SHAPING DESIGN GRADUATES: DEVELOPING AND ASSESSING CORE COMPETENCIES

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ABSTRACT

According to a recent survey of design consultancies and small to medium enterprises (SME's), higher education is failing to provide design students with the key skills required by industry. Many students lack the professionalism, communication skills, responsiveness, team working or the ability to multi-task. In addition, the prescribed structure and content of higher education design programmes (which often avoid multi-tasking and team projects due to time management and assessment difficulties), severely restricts the development of individual creativity or ability to work to their core competencies within a team thus attempting to replicate commercial reality. The future of design education may lie in understanding individual student competencies and streaming students within design disciplines. Product design and other creative programmes remain hugely popular with students wishing to develop their creative talent, yet academic systems do not attempt to identify students' individual strengths. Instead most curricula deliver the same material to classes, regardless of size or capability, raising the probability of producing designer clones.

This paper will aim to establish that an assessment of individual core competencies and appreciation of student motivation could enable students to be streamed and offered optional modules during their second and final year's tuition to match and strengthen their core attributes. Students could then graduate from a creative programme having equipped themselves with essential transferable skills which can be applied in any industry situation but also with a focus on individual core strengths depending on options selected. For example, Product Design (Project Management); Product Design (Communications); Product Design (Ideation) or Product Design (Business Management) could be just some of the degree routes through a design programme. This focus on personal aptitude will be more attractive to employers who are looking to replace staff or recruit graduates that can demonstrate strengths in a particular area and make a specific contribution to compliment an existing creative team.

Keywords: Aptitude, competency, transferable skills

1   INTRODUCTION

The global design landscape is changing rapidly. The threat posed by the developing continents of China and India who are nolonger content with copying western culture but are now intent on developing their own creative and innovative manufacturing cultures is placing unprecedented pressure on the future competitiveness and viability of British Design.

To remain competitive in the global design market academia and industry must collaborate to protect and nurture young design talent and improve their creative and business skills. How will Britain compete with India and China as they continue to produce tens of thousands of design graduates each year and where individual companies in the world's fasted growing economies are employing thousands in their research, design and development laboratories? A Design Council consultation document [1] has already acknowledged the need to support the creative sector by establishing the Design Skills Advisory Panel which has been tasked with making recommendations '*that will enhance the performance of UK Design*' and with the over-riding aim that '*by 2020 the UK design industry will be viewed as the global epicentre of high-value creative design and innovation*'. These recommendations will have far reaching consequences for design education in Britain.

Educators must focus on a range of transferable skills including innovation, leadership, communication, marketing and business skills if British Design is to remain the leading provider of high value, affordable creative services. Only if we achieve these aims will our design graduates be respected as world class designers and expect rewarding, well remunerated careers. There are many barriers to achieving these goals: the design curriculum in higher education is suffering from over-crowding suggesting a need for a radical review of the content being delivered in our lecture theatres and design studios. In the face of increasing globalisation and international competition for design services, educators need to familiarise themselves with the global trends threatening our design industry and we need to understand our customers better if we are to nurture their design talent to ensure that UK Design PLC remains competitive.

The author argues that some graduates of product design programmes fail to reach programme objectives or those stated in the QAA Art and Design Subject Benchmark Statement: *The primary aim of learning in Art and Design disciplines is to prepare students for professional, creative practice and to acquire knowledge and understanding of the historical context of practice in their own discipline(s), as well as to support the development of some key skills.*' Some academics would argue that even this statement fails to reflect the urgency and focus necessary for our design industry to remain competitive in the twenty first century. And that more emphasis should be placed on contemporary globalisation developments that will influence what products and services are deigned and the way we design them. The QAA statement could also be more specific in the skills which it feels are essential attributes of tomorrow designers. Research for the Design Council [2] identified that over 16,000 students graduated from higher education design courses in 2004. And the figure continues to rise, yet on average, only 6,000 design graduates secure employment in the field in which they are trained, leaving 10,000 students looking for employment elsewhere. To compound this problem, a recent government Student Satisfaction Survey across all courses identified that whilst 74% of design graduates were content with their education this figure was the lowest of any subject area measured. The issues raised include the lack of collaboration between the design industry and design education; work placements should be more widely available and that academic assignments should more closely reflect commercial design projects. For education it is the lack of cohesion with practising designers to collaborate with design education to provide students with suitable communication, commercial, innovation, leadership or managerial skills.

