanied with relevant examples of visual communication.
4) What can I now imagine? Design component, what a student can conceive of – design - based upon this knowledge.	3) (Cont'd) Student designed icon best representing their selected word as they understand it from their research.

Fig. 1.   Framing questions and accompanying assignments.

B. What Do I Know ? – Mapping Experience

Hyerle (1996: 11-15) argues that the dominant western form of developing and communicating knowledge that holds sway, primarily writing, is rooted in a linear and hierarchical framework that doesn't adequately reflect the often non-linear and non-hierarchical nature of thinking and cognition. Linearity and hierarchy are not unimportant; rather they are based on specific cognitive processes and need to be supplemented by techniques that relate to and activate a broader range of cognitive processes. The underlying principal of this view is that the conceptual relationships between complex information can often be better explored through mapped visual relationships than the conventional means of making bullet point lists and writing essays. It is an approach that avoids the tendency of list making to impose hierarchical order on information, though hierarchical maps are one of the tools taught. The results in improved student comprehension and written expression using these techniques are astounding (Peresich et al, 1990; Sinatra et al 1990). Although writing is an important component of our theory subject, we have also adapted mapping for exploring conceptual and formal relationships in visual communication forms with interesting results.[2]

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[2] A detailed exploration of this approach will be the subject of a future paper.

The first assessment task, and the focus of this paper, is a self-reflective moment in which students explore their own knowledge and experience of their selected word. Against the myth of objectivity, this task values subjective experience, not just from a motivational perspective but also as a way of identifying their preconceptions and prejudice, indeed their ideological construction of their word. This task is undertaken through a sequence of visual maps. Students are taught various mapping techniques with their implications on shaping and relating to modes of thinking and analysis highlighted. These techniques are drawn from the field of constructivist education theory (see Hyerle 1996, and Sinatra et al 1990). In this form of constructivism, knowledge doesn't exist outside subjective experience waiting to be found, it is generated through inter-subjective experiences and processes. Personal knowledge and experience, subjectivity, are crucial features of how knowledge is generated thus objectivity is a concept with qualifications.

There is a substantial body of literature on mapping techniques from a variety of fields with the terminology and techniques varying considerably (see Baratta-Lorton 1977; Buzan 1994; Clarke 1991; Rico 1983; Upton et al 1961; Wandersee 1990). Sinatra (2000) recommends standardising the implementation, structures and terminology used by teachers to ensure consistency in student learning of these techniques. Hyerle (1996) goes further, having undertaken an extensive study of mapping and developing a readymade standardised system for educational use. Whilst the need for consistency at a primary and secondary level are justified it is our view that in teaching these techniques to tertiary visual communication students, such an imposition would work against their predisposition towards visual exploration and experimentation. In teaching these techniques we present them as starting points for individual interpretation and experimentation based upon a clear understanding of their underlying cognitive principles.

C. The Knowledge Dump

Students start with a word map that uses a brainstorming approach to get them to explore their relation to and experience and use of the word chosen. This covers both their general usage of the word as well as their experience of it in visual communication. There are no strongly defined rules for constructing these maps as rules impede the stream of consciousness approach required. Often rough, the patterns or associations of ideas emerge, only in part, during their making, with reflection and further refinement being required to identify them (see Fig. 2 & 3). To do this students may use any of the mapping techniques, or adaptations of them, learnt in class to more clearly identify the relationships between key and subordinate ideas. These maps are generally descriptive of student knowledge and experience of their word. The weakest maps are little more than a collection of words linked by association with poor exposition of the significance of the associations, whilst the better maps are descriptive but through reflection, and explanation of the significance of the description, they become powerful tools of analysis.

Fig. 2.   Student word map - cheesy.

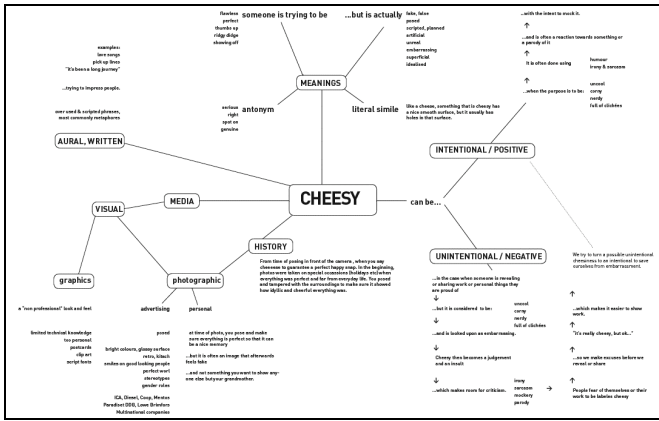Fig. 3.   Student word map - playful.

