

SUPPLYING THE DEMAND: ALIGNING PRODUCT DESIGN CURRICULA AND THE PROFESSIONAL PRACTICE OF DESIGN

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ABSTRACT

Much research has been conducted into the content of design curricula yet limited research has been undertaken into how early career design professionals view their undergraduate studies, and in turn if this experience adequately prepares them for entry into the design industry. Research often discusses industry expectations of design education in the context of a lack of satisfaction with the skills and knowledge of recent graduates; while design industry professionals cite the over-supply of poor quality graduates as undermining the sustainability of the industry. Yet there seems to be little engagement by industry professions into the actual content and nature of design curricula.

Building on and significantly extending prior research conducted by the authors, this paper explores the relationship between product design curricula and the professional practice of design. The authors consult with design industry employers to gain insight into both the perceptions and realities of contemporary design practice and identifies key issues that design employers feel design education are not addressing via a series of semi-structured interviews. The results of the paper provide a framework that can guide academics when developing design curricula within the UK to align to the needs of the professional practice of design.

Keywords: Product design curricula, design industry, professional practice

1 INTRODUCTION

This paper explores the relationship between undergraduate product design curricula and the professional practice of design. Within the context of UK government initiatives, which have aimed to better engage education, design professionals and the wider creative industries community. Specifically, this paper details the authors' consultation with design employers, exploring their experiences of employing design graduates. This data is used in conjunction with previous studies undertaken by the authors' consultation with undergraduate students and early career product design professionals to generate a framework of stakeholder expectations and requirements informing design curriculum development.

2 NATIONAL CONTEXT

Much research has been conducted into the content of design curricula [1,2] and calls for design graduates to not only possess high level design skills, but have a comprehensive understanding of the relationship between design and the business context in which it operates are now well established and documented. The educational implications of a changing design industry have, to a great extent, focused upon the need for design graduates to be business savvy while operating in multi-disciplinary contexts. This discourse is characterized by issues of increasing emphasis of design within commerce; multi-disciplinary design engagement; broadening the understanding and skills of tomorrow's design entrepreneurs; blurred career paths for design graduates; and the increasing demand for designers to possess complementary skills that can be applied beyond traditional design boundaries [1,2,3,4].

The ongoing discourse surrounding the appropriate development of UK design education was perhaps most significantly captured in the publication of two government sponsored reports. These reports followed a two year consultation process with both the design industry and design education. The Design Skills Advisory Panel's 'High-level skills for higher value' report [1] outlined a national plan

for skills development, and the related report 'Design Blueprint' [2] detailed the practical steps required to implement this plan. These reports set out a series of recommendations, describing the steps needed to support the development of a highly skilled and more prosperous UK design sector, engaging partners in government, education and industry.

Significantly for design education, as well as identifying challenges and opportunities for the sector, the reports identified significant gaps between the skills required by employers in the design industry and those being taught and learnt in schools, colleges and universities. The Design Blueprint [2] discussed how we might more effectively address such issues within our curriculum delivery, highlighting key topics for inclusion within curriculum development being; the strengthening of partnerships between education and industry, developing networks of visiting design professors and the joined-up promotion of multi-disciplinary approaches. Following the Design Blueprint report The Design Skills Alliance was created as a government sponsored body, and charged with coordinating support and skills development activities of schools colleges and industry to secure the design sectors position as a world leading centre for design skills and education [2]. For colleges and universities the target of the Design Skills Alliance was to set up a network of visiting design professionals, a national programme that would connect practicing designers and design managers with colleges and universities. However since these key publications' the changes in government focus and sector funding cuts have seen a limited 'role out' of the planned initiatives, particularly those aimed at engaging universities more closely with the design industry. The UK Design Council's repositioning to focus more upon strategic design interventions in public sector areas such as healthcare and the Design Alliances' emphasis upon developing school level design activities creates a 'vacuum' for Higher Education to address. It is within this context that the authors' current investigation and previous studies into student and graduate experiences aim to provide a practical framework for the development of design curricula, addressing the expectations and requirements of key stakeholders to better prepare students for the professional practice of design.

3 PREVIOUS RESEARCH STUDIES

The authors carried out a series of investigations to establish who may be considered as key stakeholders in the process of curriculum development. Key stakeholders were identified as academics, students, graduates and employers. The authors conducted studies focusing on the student experience, graduate expectations and employer expectations. In synthesising this data the paper references the authors' previous studies exploring student experiences of design education and graduate expectations of entering design practice, with additional data drawn from the authors' current study questioning employers' expectations of graduate designers.

