

# FRACTURES IN THE FACULTY: THE STATE OF SUSTAINABLE DESIGN TEACHING IN THE UK

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## ABSTRACT

Design is integral to the UK economy, and with the rise of service design and design thinking has also become a means of addressing society's greatest challenges – such as social and environmental sustainability. Design education is under pressure however, and there is an apparent disconnect between the concerns of young people and the 'real' world, and the traditional preoccupations of design courses: creating and selling more stuff. This study was conducted in collaboration with the Royal Society of Art's Student Design Awards (SDA). 55 staff were surveyed and a further 13 staff and 8 students interviewed from 32 design faculties across the UK, to gain a comprehensive picture of sustainability as taught in a variety of courses. We found that when staff were given support and autonomy, with sustainability embedded in marking criteria, they were able to integrate it in their teaching with very successful results. On the other hand, if staff had a poor appreciation of sustainable design, saw it as a cost or hassle and lacked support from industry or management, it was less likely to feature in the courses. The divide between those who saw design as primarily about making things and those who saw it as a means to address systemic and behavioural problems in society was striking, as was the impact that individual staff could make through their own passion and tenacity. Although design was seen as key to future global innovation, external pressures like finance played a significant role in influencing the topics taught.

*Keywords: Sustainability, higher education, design*

## 1 INTRODUCTION

The UK has the second largest design sector in the world[1], and as of 2015 the design economy generated £71.7bn or 7.2% of total UK GVA[2]. Design is increasingly viewed as a process not only to increase economic wealth but also to address some of society's greatest challenges. The concept of design as a tool for developing more sustainable ways of living and interacting is gaining traction, and increasingly the process of design itself is being scrutinised, its impacts measured and its value re-examined.

As of 2013 there were 847 design courses in the UK[1], and this research explores sustainable design teaching in a selection of universities across the UK: what is working well, and what is preventing it from working better? It is hoped the findings can inform and support university departments to learn from each other and enable the RSA to play a leading role in facilitating progress towards sustainable design education and ultimately practice.

### 1.1 Sustainability in Design

The remit and boundaries of design in the 21<sup>st</sup> century are changing. We are seeing the rise of the digital economy, growth in mixed media and cross-disciplinary practice, increased engagement with social or political agendas and a return to making[3]. Increasingly, designers are using their skills and methods to tackle complex challenges of sustainability such as climate change, biodiversity loss or health and wellbeing, with traditional 'linear' design briefs focused on purely economic or human requirements no longer deemed adequate for addressing interconnected global issues[4][5]. With the potential to influence consumption behaviours and product lifecycles, designers are cited as key players in the necessary transition to a more sustainable world [6] and a circular economy[7][8]. Some trends in particular seem to align with or facilitate sustainability, as designers shift from focusing

solely on physical objects and start to work with contexts, processes and systems. According to Brass and Mazzarella, designers ‘must be trained to create the ‘hard’ (places, facilities, equipment, technology) as well as the ‘soft’ (network, people and relationships) infrastructure for encouraging such systemic changes.[5]’

The shift in focus of design from stuff to relationships is driving a need for skills not previously associated with design –for instance strategy, communication, facilitation, systems thinking, data visualisation and digital innovation. As a result, designers are finding themselves in demand from new industry sectors like public services for their ‘design thinking’ skills: their ability to solve problems creatively, to empathise with a wide range of ‘users’ and to iterate in order to achieve the most appropriate and beneficial outcome. One of the youngest of all design fields, service design is now a widely recognised and sought-after discipline, with practical examples of its application to social and systemic challenges in business and policymaking[9]. Evolving concepts such as Transition design[10], Metadesign and ‘O’ shaped design[5] likewise emphasise the interconnectedness of human and natural systems, and advocate a new approach to our understanding of design disciplines and teaching.

## **1.2 The problem with design education**

Some voices argue that design practice is outperforming education and research when it comes to new design paradigms, and that educational establishments must move more quickly to prevent themselves being left behind[3]. A 2015 UK report by Lara Furniss on Design Practice and Design Education in the 21<sup>st</sup> Century conveyed an ‘overwhelming response that the current undergraduate design education system is in crisis’[3]. In summary, Furniss found that current systems were outdated, the Government’s STEM agenda had negatively impacted creative subjects in schools and an ever-increasing emphasis on research league tables and finance had compromised university teaching. Moreover design degrees were undervalued by industry, specialisms were no longer relevant and there was a lack of consensus on the meaning of design itself.

