

FUTURE WELLBEING: DESIGN OR POLITIC DRIVEN

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ABSTRACT

The authors are principal lecturers in product design within Higher Education [HE]; Curtis is currently a final year honours student associated with their course and two programmes of research which are being carried out pertinent to product design education participation within their institution; the results of which may provide direction to curricula development and forecasting of student profiles [applications; subject choices etc.] and subject change, and most importantly subject and programme health. The first area investigates student profiles by course, focusing on a timeline apposite to design teaching, course development and student numbers, applicable to design education within HE and the authors' institution in particular. Through analysis of the decline of design engineering and the development of eclectic product design programmes, it is deemed possible to evaluate and hence determine catalysts and agents of change. The second investigates and intends to map the changes in direction of government initiatives to Higher Education [HE]. Interestingly studies are taking place regarding the correlation of one to the other. A third area of research has recently been initiated regarding the IED conference themes, their perceived relevance to design thinking and societies 'future wellbeing'. The hypotheses of this third area proposes that by comparison of two of the three streams of research, benchmarked against the third the drivers of societal and education change will be identified i.e. government, professional institutions or HE. One question, since 1970 have HE and the professional bodies instigated change or have they adopted and changed focus and rationale, driven by the government not in a desire for 'future wellbeing' but to survive, in this specific discipline area of design; as HE itself becomes more business focused and dependent on the underpinning of internationalism. Whether this reaction means they provide programmes which affect in a positive manner the wellbeing of society or the country's economic wellbeing, or both is open to question. It is seen as timely therefore, as the educational fraternity await the outcome of the deliberations on the statutory future of Design Technology teaching in our schools that the hypotheses driving the first and second stream of research could result in a thesis proposing a method to limit the dangers, in terms of recruitment, student profiles etc. to HE institutions by a perceived slow reaction to government change.

Keywords: Design technology, curriculum, prediction, socio-economic

1 INTRODUCTION

As industry particularly European has moved from mass production through mass consumerism to mass protectionism in today's volatile financial climate, education has moved from consumer to market led and commerce from sales to marketing, resulting through government initiatives graduate numbers to increase rapidly from 8% to 50% of the eligible 18+ market. These changes have been led by various calls for the building of a creative industry, a knowledge economy and a UK dominated by design and innovation all underpinned by the teaching in schools of design technology from five (5) to fourteen (14) years of age. Commending the ability to predict change, it is interesting to note that initial analysis of the researched data suggests HE reacts quickly to government led initiatives; National Advisory Board initiative 5 monies invested in new programmes after the Polytechnics became Universities, leading to the graduation of 37 BEng Integrated Engineering students in 1993, one year after conversion, at the authors' home institution. However, the programme peaked in 1995 (99 graduates) closing in 2005 with 2 graduates. Another interesting feature of this initial research is the noticeably short life of new programmes and the 'wave' formation that accompanies recruitment and subsequently graduation. However, one is left questioning have we in the ever changing educational system genuinely altered teaching practise to foster a generation focussed on the wellbeing

of society and the wellbeing of the UK's economic future or are we focussed on 'knee jerk reactions' producing soft option schools' curriculum and soft degree programmes, neither of which will be useful to the socio-economic wellbeing of the UK and society in general. Against this it is correctly reported that 'Design Technology is the most popular non-statutory subject at GCSE, has been a compulsory part of the national curriculum since its inception and, its advocates say, is essential to Britain's economic growth. But the future of design and technology (D&T) is now under threat, according to a high-profile group of campaigners, including inventor Sir James Dyson, fashion designer Sir Paul Smith and yachtswoman Dame Ellen MacArthur, which may follow the recognised trend set by government intervention and cause damage. They fear the subject; currently compulsory between the ages of five and 14; could be relegated to an optional part of the national curriculum under the Government's review, and that too few schools recognise its value. The Design and Technology Association (DATA), which recruited the stars to its "Believe in D&T" campaign, says the English Baccalaureate has already damaged the subject. The league table measure, which requires GCSEs in English, science, mathematics, languages, and history or geography, is leading to job losses among D&T teachers, according to the association's research' [1].

