

REFLECTIONS ON DESIGN EDUCATION

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ABSTRACT

The author reflecting on the conference theme, 'when design education and design research meet' began contemplating on thirty-one years of teaching design in Higher Education [HE], fifteen years of contributing to conference from 'SEED 1995' [1] to the present and witnessing and taking part in, often as the driver, a complete change in the manner of teaching design. During the late 1970's technological design was often taught as a component part of other subjects, intrinsic within the engineering disciplines, as such it melded with disciplines which had their roots in physics, chemistry and mathematics. However, design within the Art Colleges was seen and taught as a secular subject applied to the eclectic creative disciplines; as such it was the driver for Furniture Design, Theatre Design, and Ceramic Design etc. Design manifested itself in the 1990's within the technological arena as design engineering, industrial design, product design and in schools design technology, pushing the perceived 'major' disciplines of engineering e.g., thermo-fluid dynamics into the background, aided by a political landscape keen to adopt the creative industries as the wealth producing sector of the United Kingdom, as Julier states 'Few professions in the industrialised world have grown in terms of economic presence and cultural import as much as design has in the last two decades' [2].

Keywords: Reflection, design philosophy, knowledge economy

1 INTRODUCTION

One questions the relevance of industrial and commercial influence on design education, should it be independent of their influence i.e. learning for its own sake; or should it be research driven through collaborations with industry, commerce and other academic disciplines searching for graduate employability. Research driven might lead to new approaches in the design process, scientific in the arts, artistic in the sciences, and through international collaborations link bachelor, master and PhD education into a seamless entity allowing research and associated projects to permeate the curriculum with a dual 'top down' yet 'bottom up' paradigm, creating new styles of inclusive '3' dimensional programme delivery. This would, the author believes, synergise the teaching of design bringing together technologists and artists, although currently, not that, which government seeks. One of the major changes relative to design teaching and its resultant new identity from the practised secular discipline associated within the Art and Design Colleges of the 1960's and 1970's and the integrated science version of the same period found within the engineering disciplines is one of global design prominence. Indeed whilst Art and Design programmes have joined the University sector, moving from awarding Diploma Art & Design to BA Honours degrees, drawing into the sector large numbers of 'tiger economy' students, meanwhile design engineering has seen a decline in student numbers studying in its eclectic variants. One questions whether this change will in the long term benefit the British economy and educational system or will it return to its traditional roots and will design education return to its integrated roots with the sciences? Will Chris Smith, Culture Secretary 1998 be proved correct when stating 'The creative industries are where the growth is, where the jobs are' [3]. The question may be academic, if Peter Mandelson's vision of the 'knowledge economy' proves to be all persuasive and research is focussed in the Russell group of top twenty universities, leaving the rest to teach subjects leading to graduate employability as the main criteria.

2 BACKGROUND

Separated by administration into research or teaching active, the 'pigeon hole mentality' adopted by HE institutions for academic staff, often permeates through to curriculum development and teaching

methods. This leaves academics with many questions as to their priorities, roles etc and as many problems namely; should, design education be research driven, should the national framework for HE be linked through research or teaching and should a new curriculum paradigm be developed to integrate, separate or isolate research from learning and teaching. This paper by evaluating the historical root and base of HE, particularly in relation to design teaching and research, details the discussion and argument of these points, concluding that in the light of the paper from BIS; ‘the future of the universities in a knowledge economy’ for Product Design, integration would be the ideal way forward but pragmatically in the ‘new universities’ international and industrial collaboration not research, from which they may be excluded, will be their future. The need to research is paramount for a Product Designer, if the product is to be commercially and successfully developed. Research and the teaching of research methodologies form an intrinsic part of HE currently, the style, type and operation of such activity is open to debate. This has always been the case, during the embryonic stage of Polytechnic development discussion took place, ‘when the pursuit of knowledge for its own sake’ [4] was dismissed by those seeking a binary HE system in favour of narrowly vocational, described as the pejorative connotation, leading to ‘applied research arising from the needs of industry’ [5]. This research, which took place in Polytechnics, Technical Colleges of Advanced standing and Art and Design Colleges rarely, involved students, being carried out by individual academics in secular fashion. Universities of the time practised a holistic research activity, funded by the research councils, involving students, often in the pursuit of the next generation of researchers and research fellows and independent of industry. It is necessary to distinguish between the research modes of the design activity and the research modes carried out by academics for the pursuit of knowledge, the needs of commerce and industry or both. Resulting from this is the necessity to determine how, when and if they fit into the current ‘national framework’ for Higher Education Qualifications in England, Wales and Northern Ireland. Generically research is a taught subject at levels 4, 5 and 6 i.e. bachelor’s level, obviously being practised at 7 and 8. However, research differs widely in HE, across the disciplines, with varying degrees of student participation, levels 4-6 with academics and practising researchers at levels 7 and 8. Currently Product Design practitioners view research differently, as Charlie Sutton states; ‘You have to get rid of the preconceptions. There are few white coats and labs in our research, just hours of talking and listening to people. We make decisions based on real stories, rather than a pre-baked idea of what people need’ [6]. He portrays a very different picture to that associated with science and academia, leading one to question have the new universities due to their aspirations of greatness, expressed in their pursuit of HE acceptance, turned their backs on the traditional research model of the art and design colleges in favour of the more academic one and has this been ultimately damaging?

