Does Design Education Always Produce Designers?

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By questioning what we mean by the term ‘designer’ this paper describes the ideas behind a new Open University course in Design Thinking. The paper shows how the creative skills of students can be consciously developed, and deliberately applied outside of the creative industries in what are termed ‘embedded’ contexts. The distance learning model of education pioneered by The Open University is briefly sketched before the developments and ideas behind the new course in Design Thinking, in particular the concept of ‘social practice’ are explained in detail. The paper presents the results of an extensive student and tutor survey regarding the course before concluding that, although it is possible to teach design practice by distance, practice-based expertise for tutors remains a critical success factor.

Keywords: Design Thinking; Design Education.

Introduction

One of the main findings of a 2008 National Endowment for Science, Technology, and the Arts report on the UK creative economy was that: “more people work outside the creative industries than inside them” (Higgs, Cunningham, Bahkshi, 2008). Based on census data collected in 2001 the report identified 1.9 million people (7.1% of the UK population) in ‘creative employment’. This figure breaks down to the number of people in the creative industries being 552,170, the number indirectly employed by the creative industries – for example in accountancy or business – 690,641, and the number outside of the creative industries, ‘embedded’ in other industries being 645,067.

This general picture provides an interesting context for UK design education. HESA, the UK Higher Education Statistics Agency, which provides data online for subject areas and students in UK universities,
shows that in the academic year 2009-2010 there were 173,825 students studying ‘Creative Arts and Design’ subjects, with 63,325 classified under ‘Design Studies’. Of these 2570 (4%) obtained a higher degree that year.

Where might these 2570 graduates find employment? In the trade journal *Design Week* on 3rd March 2011 there were 11 design job advertisements which, totalled over a year, makes 572 available jobs. Assuming these positions would 1) be filled by graduates and 2) form most of the positions available in the design industry – two very big assumptions – that would leave 2000 students graduating without an obvious job in the design industry. As the first paragraph showed, the market for ‘embedded’ creativity outside of the creative industries is equally as big as the market within the creative industries so we might speculate that an equal proportion go on to work in this ‘embedded’ mode. This, however, raises the question as to why we primarily educate designers in specialist areas – product design, graphic design, interactive design – when it appears many will not go on to practice in those areas.

The argument for the productive application of design and creativity methods to a wider range of work-based situations has found traction in both business schools and forward thinking design schools through the area of ‘design thinking’. The main thrust of this approach is to show how using methods of design can add value to a business (Brown, 2008; Brown, 2009; Lockwood, 2009; Martin, 2009). There is, however, an alternative approach to design thinking that places less emphasis on the benefit to business and more on designing as a way of empowering a wider range of ‘non-designing’ people that goes beyond business (Ambrose and Harris, 2009). This distinction could be crudely characterised as the difference between indirect change – design and business encouraging people to consume in order to enhance their lives, and direct change – empowering people to enhance their lives through designing. This is the approach that The Open University has adopted in a new course titled ‘Design Thinking: Creativity for the 21st Century’ (U101).

This paper describes the ideas underlying U101 and brings together research showing the impact it has had on students and staff. The paper is framed as an experiment where the experiment is a new type of learning, the results showing the effect that that learning has had. The paper starts by giving a brief overview of the unique way in which The Open University teaches its courses. It then goes on to describe how the distance learning model has been adapted to teach the practice of design thinking, following recent developments in the internet. The concept of ‘the social practitioner’ is introduced, before a consideration of evidence about the impact that the
course has had. The paper ends by concluding that although it is possible to teach design practice by distance, practice-based expertise for tutors remains a critical success factor.

**The Open University Educational Model**

The Open University came into existence in 1969 as the ‘University of the Air’, using radio, television, and printed materials to deliver course material to students studying at a distance. The model of distance learning adopted by the Open University, and still in current practice, has two major features. The first is that the collection of course materials given to students need to be sufficient for ‘self-study’. That is to say that the student is able to learn simply by following the learning materials. Significantly this means that although every student is allocated to a regional tutor, the role of the tutor is to support the student in their study, not teach the course material.