2 DESIGN EDUCATION

Comparison between HE's expansion and reason d'être and that of the professional bodies provides interesting data, analysis of which suggests that whilst the professional bodies have attempted in general to occupy the high ethical ground relative to design, HE and its pedagogical thinking and forecasting has been driven and impinged upon by the administrative structures required and expanded by successive governments, using HE as one component driving the economic recovery. As such it is argued that as the professional bodies have retained their arguments within academic boundaries the consequence of their effects on wellbeing is limited; HE has been driven by practicalities and can be seen opposite to professional bodies being pragmatic and vocational in practise relative to change. It is important therefore to appreciate the impact of government legislation upon design education in the UK and the detailed changes that have affected the delivery of the subject in primary, secondary and tertiary level design education. Through consideration of the National Curriculum, HE funding and investment as well the UK economy, this paper proposes the consideration of government legislation as a driver of change in design education. As such the contemporary call for change to DT in schools is alarming for HE. Within design education and the curriculum encompassing various disciplines, UK design education comprises of a multitude of subject areas, from crafts to technical drawing, from textiles to computing, design education has taken various formats over the years. In the 1980s craft, design and technology was taught to pupils to give "the confidence and competence to identify, examine and solve practical problems" [2]. Through increased year on year development and progression, design education now focuses on developing skill levels and providing foundations for careers in the creative industries. Introduced to the National Curriculum in 1990 as a main academic subject, D&T) in schools encouraged students "to combine practical and technological skills with creative thinking to design and make real and useful products" [3]. With a pioneering, compulsory technology curriculum for young people, England and Wales encouraged and drove forward innovation by providing hands-on practical experience in order to boost creativity within the younger generation. However, in January 2011, the Secretary of State for Education announced the launch of a National Curriculum review concerning primary and secondary school national curricula. The review concerned 'slimming down' the current curriculum to encourage an autonomous teaching system, whereby teachers are given more freedom to teach subjects they deem relevant and valuable. Directed by the Department for Education, the review is set to consider the statutory status of programmes of study, putting D&T in risk of a non-statutory status. The D&T association is leading a campaign group, 'Believe in D&T', to keep the subject mandatory in schools as they believe "too few schools currently recognise the importance and value of a D&T education." [4]. The campaign, supported by pioneers of British Design, argues that an inevitable consequence of such a change will significantly impact the British design industry. Sir James Dyson believes "The teaching of quality design and technology in our schools is a vital requirement for the country's future in the 21st century" [5].

3 DESIGN WITHIN HIGHER EDUCATION

Creativity and innovation instigated in schools is built upon and developed further through HE programmes with the purpose of preparing students for the design industry. Universities across the UK

have developed a vast range of courses to utilise and invest student potential within design. UK Higher Education Institutions (HEIs) have had to react quickly to changes in both secondary and tertiary education, advances in technology and rising student expectations in order to compete in the global market. As a result of the 'Teaching and Higher Education Act 1998' [6], the government introduced tuition fees reforming the entire HE system. The main reason for these fees was for universities to continually invest in necessary areas, from new courses to maintaining modern industry-standard facilities. The continual rise in tuition fees over the past decade has meant immense pressure to ensure all courses are up to the standard required. For design-related programmes, fiercely competitive global competition makes it very important to ensure students gain the most from their university experience. Improving programmes to encourage and develop future designers is the main aim of the Multi-disciplinary Design Network (MDDN) formed in 2006 [7]. Through assessment of international design programmes, the MDDN aim to "facilitate the sharing of knowledge and best practice" and consider how multi-disciplinary design activity is being embedded in HEIs. By giving design students hands-on experience they are encouraged to develop "a sought-after mix of skills" better preparing them for work in industry after graduation [8]. As well as encouraging an advanced technological society, design education is a key driver in economic growth. Design education encourages forward-thinking, develops analytical skills and ultimately empowers innovation. For the UK to remain competitive in an international market, the MDDN supports the need for workforces "with the skills to harness design as a tool for productivity and growth" [9]. It is through experience and practise of such multi-disciplinary teams and projects at HEIs that can improve the skills of those entering into the design industry and thus support the UK economy through creativity and innovation. In the 2011 Budget Plan, Chancellor of the Exchequer George Osborne announced measures to position the UK at the forefront of the Global Economy [10]. Through reformation of current investments and focuses, Osborne is optimistic that the UK can remain "a competitive destination for businesses and foreign investors" as he proudly declared "Britain is open for Business" [11]. He expressed a real desire for the British Design Industry to drive forward a new generation of inventors and designers allowing the UK to compete in a global market as well as create new jobs; "We want the words: 'Made in Britain, Created in Britain, Designed in Britain, Invented in Britain' to drive our nation forward" [12].