3 ASPIRATIONS OF GREATNESS: LEADING TO CHANGE

The term ‘academic drift’ was given prominence by Burgess and Pratt when writing of technical colleges’ desire to aspire to university status. The immediate post war period saw a rapid expansion in the area of technical education; the colleges, servicing the needs of local industry and commerce provided the students, mostly day release and evening study, with the opportunity to climb the academic ladder, by taking the nationally recognised ONC/HNC route. The colleges themselves sought to climb the academic ladder, attempting to be designated ‘Regional’ or better ‘CAT’s’ [College of Advanced Technology] and as is the nature of progress, Regionals wished to be CAT’s and CAT’s’ wished to be Universities. The ONC was a particularly successful pathway and programme; it was one of the ‘main academic innovations’ of the twentieth century [7]. It is fascinating to consider, especially in light of the recent HE changes proposed by BIS who claim ‘the post 1992 universities have confounded the sceptics, with many justifiably able to claim a badge of excellence for what they do’ [8] that the institutions, universities, of freedom, philosophy and independent governance should find innovation of curricula so difficult, yet the technical colleges under strict state control developed and expanded with apparent ease and still do, but in the near future may find research removed from their remit. The creation and operation of ONC/HNC/HND began in 1921, initiated by the Board of Education, the final phase of grouping courses into discipline specific programmes of study leading to a recognisable end, usually employment as a professional engineer in one of the many fields associated to design engineering, mining, construction, manufacturing etc. The current emphasis by BIS and HE on employability appears to turn the clock back 50 years, however, instead of part time none degree study they are targeting honours degree vocational programmes. The

discipline specific move had begun with the 1902 Education Act and given a timely boost by the 1904 Grant Regulations Statute. The driver to the success was the examination system, the creation of an examinations board at technical level, creating a recognised national award, leaving syllabus design to individual colleges. The professional institutions played a vital role of both prominence and extreme forward thinking; they would 70 years later play a more significant role in the demise of many engineering programmes with the promotion of the much debated SARTOR 2 and 3. However, in 1921 the institutions of Chemical Engineers and Mechanical Engineers set out a structure for the examination, external, of student chemists and engineers, jointly awarded by the Board of Education, curricula to be designed discretely by individual technical colleges. This successful national scheme, provides a paradigm used by HE today, namely, 'external validation of courses, created, administered and examined internally [9]. The award was most sought after, it is estimated that in 1945 50% of the country's electrical, mechanical and civil engineers were qualified to HNC level, received from a technical college. The award was supported by the Percy Report of that year, stating 'HNC being of approximately degree standard, but being based on a part-time course necessarily covers a narrower field' [10], by 1967 and the authors commencement of a five year apprenticeship, 16,000 ONC's had been awarded along with Full Technological Certificates, governed by City and Guilds of London Institute and the Diploma of Technology [Dip Tech] under the auspices of the Council for National Academic Awards [CNAA], the Diploma Art and Design [Dip AD] being awarded by the Colleges of Art and Design. So by the late 1960's the 'tradition thought to be the most venerable is actually the newer, and the tradition thought most narrow is actually the most innovative' [11].