Although one 2009 survey suggested that the teaching of sustainability in design courses was widespread and growing[11], it has also been pointed out that sustainable design knowledge is not mandatory for professionals, with many considering it an optional add-on, and nor does it form part of design education guidelines[7]. The key problem, according to one professor, is ‘a fundamental shortage of incisive thinking in academia that challenges, at a creative, joined-up and practical level, the deep assumptions behind the way we live’. Facing budget cuts and existential crises, faculties are perhaps more than ever in thrall to the economic demands of the time, the expectations to provide students with skills that will get them a job, industry with employees that will swell their bottom line and government with industries that will grow the economy. These issues are also highlighted by Micklethwaite and Chick, who criticize the design community for seeing political, environmental and social concerns as outside their remit: ‘this status quo has been upheld by a design education system primarily concerned with training future designers for the business of designing and selling ‘stuff’[12]. Other commentators support this assessment of a disconnect between what is taught in design colleges and faculties and what’s going on in the ‘real world’[13][3].

## **2 METHOD**

This research was undertaken in conjunction with the Student Design Awards (SDAs) at the RSA (Royal Society for the encouragement of Arts, Manufactures and Commerce), with the data collected between January and May 2016. A survey was distributed to around 500 design staff at schools and universities across the UK via the SDA mailing list, to gather their experiences and perspective on the SDAs, the state of sustainability in design education and the recent RSA project The Great Recovery, which looked at the challenges of waste and the opportunities of moving to a circular economy through the lens of design. From those contacted, 55 design staff from 32 UK universities took part and 13 staff and eight students from these universities were interviewed in more depth over the telephone. The staff invited for interview were selected in consultation with the RSA as representing those with particular experience of teaching sustainability in design. The students selected were from the winning cohort of two sustainability-related 2016 SDA design briefs, ‘Waste Not, Want Not’ and ‘One Man’s Waste,’ which asked students to design ways to encourage people to reduce food waste and to design a way to help eliminate the concept of waste, respectively. Quotes from staff and students have been made anonymous in order to protect the sources. The sample selection is therefore not randomised but weighted towards staff, students and design faculties that have already

demonstrated some commitment to using design approaches to solving societal challenges, including sustainability challenges. As a result it may be argued that the views expressed about the success factors and barriers in delivering challenge-based sustainable design education are well considered and based in practical experience, though of course it should be noted that interpretations of sustainability will vary widely between individuals and faculties.

### 3 CURRENT STATE OF PLAY

#### 3.1 What's working?

Our survey showed that the emphasis on sustainability across all design courses has increased over the last 10 years, and over 60% of courses do at least teach some principles or theory (see Figure 1).

When staff were given flexibility and autonomy, for instance to set their own objectives or run their own courses, had a supportive management and university culture, constructive relationships with industry and sustainability embedded in marking criteria, they were able to integrate it in their teaching with very successful results for students. Several reported the value of having freedom to refresh course content when necessary and keep it up to date with current thinking and practice, whilst being able to incorporate their own research enabled them to share their passions with the students. 'I see them getting visibly really upset about things,' said one staff member. 'That's good – I don't want to make them cry but they need to be engaged.' The importance of bringing in external speakers to complement and lend more weight to course content was also emphasised by both staff and students.

Incorporating sustainable design into the compulsory modules of a course, and even introducing it into exam criteria, proved critical to its uptake and integration. One Dundee student hadn't even considered sustainability in her textiles work 'until they made us' in the third year – and then all of her final projects had sustainable design literally woven into them.

Those departments which had established strong relationships with business and industry and were working together with them on sustainability projects were able to prove to students its application in the 'real' world and help them to appreciate its importance. Northumbria, for instance, work with global giants Unilever and Philips, whilst the Sustainable Design Competition at Ravensbourne in collaboration with M&S provided the opportunity of working on a live brief and resulted in a paid 6-month placement at the company.

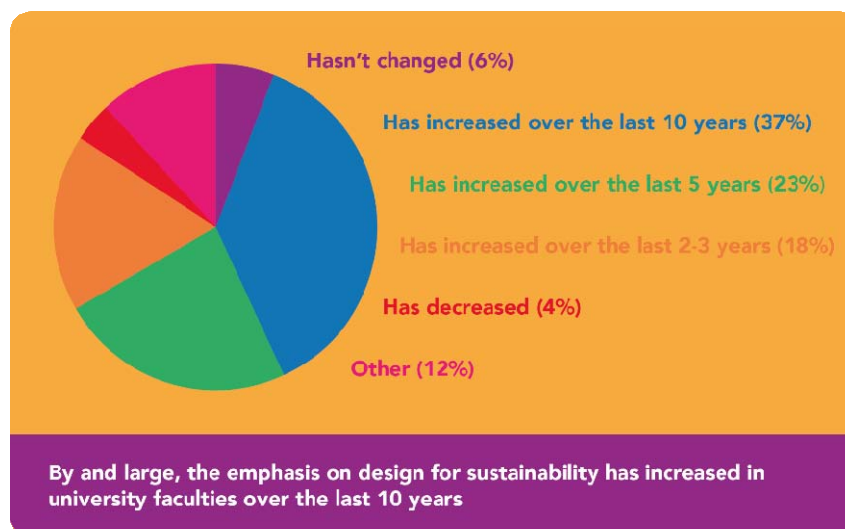


Figure 1. Emphasis on design for sustainability over 10 years

In summary:

