The Loss and Disrespect of Physical and Visual Intelligence within the Australian University Sector

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Much has been researched and written concerning the interplay between the perceiver and the physical world as experience, the nexus between mind and body (Grow, undated). This research is extensive, ancient and tracks across a range of disciplines from neuro-science to philosophy, from physical education to psychology. In terms of the educational matrix, research time and again shows the overwhelming benefit gained from integrating a range of intelligences, both physical and mental. Gardner (1999) used the term 'frames of mind' when proposing his theory of multiple intelligences in 1983.

Yet predominantly, this work is concerned with early childhood and primary education, remedial health or indeed psychology. Certainly the ideas of design thinking (De Bono, Gladwell, Tufte, Chevalier) touch very heavily on the idea of integrated but multiple intelligences. Recently my research has been concentrating on ideas of physical and visual intelligence in relation to both design thinking and design education and in the context of the differences in spatial and physical perception and knowledge between indigenous and urban human beings. I examine use of visual material to explore and display the historic narrative (Newcombe, UWA thesis and exhibition, 2009). In the process, I have been searching through the published literature within a design and cultural history context and indeed there is much research to be found in these disciplines.

The other day I went to my university library looking for Howard Gardner's book *Intelligence Reframed* (1999) and started looking through the area of the library concerned with education and psychology. Much to my amazement there were endless shelves full of books dealing with ideas on play, movement, perception, manual skill education, multiple literacies, the art of seeing, ways of knowing, creativity, physical intelligence, visual intelligence, ways of learning and the intersection between the mind, body and knowledge.

Obvious questions arise out of this discovery of the riches in my library namely, why does this work almost entirely refer to and reflect on childhood education or remedial health where creativity and manual dexterity are highly prized learning outcomes? In the healthy adult

world and, in particular, the world of university education, why should creative visual application, creative playfulness, manual dexterity, multiple intelligences, the psychology and perception of performance, design thinking, and research into the physical, the vocal and the visual be considered subservient to classical text-based, network computer delivered learning outcomes? This is not to say other university disciplines do not access intelligences other than linguistic or logical-mathematical intelligences. However, the vast majority of university study, research and administration are carried out using networked computers to the exclusion of all other educational paradigms. This is an issue I will address in the body of the text.

It is important for young children to not only learn to read, write and count, but also to learn dexterity and thought by playing and doing. Much thought goes into the physical doing for children, but what about university students? Mandigo and Holt have written a magnificent investigation into the question of the loss of physical space and the importance of physical game education and playing in students using what they term Game Literacy (Mandigo and Holt). By the time a non creative arts or design student enters tertiary education, physical intelligence, visual literacies, studio creativity, phenomenology and play, in other words the planning and doing by hand and eye, no longer play a major role in their studies. Presently, they must stick primarily to reading the book and using the computer. The higher education institution they have entered is organised and run primarily by and for critical linguistic and/or logical-mathematical disciplines using networked computers as the primary communication tool.

Many other disciplines certainly use physical and visual tools, multiple literacies and manual skills in their teachings and practice, for a range of purposes and to varying degrees. However, across vast swathes of the university sector particularly in the non-scientific community, textual literacy is regarded as the primary means of learning and the only legitimate paradigm of knowledge and intellectual pursuit. Hence, the one-hour lecture and the two-hour tutorial paradigms and the vast amount of student time spent solely using computers. Creative physical studio time across the university sector is limited and seldom accessed by students outside of the creative arts and design.

De Bono delves deeply into this argument (2009, pp.113-122). He proposes creative thinking, design thinking and perceptual thinking should be taught alongside critical thinking across the university sector and I agree with him. In part this paper reflects on beneficial

results I have seen in introducing non-visual, non-creative students to studio learning environments which investigate, practice and teach across visual, physical and creative thinking intelligences.