4 THE POLYTECHNICS: EGALITARIANISM

Following the Crosland speeches of Woolwich and Lancaster, neither naming which colleges would be promoted to the new HE binary system, the Robbins Report was formulated into a white paper; 'A plan for Polytechnics and other Colleges', 1966, noting the development of the CNAA, and the loss of the CAT's to self governance it introduced the system of Universities and Polytechnics, an egalitarian HE paradigm, absorbing and morphing teacher training colleges, art and design colleges and certain technical colleges into one or the other, or in some cases neither. 1972, and the author found himself studying mechanical engineering at one such polytechnic, Trent Polytechnic, Nottingham, where the School of Engineering operated the traditional menu of courses, 'responsive to social and industrial demands' [12], from HNC through to PhD, supporting in a true sense the needs of local commerce and industry. Interesting to note that 40 years on BIS in its paper 'Higher Ambitions: the future of universities in a knowledge economy'; stated that 'although accepting that education for its own sake is a given for universities both in terms of stewardship and public trust, the government perceive as more vital the contribution the body of knowledge held within a university can make to the economy' [13], a new response, suggesting the commercialisation of knowledge'. Nottingham at that time, 1972, had seven major industrial centres, British Steel [Stanton], British Coal, Tobacco [John Player and Sons], Boots plc, Raleigh Industries Ltd, Plessey Telecommunications and Meridian Textiles, all of whom required their personnel to be trained and qualified at national recognition level to at least, HNC/Full Tech Cert for engineering or RSA stage 3 for administration. The school like most in Polytechnics was full of engineering students, however, few came into contact with the research activity directly or undertook design projects, these being left to work based initiatives. The research was mainly industry funded, universities monopolising the funding from the research bodies, and permeated their programmes indirectly through the teaching of most first year seminar and laboratory classes by post-graduate research students. Design theory also permeated the programmes in very structured syllabi, often case-study driven relative to either the requirements of the post-graduate research rigs [universities] or industrial research [polytechnics]. It was a time of 'multi-nationals' 'industry designers continued to be highly specialised, in house individuals who worked anonymously as part of a team in emulation of the engineering profession, which had made this industry its own' [14]. This was before Product Designers became household names, better known for their glitz and glamour, than good design practice and in many institutions engineering replaced by product design. However, change was imminent, Global, European and Educational, driven by a shift in cultural, political and social attitudes, the government moving to a comprehensive system of tertiary education, rapid advances in technology, the micro-chip and the polytechnics and colleges 'academic drift' due to its and its employee's and students aspiring to greatness in academic terms. In this aspiration they began to make inroads into the traditional research areas of the 'red brick' universities, often termed

civic universities, currently being told by BIS to move away from their civic and cultural role and produce research of significant impact to society at large. The first move by the polytechnics was to 'franchise' their part-time courses to the FE sector, responding to government pressure to increase student places for full-time and sandwich mode degree study. HND's and the thin sandwich followed, changing the pattern of the education system, until only full-time or thick sandwich degree programmes remained. At the same time polytechnics, Nottingham was no different, expanded post-graduate study, particularly in areas popular with overseas students, design. The polytechnic expanded its engineering portfolio; teaching was led by design and post-priori activities, establishing the paradigm of laboratory, tutorial, seminar and lecture. The analytical philosophy was followed, practising as a student engineer such that one could practice as a professional engineer in the future, as espoused by Finniston. The research activities became more integrated as the profile grew and it became the provider of many first class final year design projects, this was eventually replaced by Product Design, a design activity practiced by the Art and Design Colleges of workshop, studio and critique, driven by the need to recruit even more students to match government targets. Engineering scholars fell in line with firstly SARTOR 2 then SARTOR 3, as a result wholesale changes in the curriculum saw pure sciences and engineering gave way to vocational programmes benchmarked against employability rates, eventually closure of the school was inevitable.

5 THE UNIVERSITIES: EPISTOMOLOGISTS

After a life-time in education; infant, primary [single sex], grammar and polytechnic, a seventeen year pupillage, broken by industrial experience of only 7 years, to be followed by 31 years teaching and researching in HE, the author's contemporary image of universities is not the one embroidered at school, particularly the period at grammar school, where the masters suggested an unbroken golden age of university life that had lasted a 1000 years. Institutions of learning, learning for its own sake, origins in the manuscript driven middle ages, one scientific discovery after another; if only. Research suggests the lineage of most 1992 Universities [group 2] predates that of the 'Russell Group' and the '1994 Group' of research led institutions [group 1]. The majority of 1992 universities were Polytechnics; they themselves as already stated an amalgamation of Art and Design, Teacher Training and Technical Colleges, the technical colleges having their origins in the Mechanics Institutes of Birbeck, pre-dating the 'red bricks' by approximately 70 years. However, regardless of age the institutions are also distinct in terms of success, those who have moved into the 21st century and those that struggle for identity and purpose, mainly post 1992. For the post 1992 universities, that year really was a watershed, mainly due to admissions being made through one organisation, University and Colleges Admissions Service and the introduction of SARTOR [Standards and Routes to Oyo Registration] by the Engineering Council of the UK. The problem of 'fishing in one pool', a large pool for applicants, impinged on the post 1992 universities. The Art and Design programmes were not as severely affected by the admissions changes, as most recruited via 'Route B' after a foundation year studying Art and Design. However, the engineering programmes, post Finniston, found it not acceptable, they were asked to measure students' profile on entry, yet Polytechnics were being praised for their enhancing programmes, which took average 'A' level students and 'narrow' HNC/HND students through to 2:1 classified, accredited BEng degrees in engineering. They felt penalised for developing together with the professional bodies programmes along heuristic lines using analytical philosophy as a guiding thread through the course structure, in so doing bringing vocational studies into a fully integrated academic degree, engineering design and make projects central to all three years, known as 'engineering appreciation 1 & 2' [EA1 & EA2], third year projects taken from the industrial research projects now being undertaken by the 'new universities'. This short period was perceived for the new universities as their most successful to date, franchised HNC/HND programmes at level 4 and 5 were the feeders for degrees at level 6, feeding Masters at level 7 and at level 8 MPhil/PhD study, the tutors for the lower levels often the students on the research programmes, the research programmes providing a multitude of design and build projects, 'academic drift' was almost complete. However, the success was short lived, engineering programmes suffered as the entry requirements increased and applications to post 1992 universities declined causing for many the closure of pure engineering and mathematics programmes. Consequently, 'technology' was and is often, taught through design, usually via Product Design programmes. These new programmes had their origins in the Art and Design colleges with less structured programmes and research activity led by liberalism and individualism, conditions extremely difficult to integrate into research led