- Staff have flexibility and autonomy
- University culture and management are supportive
- Sustainability is compulsory and integrated in the course
- Strong relationships with sustainable businesses

### 3.2 The Barriers

On the flip side, almost half of staff said that there wasn't enough emphasis on design for sustainability in their course (see Fig. 2), with the main barriers being (lack of) staff awareness, time, teaching skills, materials and industry demand.

Many staff reportedly either don't 'believe' in or just don't 'get' sustainability, are overwhelmed by its complexity and that of associated concepts like systems thinking, or simply don't see that it has any relevance to the discipline of design that they teach. And even in places where staff did seem to have a good grasp of the subject, assumptions got in the way of institutional learning and, as one interviewee put it, 'the depth and the connections and the systems approach are missing'.

The term 'sustainability' itself was repeatedly identified as problematic, with staff and students alike frustrated by its lack of specificity and application: 'it's not cool or sexy', said one, whilst another referred to it as 'limp and ambiguous'. Research also showed wide variation in the way in which it was structurally included in courses, with many leaving it to elective modules or only introducing it in the second or third year, with the result that it was seen as an 'add on' or a 'fashion' by other staff in the department.

Several interviewees cited bureaucracy and the pressure on university budgets and staff time as making the introduction of new elements such as sustainability more difficult, with very little in the way of support or incentives. Even more striking was the vacuum of vision and leadership in some faculties: 'it's not coming down from senior management and therefore isn't embedded in our curriculum, despite the literature saying that it is!' For some more research-focused departments sustainability was a new and apparently nebulous topic which carried less weight in government assessments than more traditional, empirical subjects, and was therefore less likely to lead to academic publication, peer review and ultimately career progression.

The attitudes of business and industry moreover were seen as a key barrier: other than a few stand-out examples, most businesses are yet to realise the value of sustainability in their organisations. 'We have to be designing a curriculum fit for 2019 and beyond,' said one staff member, 'and if people from industry say 'this isn't part of our business plan' it's difficult to overcome that inertia.'

Finally, several interviewees cited the difficulty of overcoming traditional attitudes or ingrained perceptions of what design actually is, and therefore how it should be taught. Many design staff by all accounts feel that sustainability is not a traditional concern for designers; it is too theoretical, and they should be teaching practical making skills first and foremost.

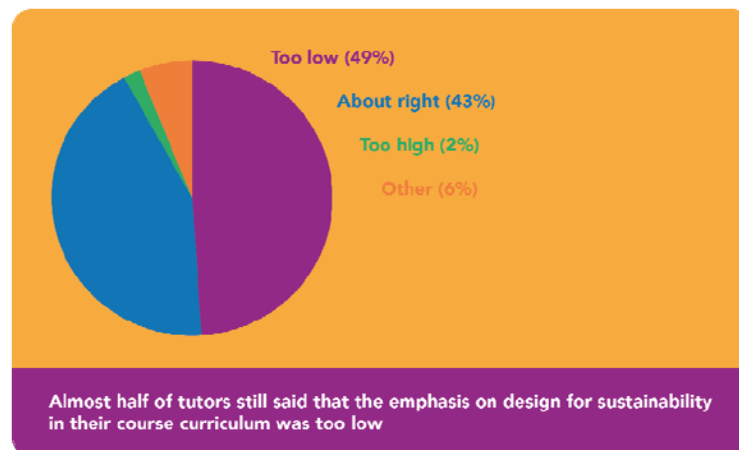


Figure 2. Emphasis on design for sustainability in the curriculum

In summary, the barriers can be understood as:

- Staff don't understand sustainability
- Language and concepts are too complex
- It's not a compulsory part of the curriculum
- Introducing sustainability is seen as arduous and costly
- There is a lack of leadership and support
- Businesses in general aren't asking for it
- It's not a traditional concern for design

## 4 DISCUSSION

In examining the state of sustainable design, this research has thrown light on areas of achievement as well as areas of discomfort for the higher education establishment. One of the most striking findings was how much depends on the passion and commitment of individual staff members, and their drive to include elements of sustainable design in their teaching whether or not it is a curriculum requirement. Where this is in evidence – as in the case of staff at Brighton and Ulster – it has won high praise and plaudits from the students themselves. This reliance on individual enthusiasm has contributed to a rather patchy picture of implementation across the country however, and leads us to question whether a more consistent approach would be desirable.

