CLUBBERS, MOSAIC THINKERS AND DESIGN PROCESS

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ABSTRACT

This paper explores the 'mosaic' thinking patterns of the current generation of undergraduates, and asks whether they demand a change in the teaching of design process. The historical quest for universally-applicable methodology is explored, together with thinking patterns peculiar to designers. The refreshing conclusion is that, with another look at our studio teaching technique, we may help this generation to show strong aptitude for design.

Keywords: Generation Y, Mosaic thinkers, design process

1   WHO ARE 'CLUBBERS & MOSAICS'?

In recent years the author feels he has detected a gradual change in the thinking patterns of the undergraduates whose design studio projects he oversees. This observation was initially ascribed to the magnitude of the generation gap, but it was then discovered that social observers & researchers acknowledge that this generation (born from about 1980 onwards) thinks in a manner which is *radically* different from its forebears. It is reasonably assumed that every generation starts out rejecting its parents' attitudes, only eventually to adopt similar thinking patterns. The prediction about the current generation is that it will not – that it is distinctly different from its predecessors – in its thinking, its behaviour, its beliefs and its value systems. An irreversible shift appears to have taken place. This is significant because, by general agreement (if not observation, e.g. popular media emphasis), this group has massive influence on shaping our culture – unquestionably 'shaping the future' in fact.

As the group following 'Generation X' [1], it has by popular consent inevitably been dubbed 'Generation Y', but other terms such as 'The Millennials' have their proponents [2]. One of the most helpfully illuminating names has been coined by George Barna of Barna Research Group Ltd; he calls them the 'Mosaics' because 'they are the first generation among whom a majority will exhibit a non-linear style of thinking – a mosaic, connect-the-dots-however-you-choose approach' [3]. Intrigued by the thinking pattern revealed here, and conjecturing that it might have some bearing on the teaching of design – particularly of aspects which appear to require some degree of linearity and logic, such as design process – the author set out to discover more.

It turns out that observers from widely different fields have commented on the characteristics of the Generation Y / Mosaic phenomenon. Some are concerned in business recruitment, some in education, some (like George Barna) with declining church attendance amongst young people. There seems to be general agreement that, whereas the previous generation was *touched* by post-modern culture, this is the first to be *fully* engaged with it. This has a number of implications for the thinking patterns we

can expect to see. Listed below are just a few key observations and conclusions which are reported to typify this generation and which might inform our interest in teaching design; they almost entirely derive from acknowledged post-modern attitudes:

- Peter Neilson [4] describes mosaic thinking as 'a collage of fragments' and cites Marshall McLuhan's assertion that this generation has "moved from left brain to right brain dominance – from sequential analysis to 'holistic pattern recognition'".
- Mark McCrindle [5] points out that previous generations were influenced by authority figures. But Mosaics know that authority did not prevent 9/11, Columbine, Madrid or 7/7. They share the post-modern rejection of any authority beyond oneself.
- Where knowledge is concerned, they are more comfortable with probabilities than with certainties, they reject absolutes and are suspicious of 'expert' views [6].
- Mosaics' non-linear approach to thinking means that 'any route to any end point is equally valid' [3].
- Previous generations relied on facts and data, and their modernist mindset laid great store by technology [5]. But Mosaics know that AIDS, for instance, has yet to succumb to technology, and whilst they depend on it to a greater extent than any previous generation, suspect that it cannot really be trusted. The camera (movie or otherwise) can portray impossibly fantastic images, so it obviously *can* lie – even though this capability is central to the appeal of much of their entertainment.
- The last point illustrates another trait: Mosaics are comfortable living with contradictions [3] and with the tension of not driving an issue to resolution. This is confusing to older generations, who seek to reconcile opposing points of view, prioritise their choices, and decide on the best option.
- Lastly, it is intriguing to discover the attention given to club culture by those seeking to understand the Mosaic generation. Looking beyond the shallow stereotype of music-sex-alcohol-drugs, Peter Neilson [4] says that 'We recognised the clubbing scene as a particular expression of post-modern urban culture…a search for … friendship that can be trusted … a modern watering hole …where people form community'.

It seemed to the author that all these findings might indeed raise some challenges in seeking to impart a sense of design process to Mosaics. It was of particular interest to understand whether such process (a) necessarily involves linearity and logic, and (b) whether it has necessarily to be conveyed as a pre-structured way of thinking (both of which, from the foregoing, would seem to be anathema to post-moderns).

2   WHAT IS DESIGN 'PROCESS'?

In choosing to make 'design process' central to the topic of this discussion, the author has perhaps made too glib an assumption that there is 'process' which *can* at all readily be identified and described. This is not a mischievous comment. A great deal has been written about this topic over the past 40-plus years, with commentators on all sides of the debate discussing not only what processes might look like, but whether they validly exist. So how are we to define *design process* – at least for current purposes?