Too often these studios and the intellectual work produced in them are perceived by the rest of the university as somehow less worthy, less academic, less intellectually rigorous than written production. The physical, creative, visual and material intelligences resulting from this work are often regarded as 'arty', remedial or leisurely and, most damagingly of all, they are generally considered of absolutely no concern to other 'more rigorous' academic disciplines. The 'newest' model of undergraduate education embraces the idea of a rounded, generalist undergraduate educational experience and learning environment, except it negates the physical, the visual or the creative in the matrix. These intelligences should not be thought of as remedial or leisurely non-core study activities, they should be thought of as vital mainstream disciplines of intelligent study.

To lay an undergraduate foundation and understanding of the use and application of these sophisticated, creative, visual and physical methodologies within the mainstream of university education, there needs to be a great deal more respect, funding, understanding, encouragement, communication and application of creative studio time across the academic cohort. Visualisation, creative processing, physical dexterity and hand-eye intelligence are all proven methodologies.

De Bono in his book *Think: Before It Is Too Late* (2009) has much to say about the neglect in working with other intelligences although he approaches these arguments through the prism of 'design thinking'. On the scientific evidence of Bleakslee and Bleakslee, Gladwell, Davis, Vedantam and others, there is little doubt about the complexity of our minds and the benefits to be gained in considering the ideas of multiple intelligences, visual and phenomenological communication and design thinking and incorporating them into policy direction and curricula for all tertiary education.

Art and design students think and produce visually and phenomenologically, most other students do not and this is where the creative and visual areas of institutions offer so much to the wider community. All intelligences need nourishment to fulfill potential. Creative art and design students need to activate the potential of their linguistic and logical-mathematical intelligences in the same way all other university students need to activate the potential of

their physical and visual intelligences.

As a grandiose and totally unsupported statement, it pretty much holds true that Australia is predominantly a visually illiterate society, and by extension Australian universities are almost blind. The visual and the physical disciplines sit a long way from the centre of university thought, planning or dynamic. There are few visual academic jobs advertised suggesting that most creative schools are sitting still and not expanding. Visual research fellowship money is scarce. Creative practice-based research is still problematic and in process, whereas the dominance of text-based, lineal, computer-dominated learning environments persist to the increasing detriment of studios and studio based learning. Most worrying of all, and this is where economics and policy come into play, by disrespecting, marginalising and closing the areas of a university that are messy and material intensive, use non-orthodox, non-classroom/lecture theatre spaces, require settled studio environments and tool-rich workshops, Australian visual/performing arts and design schools, and by extension Australian universities, are in danger of losing a great advantage held against our international competitors.

The core leadership and administration of tertiary education needs to understand and consider the arguments for including multiple intelligence learning paradigms and the studio application of visual and physical design thinking into the general undergraduate curricula. They must understand the importance of including the body and the eye when training the mind.

This is a conversation of some urgency because many of the old studio skills are being lost. The people with a range of 'non-academic' visual, material and kinesthetic knowledge can find little or no place, encouragement or gateway into the tertiary sector, or are at least finding it increasingly difficult to participate. The absurd notion that a written PhD thesis is the only form of intellectual knowledge is incredibly damaging within creative Art and Design schools. And, as a relevant qualification, they make little sense in the studio context. Visual and physical intelligence and knowledge take a lifetime of doing to master and control. To fulfill the potential of these intelligences, practitioners do not sit around writing about them, they actually physically and visually practice, research, apply and explore the potential of creative visual and physical intelligences.

These practitioners, these often poorly academically qualified professionals, have the very

studio knowledge and skills needed to create a flourishing multi-intelligence education environment. Many a workshop, kiln, print facility have already been lost or not included in programs. Areas such as Craft find it incredibly difficult to breathe and flourish within the present regimes. Universities are also missing out on a remarkable pool of research potential by making it so difficult for 'under qualified' intelligences, other than the 'qualified' linguistic, logical-mathematical intelligences to flower within research clusters.