2   APTITUDE TESTS

The future of design education may lie in streaming students within a given programme and identifying the core competencies when they first join a higher education programme. The current educational system does not offer students opportunities to explore and develop their individual strengths. Instead the curriculum provides material that is designed to produce clones of one another where ease of assessment and student retention are often given greater emphasis than the individual needs of the student. Educators should consider assessing students against criteria which closely matches their personal attributes and core competencies. Some students are confident, people oriented communicators and best suited managing a team of creative people rather than undertaking hands-on design creation and development. This would call for a new set of assessment criteria tailored to individual students. The case for introducing aptitude and motivation tests at an early stage of the academic curriculum is becoming compelling. Courses up and down the country are simply not able to accommodate differing learning rates or styles or the personalities of new students. Many design programmes have dropped the interviewing process and now rely wholly on the academic achievement at A Level or equivalent. This is a dangerous development and one which may see enrolment numbers increase but quality decline. The interview process is a reliable method for assessing capability and aptitude and without such a mechanism there are two methods to minimise any compromise: student aptitude tests and a period at the start of the curriculum that develops student knowledge and understanding of Design to a common level. Only then should the design assignments and assessment commence.

As a recent DTi Economics paper [3] highlighted, most design programmes employ design processes in a sequential and methodical manner to the point of commoditising the design process. Ironically, design is almost always about individual creativity and values and of acquiring and applying knowledge to add value and enhance customer expectation and satisfaction. It is becoming imperative to understand the student (in the same way that any business would understand their customers) to determine what they want, what they like or dislike and how best to keep them satisfied and motivated. How can student's best work with their peers and how to get the best performance from each of them regardless of background, education or ethnicity? Testing students as they join a design programmes can be adapted to reap the benefits of increased levels of communication, innovation, teamwork and creativity. Appropriate teaching, learning and assessment mechanisms could then be employed that encourage students to be 'inquisitive, questioning, curious, persuasive and participative learners' [4].

3   COURSE CONTENT

Design industry research [5] amongst employers has revealed some tell-tale signs of the calibre of design graduates. of those employers that recruited design graduates straight from college, less than half (42%) were completely or quite satisfied with their latest recruit. design professionals have commented on the need for educators to spend more time in industry to educate themselves of the commercial realities of the industry and of the swift changes in the business environment which all designers need to embrace. again we can return to the risk factor and the readiness of staff to remove curriculum barriers to assessment and reflect the realties of the needs of the design industry and future employers. this suggests a greater emphasis should be placed on group tasks,

professionalism, creativity, communication and presentation skills, persuasion and multi-tasking.

Critically for many courses, Cox [6] identified gaps in basic marketing and business skills which often underpin core transferable competencies required in not only the discipline of product design but in nearly all other life experiences. This omission is surprising when the nature of good design is in understanding consumer needs and that many student designs have an element of intellectual property that may have some commercial value to third parties. 16,205 students graduated in 2004 from design courses and 6,745 found employment in design related activities. Design education has a bias towards the creative, hands-on role yet in reality, the discipline has many roles which are under subscribed by design education. Buyers of design, design management, commercial skills, branding, marketing and consumer research, client liaison are all inextricably linked with the design process yet few courses in Britain address these areas. Courses should be developed to bridge this gap in the design discipline.

The author interviewed several leading design agencies and identified several non-design specific core competencies that were essential attributes for design graduates – most notably the ability to present, persuade and translate the design intent to a third party and the ability to contextualise their design in a marketing and business environment. The Design Council [2005] highlights the basic skills lacked by design graduates: technical and practical skills (45%) and communication skills (42%). Wise [7] also identified a common theme of core competencies that were essential for graduating product designers to demonstrate including innovation and creativity skills; basic sketching ability; business skills; communication skills; corporate and social responsibility; strategic and financial management; marketing and branding; sustainability issues; leadership qualities; usability and consumer relationships (psychology). In contrast, Figure 1 illustrates the key skills graduating students believed were sought after by the design industry. The gap highlighted in the chart is the emphasis undergraduates give non-essential skills such as CAD (8%), modelmaking (10%) and aesthetics (8%). Paradoxically, educators devote a disproportionate amount of time mentoring these skills.
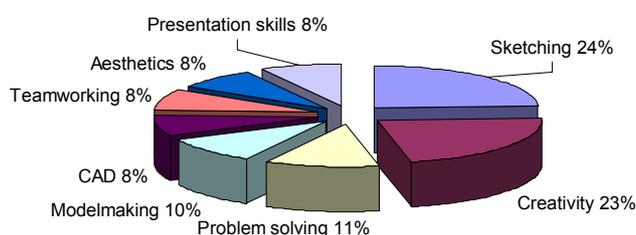