When it comes to wider trends in education, many interviewees were evidently disillusioned by what they saw as a system-wide crisis, with a changing educational model and increased emphasis on cost cutting and chasing foreign fees by management reflecting changing Government priorities (e.g. the STEM agenda) and an overt emphasis on profit and economic growth over human or environmental welfare.

The focus on cost and aesthetics over sustainability was also a concern when involving external partners in a design course, and it is evident that different universities have had varying experiences, with some left disillusioned by the lack of appetite for sustainable design in industry. One staff member for instance believed that sustainability was ‘critically important’ to companies’ future success, and it is a major consideration in the work his students undertake with them. His suggestion is that other design departments are working with the wrong people if this isn’t the case. It may be that departments need to select their external partners carefully and either choose those already predisposed towards sustainability or work with them to refine the briefs they provide, pointing out the commercial risks of not including sustainability criteria and exemplifying a more collaborative mode of operation.

The research mirrored ongoing arguments in industry about the value of design thinking as opposed to practical ‘maker’ skills[14], a debate which calls into question the purpose of design education itself. This separation of the practical and the cerebral can be problematic: both the skills and the thinking are in fact necessary. Most interviewees agreed that the role of educators was to prepare students for employment, as well as giving them the skills to think critically, be creative and take their place as citizens of the world. But developing both simultaneously seems to be a challenge for education.

Several staff pointed out that designers cannot be expected to know everything about all parts of the system they influence. There is a limit to the ability of one designer to be an interdisciplinary expert as well as a consummate specialist, but where that limit should be, and what we should expect as a basic level of awareness about systems and sustainability, remains a matter for debate. As long as designers are taking a problem-focused approach, learning to question the need for the products and services they are bringing into the world, applying creativity and logic to real problems and being willing to challenge their own worldviews, they are bound to make progress towards a more sustainable way of working.

As for the future, much of it is in the hands of today’s student designers, who have the power to influence and re-create the products and systems of the next 50 years. According to one interviewee, design students need to be more ‘savvy and disruptive’ and to ‘challenge what’s normal’:

‘I don’t think we have a choice: design is going to have to become the front end of innovation. At the moment we’re in a pickle, we’re distracted by what we don’t need and the whole world is lost in it. We are told that the way to change the world and make lots of money is to make a product, and people don’t question that... Designers are in a really powerful position because they have the tools and knowledge and power to turn it around –but they also have the ability to make things a lot worse!’

## 5 CONCLUSION: WHAT CAN DESIGN DEPARTMENTS DO?

University has always been a place for challenging the status quo, for seeking answers, and engaging with the radical or new. If the next generation of designers are to be properly engaged in addressing the challenges of the 21<sup>st</sup> century, they will need educational establishments to give them better briefs, to help them make sense of their role and allow them the freedom to create new knowledge. Practical recommendations for future success include:

- **Take a problems-focused approach:** As well as teaching practical making skills, design courses can introduce students to the applications that these skills have in the world. They can be

encouraged to come up with solutions that respond to actual problems, rather than just producing another ‘thing’ with a certain aesthetic or cost price.

- **Introduce sustainability concepts earlier on in the course:** If students are introduced to the idea of sustainable design earlier on in their course, they are less likely to have a disruptive change of viewpoint in their final year, and can rather learn to integrate it from the outset.
- **Make sustainability an expectation rather than an option:** In courses where sustainable design is either written into marking criteria or discussed and integrated from the start, students are more likely to see it as a prerequisite for good design rather than an ‘add on’ that can be taken or left without consequence.
- **Ensure management is on board:** Where heads of department show leadership and are supportive of sustainable design, this has been shown to have a positive effect on its integration within courses and acceptance among staff and students as well as the wider culture of the faculty.
- **Be open to external influences and new concepts:** Departments which encourage staff to regularly refresh course content, to include their own specialist passion in their teaching and to engage with outside experts will benefit from a richer diversity of ideas, methodologies and practical examples of sustainable design.
- **Encourage cross-disciplinary experimentation:** The ability to see systems and think ‘outside the box’ is essential for sustainable design. When students are allowed to experiment with subjects outside their immediate interest and experience, they start to see new relationships and connections and to consider the unintended consequences of their work.
- **Forge innovative partnerships:** Where universities have brokered positive relationships with sustainable businesses and industry or NGOs, through lectures, workshops, briefs and placements, it has been shown to have a transformative effect on students’ motivation and engagement with sustainable design.

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