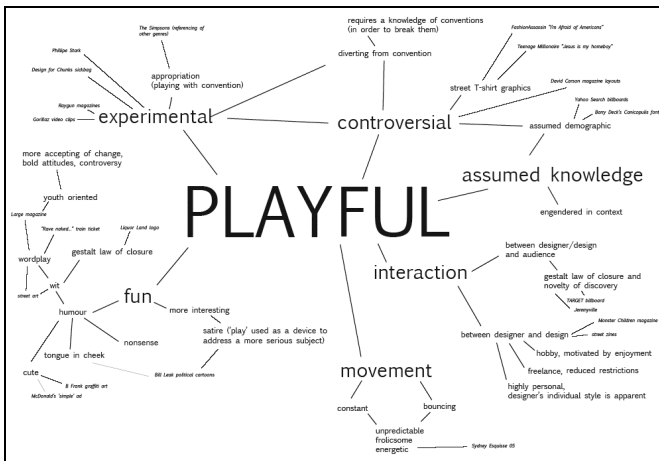
Fig. 4.   Student image map - original.

Fig. 5.   Student image map - playful.

D. Mapping Images

This mapping stage is predominantly image based. Students explore their understanding and experience of their word through visuals that they have in their possession, or are a ready part of the environments they move through. In this task the images selected often illustrate the verbal concepts articulated in map 1, but it does have a generative impact in that it also helps refine or extend these concepts. Many students use this stage to begin to group and categorise their concepts (Fig.4.) whilst identifying the connections between groupings (Fig.5.). The weakest maps produced suffer the same problems as the first maps, they are descriptive and a visual repetition of the text maps. The better maps produced, whilst descriptive and illustrative, are more analytical as a consequence of the interpretation required to translate the text map concepts into images.

The process of grouping or categorisation that students undertake at this point does cut off potential conceptual relationships established in the first maps but this is a necessary cognitive process to make the refining of concepts manageable. It is a process of establishing limits and parameters. The advantage of mapping is that each map exists as a record of prior thinking and decision making so that students, and indeed staff, can go back to earlier conceptual possibilities for alternative directions of inquiry should students find themselves in a conceptual cul de sac.
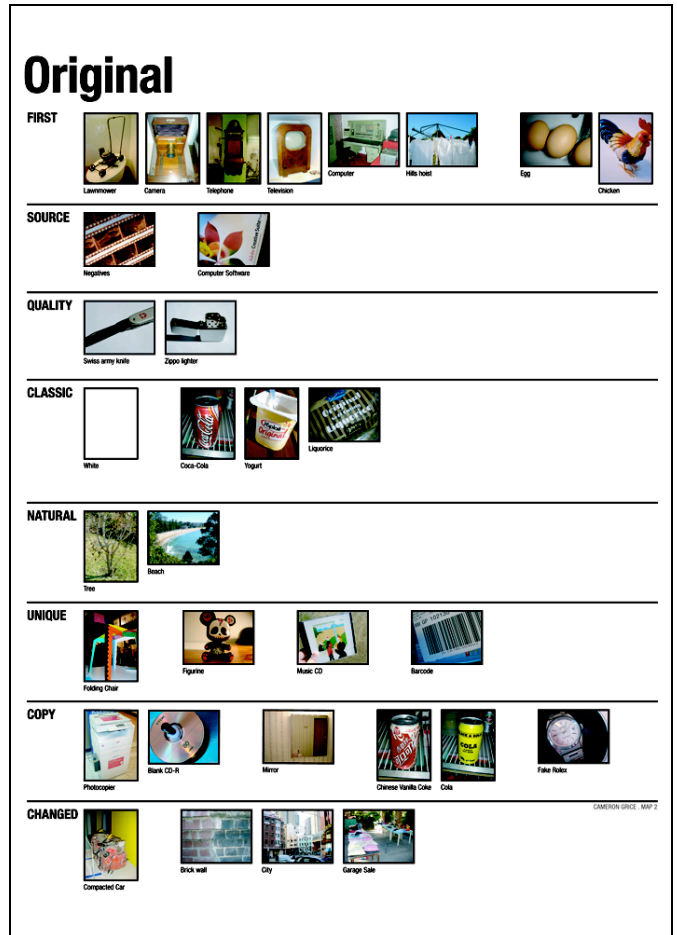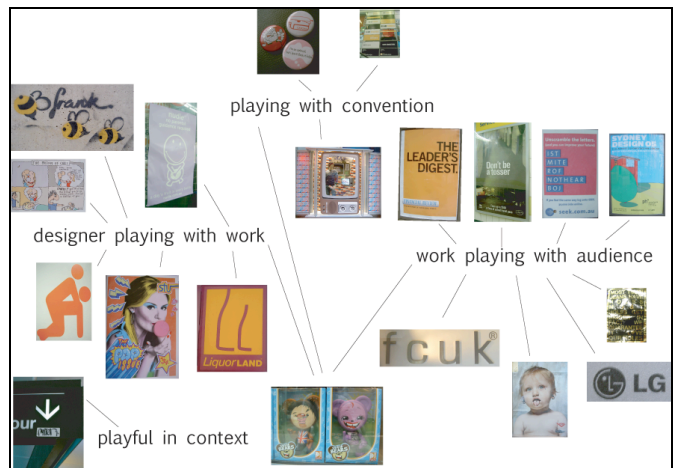
E. Synthesis Maps