4 HIGHER EDUCATION EXPANSION

It is seen that individual institutions have reacted differently to the challenges of government intervention in education over the time period under review. The authors' home institution has evolved over the years as a result of numerous amalgamations and reformations and can be dated back to 1843 [13]. In 1970 the College of Art and Design merged with the Regional Technical College and was granted polytechnic status to become known as 'Trent Polytechnic'. Polytechnics could not award their own degrees, and so awarded under the auspices of the Council for National Academic Awards (CNAA). Following the new status, a merge with Nottingham College of Education led to an official name change in 1988 when it became 'Nottingham Polytechnic'. Finally, as a result of the 'Further and Higher Education Act 1992' [14] the institution was granted university status and officially became 'Nottingham Trent University', allowing the degrees to be awarded by the institution. As with the many name changes, the University structure also adapted; departments were formed into four schools in the early 1970s to house various areas of learning, e.g., humanities, life science, engineering. As the University expanded, schools became known as faculties increasing subject diversity and were later categorised into colleges to follow a traditional collegiate system. The number of academic schools has more than doubled in the past forty years, there are currently nine [15] highlighting the rapid growth of this HEI. Within the nine schools there are hundreds of full-time/part-time and undergraduate/postgraduate programmes available. The institution has evolved greatly since its time as Trent Polytechnic where 478 students graduated in 1970. 35 years later in 2005, 8895 students graduated, highlighting significant successful growth; driven by government action in the form of statute driven reform, which the institution has embraced with enthusiasm, emerging fitter and leaner, better able to deal with current and future change.

5 DESIGN ENGINEERING PROVISION

At the start of the 1970s, engineering design at the institution consisted of Mechanical, Electrical and Production Engineering courses with Electrical and Electronic Engineering introduced a couple of years later. When introduced, these Bachelor of Science (BSc) degree programmes produced as few as

six graduates. Reflecting the increasingly visible Engineering Design Industry in Britain, these courses improved in popularity into the 1980s. Invariably they all became Bachelor of Engineering (BEng) degree programmes by 1987 to later incorporate sandwich year placements for students. In 1970 the undergraduate engineering courses produced just fewer than ten per cent of the entire institution's graduates. Figure 1 highlights the change in percentage as the polytechnic expanded into the 1980s, offering more courses in varying subject areas. When the polytechnic officially became a university in 1992, increased funding and focus on new course development led to the introduction of the Integrated Engineering programme.