3.1 Student experience and graduate expectations of product design education [5]

This study considered students' experience of product design education, and explored their expectations of working in the design industry. Two questionnaires were constructed and distributed to final year product design students from a number of UK degrees. It was intended that the results collected from these questionnaires would deliver intelligence into two key areas of; student views on their experiences of design education, and student expectations of entering the design industry. Findings include: Many students perceive there to be a skills gap between the level of competencies they attain while in education, and the level of core design practice skills required by employers within the design industry. It was evident that students are aware of the value of transferable skills, however the evidencing of these competencies and the opportunities within education to hone targeted skills is felt to be limited. There is a disconnection between student and industry perspectives regarding the importance of commercial awareness. Results clearly suggest that students do not consider this to be an area of high importance in relation to other skills developed as part of their design education. The opportunities for building relationships between industry and students while in education seem largely driven by project based work. This usually focuses students' attention on the design process and practical design skills. It is perhaps little wonder then that students view these skills as being the key to employability, and neglect commercial understanding or business sense as important attributes.

The key expectations of undergraduate students can be distilled as: the development of practical design skills; the synthesis of transferable skills; effective deployment of skills; developing autonomous practice and a personal design identity.

3.2 The contribution a degree makes to future design careers [6]

This study reported upon the realities of working in the design industry, exploring the extent to which undergraduate training supported the transition from designer-in-training to design professional. Questions focused the level of preparedness for design practice, the unexpected aspects of design practice and the identification of gaps in knowledge. Data was gathered via semi structured interviews with early career design product design professionals ranging from 3 to 5 years since graduation.

The responses identified the need to prepare graduates more effectively for entry into industry. For example, respondents strongly stated shock at the level of responsibility placed upon them early in their professional design career, needing to quickly adopt professional approaches to work relationships. Additionally, the speed that designers needed to operate at was something that respondents were not prepared for. Although respondents identified a number of issues they didn't feel prepared for, or even capable of undertaking, they also highlighted a number of areas where university had provided them with key experiences in preparation and support for the transition between university and the real world. Examples included problem solving skills, communication and presentation competencies, and technical awareness such as 3D CAD and digital visualization. There was an overall recognition that while your degree and tutors can provide simulated experiences of industry practice, a true recreation of these situations cannot be achieved. Additionally graduate reflections identified that there are aspects of design practice that you simply can only learn 'on the job' and that the journey from university to practice is indeed a transitional experience.

4 DESIGN INDUSTRY PERSPECTIVES

This study forms the major empirical component of this paper exploring the relationship between product design curricula and the professional practice of design. Specifically the authors consulted with design industry employers to ascertain perceptions and realities of employing graduate designers with the intention of identifying key issues that design employers feel design education are not currently addressing. Design employers from leading UK design companies were consulted via semi structured interviews. Questions explored how product design curricula can be aligned with professional practice. The questions focused on five key areas: What is the ideal graduate skill set? What do graduates lack? What relationships are you looking for with design educators? What changes do you observe after you employ graduates? What is the most important issue(s) that design education should be addressing?

All the interviewees questioned were highly experienced in recruiting design graduates over a number of years. A broad range of responses were generated and although some common themes emerged, the individual experiences of those questioned provided a rich and diverse set of results. Section 4.1-4.5 detail responses and provide evidence from the respondents in respect of their views and reflections.

4.1 What is the ideal graduate skill set?

Respondents identified arrange of skills that would form the ideal graduate skill set yet a 'creative all rounder' was deemed to be common theme. This multifaceted individual needs to have the 'usual' practical design skills but in addition the ideal graduate needs skills in design research complemented with the ability to think strategically and act creatively. One respondent noted that the ideal graduate would have '50% creativity but the other 50% relates to their attitude. They need to be a real team player. This is a must have and if often the deal breaker when recruiting a graduate'. Respondents also identified the need for general intelligence being a key criteria. This was deemed to be important as graduates will be engaging with other people – both within the organisation and with clients. Others identified the need for good communication skills – not in terms of visual skills as this was deemed to be a given but non-design communication skills and the ability 'to get on with people'. While respondents noted that excellent design skills were essential, this was deemed to be a given and without this graduates would not even be considered. What was interesting in the answers put forward was the need for more non-design skills that would complement their design acumen. This includes communication, team working, willingness to take responsibility, a general 'wherewithal' about life and people, and also the ability to take criticism in a mature and non-personal manner. As one respondent stated, 'even the best designers have to be able to take criticism because clients will never like everything you do'. Respondents did note that the above represents the ideal skill set and it was unlikely that all graduates would score highly in all areas. There was an acceptance that on top of the

excellent design skill baseline, more general skills and awareness – combined with the ability to fit into a team – could be deal breakers and tip the balance in favour of one graduate above another.