The argument for the acceptance, integration, importance and financial advantages, visual and performing arts and design schools bring to the whole university sector has not been heard clearly. This is possibly because studios cannot be accessed on computers. So it will be as well to look closely at that most ubiquitous of university tools, and posit that the computer is creating an educational illusion and limiting much of what is now accepted as intelligence.

The computer problem works in two ways: organisationally and educationally. To take the educational first, using a computer is really a two dimensional learning environment. Physically, the machine only needs the repetitive use of a body's fingertips to work. Visually, a screen and keyboard, in other words the visual plane, are enclosed at under a meter in distance from the eyes. Colour and sight are constant. The light is artificial and digital images are two dimensional, with no phenomenology of texture, weight, bulk, smell or age.

Is this a problem? In terms of sight, observation, lateral thought and physicality it becomes a very major problem. In *Frames of Mind,* Gardener calls vision, 'spatial intelligence', (Gardner, 1999, p.42) at other times it has been called 'visual thinking' (Gardner, 1999, p.189), 'visual intelligence' or 'visual literacy' (Moore & Dwyer, 1994). De Bono calls it a component of design thinking (2009). Fig. 1 shows how limited and focused computer vision actually is. It is equivalent to viewing the world through a static telescope with no zoom focus. Fig. 2 suggests that vision without a screen becomes a much more comprehensive and complex way of experiencing the world. There is a multiplicity of views, distances and impressions.
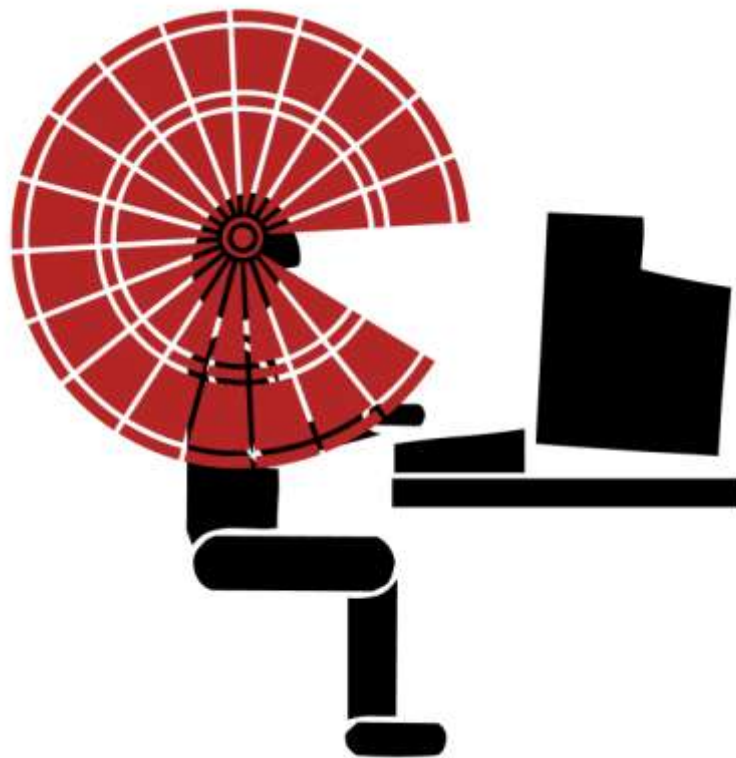
Fig. 1: The limited spatial world of the computer

Fig. 2: The wide spatial world of the studio

What becomes more interesting is if we consider what neuroscientists call peripersonal space. This is the notion that human existence does not function within the confines of the physical body but exists beyond the physical manifestation of the body (Merleau-Ponty,

1945). This peripersonal space expands exponentially if further areas are mapped in our mind (Blakeslee & Blakeslee, 2007; Davis, 2010). In terms of the computer, as a character in Neil Stevenson's wonderful novel, *Quicksilver* states 'No linear indexing system is adequate to express the multi-dimensionality of knowledge*'* (Stephenson, 2004)*.*

Garner talks about 7 intelligences and gives this definition: 'intelligences are biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture' (Gardner, 1999, p.33-4). He makes the point that intelligences are only potentials, meaning they need to be activated, nourished, guided and trained. His seven intelligences are: linguistic, logical-mathematical, musical, bodily-kinesthetic, spatial, interpersonal, and intrapersonal.