Within the Product Design Engineering undergraduate programme on which the author teaches, he has to confess, on reflection, to having allowed a certain sloppiness of terminology to creep in. Because the students are being introduced to the process of designing products, the term *product development process* has been used rather interchangeably with *design process*. We look, for instance, at the Product Development

Process laid out some years ago by the Design Management Institute [7], largely because it forms a succinct, accessible description. This steps through the stages, from recognition of a problem or opportunity, to introduction of a product to the market. This whole sequence is helpful to novice students as a simple introduction, but goes beyond what might be regarded as core *design* activity. So it probably does not assist with the current debate – at least not in its entirety. Significantly, too, in setting things out in fairly simple fashion, it also implies a certain *sequentiality* to the whole process.

If we're dealing with generational thinking patterns, it seems reasonable to seek to explore *what it is that goes on in designers' heads when they attempt to bridge the gap between design problem and design solution*. So, for the purposes of this discussion, we might take that as the definition of *design process*.

As an undergraduate, the author was introduced to the topic of design methodology by L. Bruce Archer, who might be considered one of the patriarchs of the subject. His seminal 1965 publication *Systematic Method for Designers* [8] was one of the early attempts to construct a rational framework around what it is that designers do. At the time, with industrial design still a fairly young profession in the UK, it all seemed very sensible, not to say responsible. J. Christopher Jones' 1970 book *Design Methods* [9] carries the subtitle *seeds of human futures* – a fairly awesome mantle to lay on designers' shoulders – but demonstrating the seriousness attached to the topic.

Archer's detailed and analytical work offers, in considerable diagrammatic detail, systematic method for ensuring that 'everything is taken into account', and despite stating that 'much remains to be done' holds out the hope that such technique can 'materially assist' practising designers. But Jones, whilst conceding that Archer's thesis might be applicable to design problems that are well-defined, felt at the time that there was as yet too little understanding of the whole situation, describing his own book as 'a first attempt at understanding and describing the new design methods…'. And a few years later The Open University's *Design Methods Manual* [10] states that the methods described are 'separate design *activities* that a skilled designer will select and combine into an overall design process', and cautions against relying on any *automatic* application of them.

In the nineties, in two books familiar to many engineering design students, Stuart Pugh [11] describes a series of 'systematic procedures', a 'basic framework of design' which he claims is 'universal' and 'applicable to all of the professions concerned with designing'; Ian Wright [12] works comprehensively through a number of formal processes, but makes the point that design is 'complex', 'iterative' and 'not a neat linear activity with one well-defined task following another in predictable order' such that 'it is not surprising that all models of the design process have their limitations'.

Over this entire period – some 40 or so years – we see a number of commentators attempting to put shape around what it is that designers do. We see that both earlier (Archer [8]) and later (Pugh [11]) writers have confidently proposed a form of methodology. Others have also done so, but with the reservation that it is a complex, multi-faceted activity that defies the formulation of any single, sequential, linear 'recipe' (Cross & Roy [10], Wright [12]). Although, especially at the beginning of this period, methodologies were being proposed by reflective theorists rather than practitioners, over the years observers have increasingly relied on research into what design professionals *actually* do. This has been a major concern for the writer Bryan Lawson, who, in his long-standing book *How Designers Think* [13] concludes that there are identifiable activities in which designers commonly engage, but that not all designers use all of them, or all of the time, and that there is far from being any linear

sequence of activities which can be relied upon as a repeatable recipe for designing – very much the quest of earlier commentators.

3 SO WHAT SHOULD WE TEACH?

What can we conclude from all this? Are we any closer to understanding what design process to impart to students? The conclusion that it is certainly not a neatly pre-packaged sequence of activities may be good news for the Mosaic generation; it may be less so for hard-pressed design teachers!

Why, in any case, do we need to concentrate on the *process* we impart to design students, rather than *outcomes*? Because *process* is what they will take with them into their working lives. The author's PDE course has a history of delivering very able graduates, some of whom have taken astounding outcomes with them into their own businesses or as IP to be developed by others. But it is arguable that these outcomes actually say more about these graduates' *process* ability. Lawson [13] says that much design education may not necessarily develop the skill of reflecting on process, being more focussed on outcomes. However, within the author's course, great store is placed on the externalisation of process. We are instantly suspicious of ideas which just 'appear' without some discussion or justification!