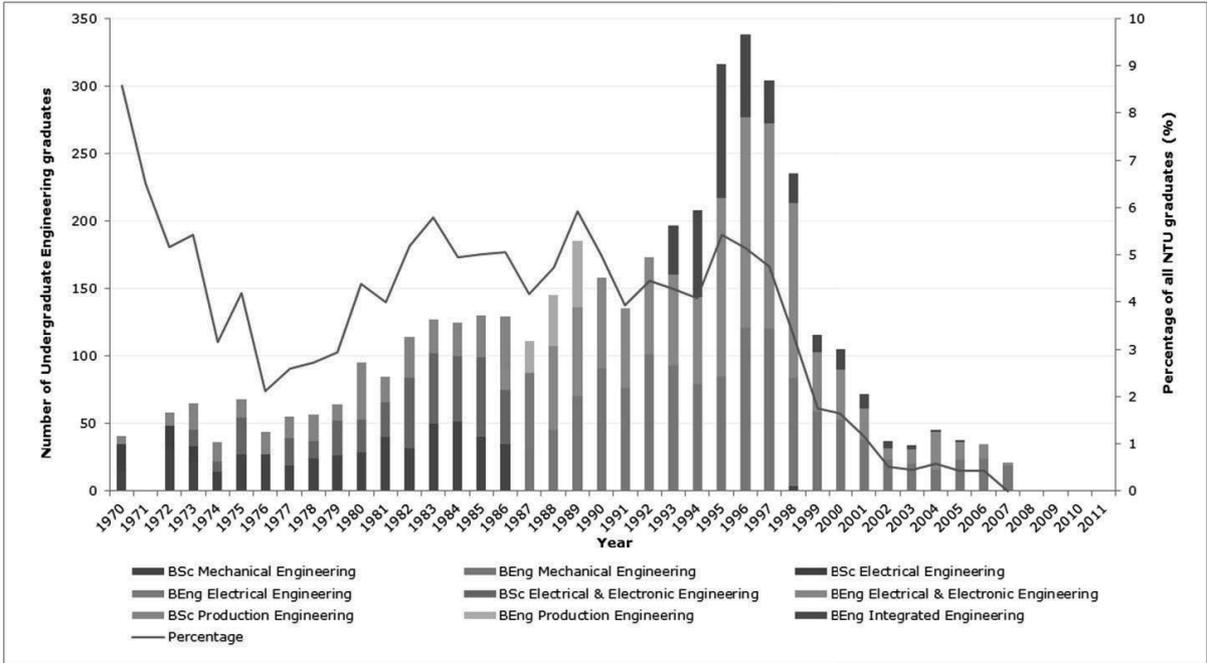


Figure 1. Stacked Column Graph to show number of NTU Mechanical Engineering Graduates

However, within a few years it was rapidly apparent, that similar to other HEIs, engineering was decreasing in popularity and as a result the University eventually discontinued the remaining undergraduate engineering courses in 2007. The transition from BSc to BEng in Mechanical Engineering can be seen in figure 2. From its introduction in 1987 with just 30 students graduating, BEng Mechanical Engineering proved to be exceedingly popular, by 1996 121 students graduated from the course. However, as with the majority of the undergraduate engineering degree programmes, it saw a sharp fall in student interest, with the course eventually terminating in 2007. With the impact of new programmes of study and the state of engineering in Britain, it was no surprise that engineering courses were proving less popular to applicants. Electrical Engineering followed a similar pattern, it was not long after its initial introduction that BSc Electrical Engineering was replaced with a more varied programme to include Electronic Engineering (1973). As with the other engineering courses, the courses then went through the BSc to BEng transition with similar results. 1995 to 1997 saw over 400 students graduating with BEng Electrical and Electronic Engineering, followed by the same rapid drop in applications to the course, resulting in a much smaller number of graduates in its final years. Researched data clearly highlights the sharp rise in Electrical and Electronic Engineering graduate numbers, particularly in the late nineties, when for four years 1995, 96, 97 and 98 encouraged by the British Council the degree was franchised to Malaysia resulting in 100 extra students per annum.