4.2 What do graduates lack?

Our research identified a number of areas that employers feel graduates are lacking in. The ability to visually communicate effectively is often expressed as being highly desirable yet this was noted as lacking in many graduates. The ability to sketch in 3D was noted as being representative for a number of other design skills - 'a signpost to other things of a being a good and effective designer'. Drawing was deemed to be a skill that is still required day-to-day and, as one respondent stated, 'drawing makes the design process "live" to the clients and they love it!' The ability to use research data, translate it to churn out lots of ideas but then also be able to self select and filter was lacking in some graduates. Employers are looking for designers who can not only collect research data but use it as a trigger for design activity. One respondent discussed the ideal approach: 'What designers should really be doing is making sense of information that comes from a diverse range of fields and drawing all of that together into a concise statement or proposition or object or experience'.

Knowledge of design practice is desirable but really this is less about degree curricula and more about the individuals demonstrating the desire to go out and get the experience. Some respondents felt that if while studying, students were willing to negotiate work placements/internships under their own steam, this 'says a lot about them' and helped to instil confidence that such individuals will be able to undertake tasks under their own volition. Unfortunately such a proactive approach was often lacking in graduates and their real world experience was driven by tutors and existing connections with universities. Finally the level of business knowledge is generally low. Students are often taught underlying concepts of the design industry but respondents felt that a general understanding of the business world was lacking (as well as general knowledge and non-design intelligence).

4.3 What relationships are you looking for with design educators?

The nature of existing relationships between design educators and the design industry varied greatly within the respondents. Relationships ranged from close relationships that have developed over years to little or often no formal relationship with design educators. Where existing relationships were evident this was often in the form of teaching through visiting lectures and/or tutoring of projects. One respondent felt that 'teaching is a good relationship and even though you are being paid for your time an effort, it feels like you are giving something back and investing in education'. What was clear was that there was a distinct lack of formal or well developed education-industry relationships and where these were evident, this has often developed organically rather than through any formal or organised approach. The opportunity to offer work placements to the 'best' students was something that many industry respondents felt was effective, particularly with tutor involvement in the selection process as academic staff are often aware of the specific abilities of their students. Again, there was no formal mechanism to facilitate this process.

4.4 What changes do you observe after you employ graduates?

The majority of respondents were complementary about academic staff and their awareness of industry practices. This can in part be attributed to the industry background that many design tutors have – their other life 'BC' (Before College). In essence 'the stuff your tutors tell you is real and does actually happen'. The way that individual graduates develop after entering industry really depends upon the nature of the projects they work on, as this provides them with real-world experience that can never be emulated within an educational setting. It is often a steep learning curve for graduates where timescales are hugely compressed, critiques (from clients) can be brutal, and the need to engage with multiple tasks concurrently is the norm. Some graduates take this in their stride while others struggle to keep all of these new balls in the air. As one respondent asserts, 'its a trickle of trust which develops over time but you know very quickly, usually within a few weeks if they are going to work out'.

4.5 What is the most important issue(s) that design education should be addressing?

As has been noted by designers for many years, there is a perception that the general quality of graduates is getting lower. This is in part due to the fact that there are simply more of them but the number who are really talented enough to 'make it in design' is about the same. One respondent succinctly captures the situation thus 'more students, more course but no-more good people'. This

means that the filtering process is harder than it used to be, it takes longer, and is likely to include some unsuccessful hires. Respondents noted that in recent years, in part due to the democratisation of industry standard 3D visualisation software, desktop publishing and low cost large format printing, graduate shows are also much more slick and often flattens the individuals' ability to stand out and show off their particular talent or area of excellence – put simply – 'it is so difficult to spot good graduates even at design shows now'. Employers stated that the personal motivation seems lacking in many students. Discussions identified that this may be related to modular degrees and it was felt that the marking system does not help this. The actual degree award graduates achieve was not necessarily important to prospective employers yet the institution that the students graduate from was important. Respondents felt that design education should encourage students to be ambitious, take risks and try things out that they won't get the opportunity to do when working in industry. The authors did note that some respondents do look back at their design education and expect that many years later things are the same. What respondents do not necessarily acknowledge or understand are the pressures academic face in HEIs and as a consequence often think that academic are not 'getting the best out of students and pushing them enough'. As many senior designers studied in the non-modular old art school system their understanding of the contemporary higher education landscape is often limited.