undergraduate design and build activities. This in turn has led to fragmentation of teaching with many undergraduate sandwich programmes in design, which are populated mainly by home students, being taught separately and divorced from Masters programmes and research, which are mainly populated by overseas students, academic staff in turn, tend to either research or teach, teaching either under or post graduate studies, emphasising the fractured nature of the programmes.

6 CONCLUSION

It is perceived that industrial research led teaching, played an important role in the 'new universities' curricula of the early 1990's in the fields of engineering and science, academic research plays a significant role in the older universities programmes. However, as the 'red bricks' have increased their share of research the new universities have increasingly found it difficult to maintain the status quo, particularly in engineering design. Future development of design must take into account the strategy for HE as laid down by the 'Department for Business Innovation & Skills' [BIS] in its policy document 'Higher Ambitions': the future of universities in a knowledge economy, part of the governments plans for Building Britain's Future. It is imperative that the subject area is cognisant of the role integrated research activities will play in the future funding of higher education. It is noted that;

- 1% of the world's population, housed in our leading research universities achieved 12% of the world's scientific citations in 2007-08 [15],
- the UK arts and humanities community published 33% of the world's output during 2006-08 [16],
- UK universities output £56 billion a year, 2.3% of UK GDP [17].

The report is underpinned by recommendations from other policy papers importantly 'Unleashing Aspirations': the final report of the Panel on Fair Access to the Professions, proposed and written by Alan Milburn MP [18], The Research Excellence Framework, policy consultation proposals written by, HEFCE; HEFCW; Scottish Funding Council and The Department for Employment and Learning [19], and Creative Industries Mapping Document [20]. Promoted by the secretary of state for 'BIS', Peter Mandelson, the report's foreword and summary describes the expansion of HE over the last decade, acknowledging the changes as successful. Investment in terms of monies and reform of working practices have been initiated, with a widening of participation, the government no longer fear of a brain drain. However, the report immediately asks, is that, which has been done, good enough? The report suggests not and will be asking and tasking universities to do more, any future action on this point by the universities and their individual performance results will form part of any future funding strategy. The report details the government's view that an expanded educational policy has not affected quality, claiming excellence and improvement in many areas, as cited earlier. The report stresses the HE sector must continue to widen access and sustain and improve standards against a climate of global competition, global banking crisis and constrained public spending, stressing it rejects the theory of having to choose between excellence and opportunity. Interestingly the government describes the economy as knowledge based; the creative industries replaced by STEM, science, technology, engineering and mathematics, again these disciplines will be afforded special privileges when the new funding formulas are announced. The need for partnerships is identified as of prime importance, schools will identify prior to GCSE stage students with the ability and aptitude to succeed at HE level. The policy details the strategy for sustaining and improving the research, world class and excellent, practised within higher education. It suggests that the UK as a developed nation operates at the 'knowledge frontier- we compete on knowledge; its creation, its acquisition and its transformation into commercially successful uses-although universities have a much civic, cultural and intellectual role, they are central to this process' [21]. The focus of constrained resources and research monies, probably to the 'red bricks' will result in individual universities accounting for their deliverables, consequently they may have to decide in terms of excellence between research, widening participation or innovative teaching. Universities will be tasked to audit their curricula determining the key subjects seen as prime for economic well-being, not necessarily those outlined as the 'creative industries'; institutions who cannot or do not meet the specific targets are expected to have their funding reduced providing more for those who can and do. Many old universities as well as new ones will find under the new regime that the funding for their research will no longer be found by the funding bodies. It is approximated that 80 universities face being forced to abandon post-graduate

research as funding is concentrated on centres of global excellence [22]. It is foreseeable that in many institutions 'design education and design research' will never meet.

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