The final map in this process we call a synthesis map, taking the visual and verbal knowledge developed through maps 1 and 2 and refining and reframing it through the integration of that knowledge (see Fig. 6. & 7.). These maps can simply be restatements of knowledge developed in the earlier maps but the process of refinement usually results in greater conceptual clarity at worst, or fresh insights at best. It is noteworthy that though synthesis is a feature of the techniques used at each stage, we are highlighting it for the

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final map because it becomes the refined summary of the knowledge they have generated so far. Like the first two maps the weakest of these are simply descriptive. The strongest maps describe but also analyse and interpret these things to an extent that they become generative of fresh insights or awareness of their topic.
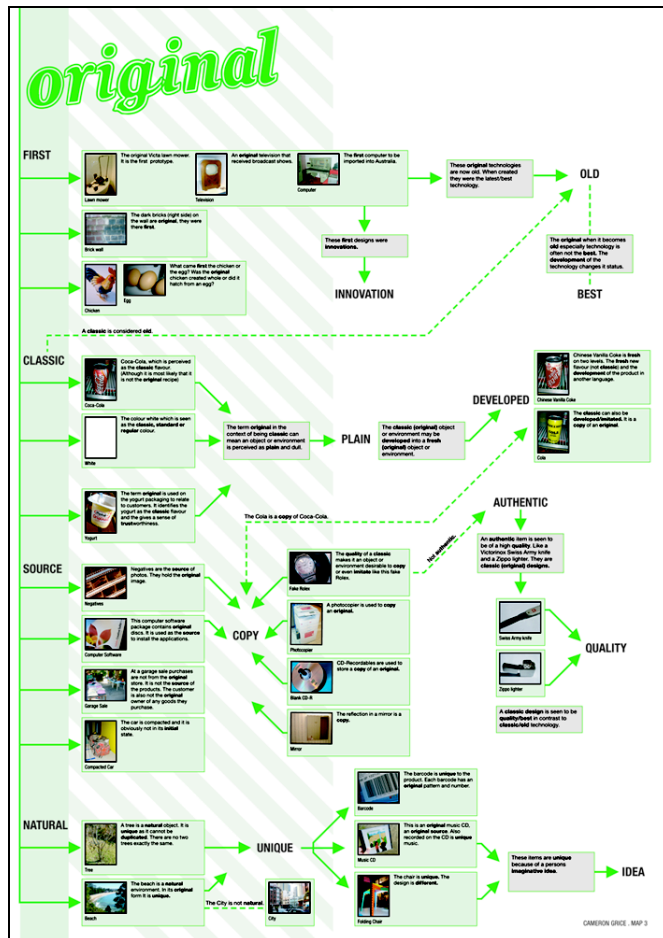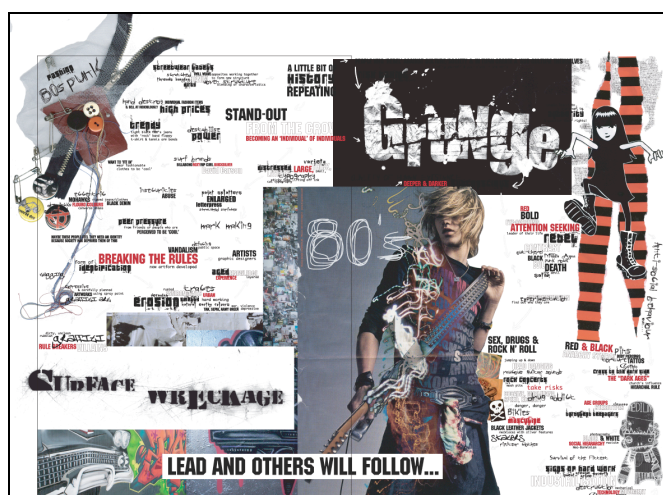

Fig. 6.   Student synthesis map - original.

Fig.7.   Student synthesis map – grunge.

Although the knowledge generated by students through the maps is highly subjective it is in essence their theory of a particular topic. The other stages of the research process we take students through, not discussed in this paper, widen the investigation of their word to encompass the experience, or theories, of design practitioners and academics. In this way students develop an understanding of the ideological dimensions of their word as well as a sense that such theory is fundamentally anecdotal and not open to cartesian validation (Love 2000: 302 & 307-308; Roxburgh 2005).