Figure 1: Core Competency Predictions

Research of design practitioners concluded that '*industry needs people who are fast, multi-taskers with good communications skills* and that are '*professiona*l' and indicated that '*the basics can sometimes be neglected and then the design process can suffer'*. Respondents felt strongly that '*if there was a course that had a back to basics approach – brainstorming, communication, idea generation, illustration, branding and market*

analysis and manufacturing awareness – this would be highly valuable to prospective design employers'. Other respondents commented: *'courses try to cover too much in too shorter period of time rather than providing students sufficient opportunity to learn and then develop their skills appropriately and repetitively.'* Some respondents reserved criticism for other aspects of courses including delivery of illustration techniques*: 'presentation techniques need to be taught better'* and on the student understanding of the design process comment: *'...it (module structure) could do with being more holistic to concentrate on actual product design the whole time - the only real time students get to put it all together is in the final project; this is too little too late'*. A study of students across all three years of a design programme identified how students are more aware of the perceived importance of core skills dependant on when they are delivered. Modelmaking and sketchwork were considered essential by first year undergraduates. Final year students on the other hand are engaged much more in research, design development and evaluation before embarking on the production of facsimile or virtual model. This instance of how a core competency changes priority from a student's perspective can be directly attributed to its location in the curriculum schedule: Table 1.

Table 1 Essential Industry Skills Comparison

	Year 1	**Year 3**
Core competency	Creativity	Sketching
	Communication	Creativity
	Sketching	Problem Solving
	Problem solving	CAD
	CAD	Model making
	Team working	Team working
	Model making	Aesthetics
	Materials knowledge	Presentation skills
	Project management	Report writing
	Aesthetics	Communication
	Networking	Marketing
	Marketing	leadership

It is vital that the course reflects the needs of industry and presents modules and core competencies in a timely and relevant manner. This has been backed up in some semi-structured interviews with undergraduate students who question why *'business skills are not taught in year one'* or *'why isn't marketing and ideation not embedded in the first year syllabus?'* Modelmaking and CAD remain high on this list despite not being core skills sought after by industry suggesting too much time and resources are committed to these areas. Alarmingly many final year students failed to acknowledge strengths in any of the following skills: finance, materials and processes, intellectual property, professionalism, corporate responsibility, risk taking, business or persuasion skills.

4   CONCLUSION

The very nature of the diversity in design enables the subject to form the foundation of a multi-disciplinary learning approach and heightened motivation in associated disciplines. Product design programmes should be structured to focus on the early stages of the research and development process [7] – understanding user needs, ideation and evaluation methods - then extended to concentrate on marketing and business

objectives, ethics, communication and persuasion skills. Incremental programme changes are possible, but a fundamental shift towards a more creative and innovative product design culture is constrained by academic bureaucracy and can take years for a programme to evolve. This paper recommends embedding aptitude testing for all undergraduates to determine their motivation, learning style and core competencies. Design programmes should embrace flexibility and accommodate personal preferences and assess students according to their personality and core strengths. Students must be given appropriate skills that are timely and relevant to enable them to contribute effectively to the needs of industry where the financial and ecological impact of their decision making are minimised and commercial and ethical values are optimised. To encourage commitment and engagement with their vocation students must be able to contextualise global design, social and cultural trends. '*Do the basics but do them well*' was the overwhelming response from industry.

All this suggests a simplification of the curriculum and assessment methods and closer alignment with industry to ensure that the students are competent at the most basic of core design industry skills. Good quality education relies on the participation of two players and if British Design is to remain competitive then students have their part to play. We need to encourage students to engage fully with the discipline, to provide feedback, feedforward, to take risks, to question consumer attitudes and display entrepreneurial aptitude – after all, they are a fee paying client.

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