The computer is absolutely a machine of linguistic and logical-mathematical intelligence. This is why universities continue to insist on lineal assessment criteria, lineal knowledge constructs, lineal organisational systems, lineal progressions through courses and the overwhelming use of a lineal machine to both communicate and to construct knowledge. De Bono (2009) and Grow (undated) both explore this sort of organisational and institutional thinking in depth.

The increasing reliance on networked computer technology in both the organisation of universities and the speed of collection and dispersal of information, plus the movement of information from being something of great value and scarcity to being mobile, overwhelming and confusingly available are having unexpected repercussions- particularly in the structures of education. McNeely and Wolverston explore the idea that knowledge has been re-invented six times in the western canon and as they write:

> a new institution has replaced the last, reacting to sweeping transformations un-anticipated and un-accommodated by its predecessor. Each such institution has in fact superseded all its forerunners in generating entirely new rationales and practices for pursuing knowledge (McNeely and Wolverston, 2008, p.253-54).

I would therefore, caution against universities being blind to the fact that the digital world is very new and at the end of the day it is predominately a linguistic, logical-mathematical system of knowledge.

In terms of academic institutions and university education, science and the scientific experimental laboratory are both also very new additions to the academic world. It was only the work of Liebig in late 19th century Germany that brought both experimental science and the commercialisation of results into the body-politic of universities. Studio-based creative arts and design are now very much in a similar position. McNeely and Wolverston write:

> Liebig charged that traditional academics denied not only the practical value of laboratory science but its true status as a discipline reaching the highest philosophical standards. They (academics) consider chemistry as an experimental craft … useful for making soda and soap, or for manufacturing better iron and steel, but they are unacquainted with chemistry as a field of scientific research.

University professors replied, with good Humboldtian reasoning, that:

> the university must represent primarily theoretical instruction in chemistry (or any other subject) in which students of all disciplines can take part without any practical-chemical orientation to laboratory apparatus and hands-on techniques. Lectures and seminars should suffice (McNeely and Wolverston, 2008, p.220).

I have heard the same fatuous argument made in consideration of studio-based visual and physical arts and design practice and creativity.

It is abundantly clear that human beings need infinitely more nourishment than sitting at a lineal machine using limited sight and their fingertips to repetitively push various buttons. Why should this be deemed a complete intellectual education?

Musical, bodily-kinesthetic, spatial, interpersonal, and intrapersonal intelligences are also the intelligences that actually produce culture (apart from creative written culture), designed space and human experience. Society greatly identifies itself through the work of creative professionals who refuse to stop playing, exploring and creating. Yet within the university sector these multiple investigations into the creative use of the mind and body are still largely siloed away from the mainstream textual activities of the university, and are questioned and constantly under threat from those who are often visually illiterate, physically and spatially ill-educated and creatively naïve.

Students live predominantly within the matrix of computers. Their student administration is carried out digitally and online. Many of their courses are online or at least have components online, some exams and tests are also online. Students use computers as their production

tools, most often textually not visually, and the vast proportion of a student's study time is spent on the computer. Inside the university sector, the voice telling of the importance of studio-based, multi-intelligence creativity is being lost because studios live outside of the machine.

It is obvious that the argument for the recognition of multiple intelligences within university education is based on the multiplicity of intelligences within the human experience. It is not an argument about the worth of one form of intelligence over another, as is the present case with the dominance of linguistic, logical-mathematical intelligences. Rather it calls for equal acceptance, recognition, education and integration of all intelligences including physical and visual within and across university education.

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