We have seen that, in trying to understand methodologies, many commentators have, quite appropriately, studied the behaviour and practice of professional designers. And, as Lawson comments: 'implicit understanding … is generally only acquired through the repeated practice of design' [14]. Many design courses – including the author's – seek to emulate some level of professional practice. But students are *novices*; they have not had those years of 'repeated practice' to sort out what works for *them*. They cannot be expected to just adopt the methodologies of experienced professionals – even if we could distil all the many techniques into anything approaching a single system. But they do have to start somewhere – so we are left with the question, what aspect of design *process* should be taught to design *novices*. It seems to the author, both from personal professional experience, and from the observations of commentators, that there *is* a basic core of design activities which could be regarded as 'process'. The activities can be outlined as follows:

- The recognition of a problem to be solved or an opportunity to be pursued, its investigation to discover more about it, and the compilation of understanding of what a solution might be required to achieve. This is substantially left brain activity.
- The creative generation of solutions which might resolve the problem – largely right brain activity. This activity also entails embodying the solutions (in drawings, models, prototypes, etc) to a sufficient extent that they can be objectively evaluated.
- The evaluation of the possible solutions against the understanding of what they are expected to achieve to solve the problem – largely left brain activity again.

The activities are repeated until acceptable solutions are arrived at, thus forming an iterative 'module', which can, of course, be used for problems of any size.

There is some agreement between commentators that these three areas of activity form a simplistic pattern which is generally present in design work. There also appears to be agreement on naming them: Analysis – Synthesis – Evaluation (Lawson [13], Jones [9]). But there is no implication that one activity must be complete before another starts, nor that they form any kind of inflexible chronology. Common sense does suggest,

however, that there must be *some* element of chronological sequence: there must be *some* understanding of the problem before solutions can be generated, and *some* definition or representation of a solution before any evaluation can take place. Observation of designers at work, however, suggests that it is very common for activities, in part at least, to be pursued concurrently: 'thinking about solutions and thinking about problems seem inextricably interwoven' (Lawson [13]). Certainly this is borne out in the author's work, where students are encouraged, for instance, to start generating concept solutions to a design problem very soon after they have been introduced to the problem. The act of generating solutions triggers further questions to be asked about the problem, questions which might never have arisen until much later (if at all) without the stimulus of solutions. And designers frequently evaluate solutions as they generate them, of course.

So it would seem that there is a core of activities which can confidently be imparted to students as a form of process. But most designers, if they reflect on how they operate, will realise that they also engage in ways of thinking which are very particular to their profession. It turns out these thinking patterns, all mentioned by Lawson [13], have a surprisingly strong coincidence with those of the of Mosaics:

- designers can pursue several lines of thought in parallel without worrying that the whole does not make sense (a facet of 'mosaic' thinking?)
- they are at ease with lack of resolution, demonstrate willingness to live with uncertainty, and can deliberately maintain a sense of ambiguity
- they can consider a number of possibly conflicting notions and defer judgement
- they are happy to link activities in a multitude of ways to move towards resolution and, thinking of the social needs expressed by the club scene …
- they welcome design 'conversations' as shared experience

4   AND HOW SHOULD WE TEACH?

From the discussion above it would appear that, on the face of it, Mosaic thinkers should make rather good designers! But do their thinking patterns, attitudes and perspectives demand that we adjust our teaching methodology? It is worth noting that many, if not the majority, of their teachers will be from previous generations, with strongly contrasting thinking patterns!

Returning to Barna [3], we learn that, for Mosaics, reality is personal feeling and experience, not externally-imposed structure, and that 'truth is created rather than discovered' – they value building their own values and identities. Clive Beck [6] feels that there should be considerable opportunity for self-directed enquiry, with students actively involved in determining what they learn and why. However, we cannot just 'dismantle all structures and hope that something happens' – we need to avoid a mere 'pooling of ignorance'! We obviously should motivate and facilitate learning; we should create frameworks that give students the support they need to allow them significant input and control over their learning. The challenge is to balance the imposition of structure with allowing students freedom to explore.

Barna also says that Mosaics are experts at detecting a phoney; so communication with them will be 'most effective when genuine, vulnerable, honest and authentic'. Pedantic, factual, linear lectures will be least effective in getting through to them.

And what of the club scene? Can this have anything in common with the design studio? Barna says that 'conversation represents the pinnacle of the post-modern experience'. Can we replicate the sociability and sense of a 'place of safety' where students can feel free to experiment without criticism and so build confidence and creativity? Clearly

group work is of tremendous value here, and develops the teamwork ability which will be so vital to graduates. But against that is the challenge of nurturing individual ability. Even in teams, individuals have to learn to pursue their own responsibilities with self-directed confidence. The challenge is to explore the possibility of *group* effort supporting *individual* outcomes, i.e. a reversal of the usual dynamic of team work – the individual supporting and contributing to a group outcome. How could we do this?

5   CONCLUSION

It seems that, if we view 'design process' in its most expansive sense, if we minimise imposed and rigid structure, if we teach process as a minimal core of Analysis – Synthesis – Evaluation, if we offer 'background' support which will allow students to engage in directing their own learning, if we can find ways of encouraging the group to support the individual in a sociable environment, then, given the natural 'design-orientation' of Mosaic thinkers, we may stand a chance of turning out some fine designers from this fascinating generation.

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