4.6 Discussion

Our study has reinforced that academia and industry have different agendas and don't necessarily have the opportunity to discuss their respective positions in a meaningful way. Employers feel that the quality of graduates on the whole has dropped while academics and HEIs face the need to ensure that degrees are viable from a financial perspective and as such need to recruit a certain number of students annually. Overall student numbers in product design have increased since many of the senior designers who are responsible for hiring graduates were students themselves. Communication between industry and academia is at best ad hoc and at worst non-existent. There are little formalised communication channels between these stakeholders. It is not unusual for academic staff to connect with former colleagues and/or employers to build a network of industry contacts. Non-design skills were identified as important to differentiating between prospective graduate hires. Respondents are looking for graduates with an ability to fit into the team, have common sense and a general ability to get the job done without causing too many ripples. This emerged as an unexpected finding within our research.

5 A FRAMEWORK FOR DEVELOPING DESIGN CURRICULA

The framework (see figure 1) identifies key stakeholders, linking them via identified requirements and expectations. The framework places the academic institution in the central role of facilitator, unifying their individual requirements. This closed loop model provides the opportunity for sustainable dialogue and interaction between stakeholders in the continuous development of design curricula.

6 CONCLUDING REMARKS

The paper has drawn together work conducted by the authors concerning the relationship between design curricula, student experiences, graduate expectations, and design industry experiences of employing design graduates. Commentators often discuss industry expectations of design education in the context of a lack of satisfaction with the skills and knowledge of recent graduates; while design industry professionals cite the over-supply of poor quality graduates as undermining the sustainability of the industry. Yet there seems to be little engagement by industry professions into the actual content and nature of design curricula. Design employers are often critical of educators as they feel they are out of touch with contemporary industry trends and want graduates to be the finished article upon graduation, yet they are often unwilling to engage with universities in a meaningful way to provide a 'real-world' perspective. Our research has revealed that tensions currently exist and it is unlikely that an easy answer will emerge without determination and effort from all stakeholders.

What is also evident is that all industry respondents do not share the same view on all issues raised. This is to be expected particularly in light of the diversity and evolving nature of the product design industry. Gone are the days of a homogenised product design and development approach (if this ever existed!) and in its place is a multilayered, multifaceted, multimodal eco-system that demands many different things from graduates. Once this has been accepted by stakeholders, the challenge is to develop curricula that is on one hand niche while on the other provides a broad educational experience, one that can be applicable to a broad range of graduate destinations and industry sectors.

As our research has indicated that there is a need to develop mutually beneficial ways of engagement between academia and the professional practice of design, the authors have presented a framework for developing design curricula that can guide academics when developing design curricula within the UK to align to the needs of the professional practice of design. It identified the stakeholders in this eco-system – students, graduates, employers and design academics, unifying the respective positions and relationships of the stakeholders within this eco-system. The lack of formal communication mechanisms between academia and industry underscores a somewhat fragile relationship, relying on informal relationships to ensure effective dialogue. The expectations that industry places upon academia is to an extent unrealistic as academics do work to different timescales that often don't mesh effectively with commercial demands. While there is a need for a healthy discourse between all stakeholders in this eco-system, an acknowledgement of the various contributions of students, graduates, employers and academics needs to be more evident to enable mutually beneficial relationships. In doing so the authors believe that their framework can assist stakeholders in the identification of requirements and go part way to aligning common factors in an attempt to 'bridge the gap' between design education and design practice.

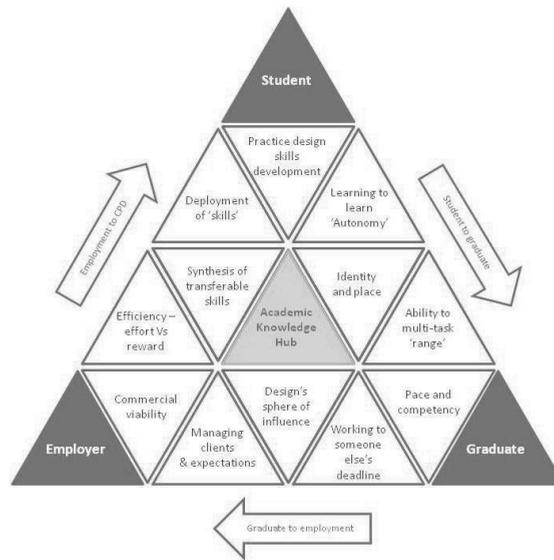


Figure 1. Framework for developing design curricula

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