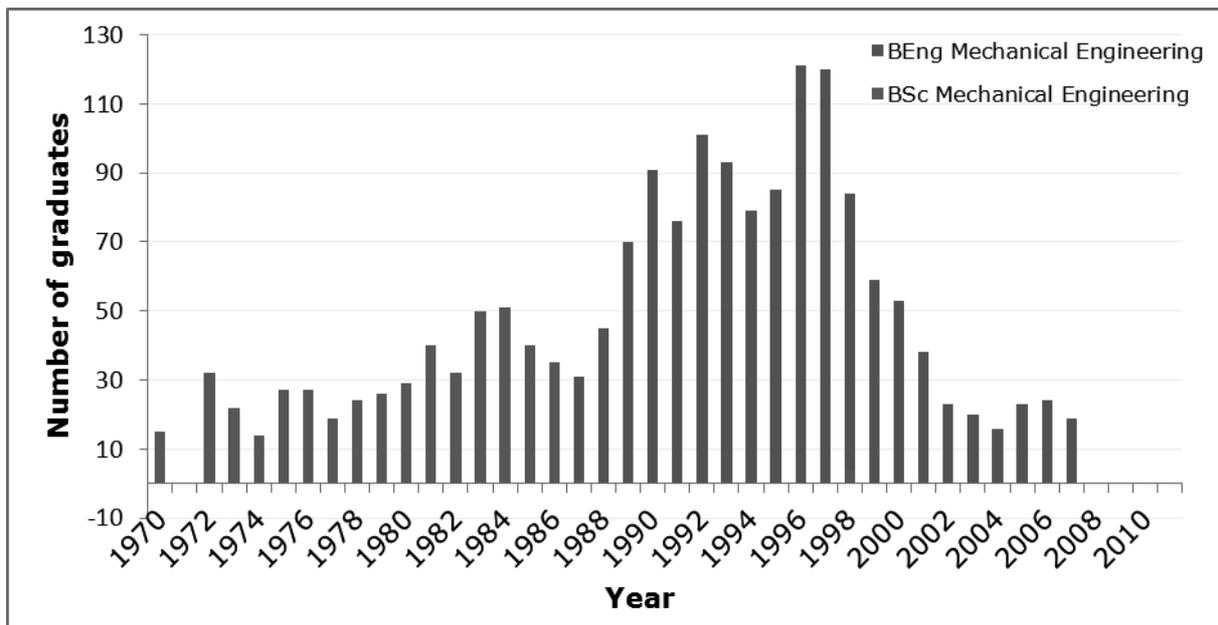


Figure 2 Stacked Column Graph to show number of NTU Mechanical Eng. Graduates

6 CONCLUSION

The pattern of introduction, rapid growth, quick decline becomes all too familiar; Production Engineering at the institution ended sooner than the other engineering courses and was discontinued just three years after becoming a BEng qualification. With comparatively fewer students than the other BEng programmes, school leaders focussed on the two most popular; Mechanical Engineering and Electrical and Electronic Engineering. However, when the polytechnic became a university, an increase in funding and the need for new courses arose. Nineteen-ninety-two saw a Bachelor of Arts (BA) in Furniture and Product Design (FAPD) introduced as a focussed and directed area of learning. The course highlighted the start of new areas of product-led engineering; areas that would continue to be investigated, considered and cultured by programme leaders, for expansion as product design became a sought after and government promoted profession. In the late nineties Britain saw an influx of new courses and programmes as a result of changes in education. With the new Labour Government in power from 1997, there came a huge focus on the 'creative industries' in Britain [16]. Tony Blair was keen to encourage the design industry and drive forward production, stating "It is through creativity and imagination that Britain will succeed in the 21st Century" [17]. This sentiment was reflected across HEIs with courses tailored to provide students with the necessary skill and experience to succeed in industry. At the authors' institution the growth and expansion of new course development was reflected through the introduction of BA/BSc Product Design, later followed by BSc Computer Aided Product Design in 2001 and 2003 respectively. The BSc Computer Aided Product Design programme followed the now predictable pattern, although successful it was short lived like the Integrated BEng and BEng Electrical. The new college structure at this time effectively facilitated collaboration between Science and Technology. This partnership allowed students to appreciate the benefits of cross-curricular learning as well as learning in a multi-disciplinary environment. A slight fall in graduate numbers was experienced from 2005 to 2009. Nonetheless, it is predicted this number will rise again as Osborne's budget plan sets to make Britain a real contender in the Global Design Market and thus the demand for designers, innovators and inventors is increased. As previously discussed education driven by government has the power to act as the driver of change in the current economic climate. With industry-standard facilities and varied Product Design courses available, the institution can provide students with the hands-on, practical learning experience to ensure they are well prepared for entering into the profession. However, government intervention at tertiary level relative to DT may affect student applications to these programmes, but the knowledge gleaned from the results of the researched data allows the institution to be pro-active, developing new initiatives and courses with which to stimulate our design schools.

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