II. WHAT DID I LEARN?

A. Experiences of Mapping

Frascara (1997: 2) outlines a model of visual communication that is not a list of what it is or isn't, rather it is a multidimensional pattern or space in constant change. We now live in what we would call an age of excess, and in the context of Frascara's observation, it is an age of excessive, complex and constantly changing information. This is the environment that our students will work in as designers. In the morass of theory that students are potentially exposed to the complexity of that information is daunting. This complexity is both a problem and a potential source of hope as it lends itself to visualisation in a way that linear forms struggle with (such as lists and essays). Given this the simple device of mapping offers a way to navigate this morass. Feedback[3] from our students suggest that the approach we have developed has assisted them in thinking design in this wider context.

It is an approach that allows students to configure ideas in a way that initially overcomes the problems of grammatical structure and hierarchy and the fear of committing thoughts, in written form to paper.

- "Different (style) of learning/researching. Found it a lot more practical."
- "The new ways of researching and presenting material."
- "Helpful for my English."

Mapping is also a more playful approach that draws upon their sophisticated (visual) communication skills making it less threatening for them to engage in complex ideas.

- "Fun, critical, free, relaxed and serious at the same time."
- "Being shown new ideas of presenting theory/research - the maps. Much more enjoyable therefore I did more work than I would of if I was to do a 'normal' essay. I did really enjoy this class."
- "The emphasis is on researching and recording/presenting ideas and facts in more unconventional ways. I felt I learnt a lot and thought a lot in this subject."
- "The mapping process was a very new and very effective part of the subject."

Design students often see theory as scary or irrelevant or both. As our students' engagement with theory through this process begins with the visual they feel more confident in that engagement. They are doing so from a position of some comfort.

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[3] Written responses to the UTS subject feedback survey question "What did you particularly like in this subject?"

- "I like how it is not all theory."
- "I'm not really a fan of research! I find it boring! However, I enjoyed the maps exercise - better than having to write an essay."
- "Theoretical thoughts for design was interesting."
- "I was expecting this subject to be boring and theory based."

This engagement of theory through their visual practice in this subject strengthens the exploration and relevance of theory to their wider design practice. The mapping is a tool that is integral to their research process and enables them to firm up and clarify their ideas prior to translation into written, or indeed visual[4], form.

- "I enjoyed the combination of design and theory – the balance was great, with the former secondary to the latter. It was thought provoking and encouraged me to use parts of my brain I don't normally get to use."

For us it is also an efficient method of gaining an overview of their research and work to date. It provides an excellent presentation tool for the students to use when they have to deliver their understandings orally. During the presentations there was a marked improvement in the level of engagement with the material presented in class.

- "I found the oral presentations of the maps the best aspect of the subject. I learnt so much from the others - and was introduced to difficult topics (a broad range) which I would have never been able to read/digest the material."
- "The visual presentation of peers."

For our students there is a sense that the maps are not final but works in progress, which underlines the contingent nature of both knowledge and design. As they are familiar with presenting visuals in progress for most of their practical subjects they seem to be less anxious about committing their ideas to paper in this form compared to when doing draft essays; drafts which they may have previously felt inadequate or self conscious about.

Quantitative feedback from the student surveys also indicate that students engaged positively with the subject (Fig. 8).

My learning experiences in this subject were interesting and useful	73%
I improved my ability to think critically	74%
The mapping process is a useful tool for developing a greater understanding of the theoretical issues	79%
My research skills have improved as a result of this subject	67%
The issues raised and the skills delivered in this subject are important for a visual communicator	85%

Fig.8. Percentage of respondents who strongly agreed or agreed with the question or proposition.

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[4] The icon design task of this subject will be the basis of a future paper.

III. CONCLUSION

Traditionally, at an undergraduate level, design courses have concentrated on the role design theory can play in informing practice. This subject, through the process of visual mapping and designing an icon (the latter not dealt with in this paper), inverts this order of events by emphasising the ability of design practice, and indeed subjective experience, to inform design theory. By challenging students to interrogate the contemporary use of design language, starting with their understanding of it but progressing to practicing designers, we opened them up to an engagement with design theory in a way that seemed relevant to them. This was achieved in the first instance through the use of mapping techniques that have a strong connection to the students' emerging expertise in visual communication. Though it seems something of a contradiction, this approach provided students with an opportunity to interrogate ideas, which are strongly connected to practice, yet stand outside of the role of practicing designer, whilst drawing on their design skills to undertake that interrogation. Although the presented student feedback is largely an indication of their perception of their own learning, a heightened interest in the subject content by students, starting with the mapping, was noted by the staff members involved in teaching this subject.

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