The second feature is that the production of all course materials – for example audio, video, printed materials, timetables, assignments, marking guides, multi-media, online material, etc. – is completed before any students study the course. There is thus a production process, typically lasting three years, during which a course team made up of academics and support staff produce the course materials. This is followed by a presentation process, typically lasting eight years, where the students study the course materials in regular cohorts. During this eight years changes to the course materials are minimal.

Although this process is analogous to any product development process the closest analogy is perhaps to that of film, with a clear division between production – where the narrative of the film is crafted and fixed – and viewing – where an audience is able to watch, experience, and criticise the film.

Two aspects of higher education at The Open University deserve further mention. The first is that there is open access to everyone, regardless of prior qualification, for entry to first year (‘level 1’) courses. This means that course materials have to be crafted for a very wide range of student abilities and over the years the university has built up considerable expertise in pedagogy. The second is that the diversity of students is matched by the diversity of the regionally-based part-time tutors the university employs. Sometimes tutors are already teaching in other universities or educational establishments, a few come from business, sometimes they are retired academics, and often they are people that have completed Open University degrees themselves.
Teaching Design at a Distance

Design as a subject area has long been taught at The Open University. The first course – *Man-Made Futures: Design and Technology* – appeared in 1975 and this has been followed by many other courses leading up to the present day. However, in contrast to how design is taught at ‘traditional’ universities, as a practice-based education, Open University design courses have concentrated on teaching that considers design as a general phenomena; for example about how design takes place in different disciplines, or the impact and influence that design can have. So rather than teaching students *to* design, as a traditional design education does, Open University design courses have tended to teach students *about* design, producing students knowledgeable about design and the design process, but not necessarily accomplished as designers.

Three recent developments, all dependent on the ubiquity of the internet and increased broadband speeds, have made a different kind of design course possible, allowing the Open University orthodoxy of simply teaching students *about* design to be challenged. The first development is of a more social creativity. Web 2.0 has brought together people in ways amenable to demonstrating creativity through ‘usable’, configurable and media rich websites. For example, the photo-sharing website Flickr reveals a huge range of approaches to photography, from the amateur to the professional, that combine and influence each other in a creative social network.

The second development is that the distinct disciplines of design have become more ambiguous, blurring boundaries that were once distinct. Presenting product portfolios online, for example, now means that an understanding of graphic and interaction design is necessary. This means that design has become more oriented towards communicating design possibilities rather than producing objects that fit into well-defined categories, be they buildings, vehicles, products, sounds, or fonts.

The third development is that conventional design education has become more ‘distanced’. Students are spending more time working at home, sending in their work electronically, and communicating online with fellow students and staff. The studio-based educational model of the past is slowly being eroded as design education progressively becomes more of a virtual activity.

These developments present problems for a design education premised on the transmission of expertise through face-to-face discussion between teacher and student over a progressing design – an approach beautifully described in Donald Schön’s seminal book *The Reflective Practitioner*
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(1983). At the heart of reflective practice, Schön suggests, and arguably at the heart of creative practice, is the process of framing and re-framing; being able to see one thing as another. An expert practitioner is able to ‘re-frame’ a problem so a student can both move forwards in the process of reaching a solution and understand the importance of framing and reframing itself. How can these two forms of learning still take place when the amount of face-to-face discussion time is diminishing?

A possible answer to the question, and one that builds on the three developments outlined above, comes with the new course in Design Thinking offered by the Open University. Rather than adopting a reflective practitioner model of design education, a one-to-one transmission of expertise or knowledge, the course adopts something that we might refer to as a social practitioner model, where expertise comes from a diverse peer-group of students working in online environments. The word ‘diverse’ is important here in that it suggests a wide range of expertise and experience that can potentially feed into the design process. This aspect of the new course, combined with the traditional features of an Open University education – self-study course materials and support from a regional tutor – provide the basis for a different kind of practice-based design education.

U101 Design Thinking: Creativity for the 21st Century

Overview

In February 2010 The Open University launched ‘Design Thinking: Creativity for the 21st Century’ (U101), a 60 credit level 1 module (‘course’ in Open University parlance). During the first presentation 355 students, 18 based outside the UK, studied part-time for 36 weeks, sending in a portfolio of their design work for their final grading. These students were supported by 16 regional tutors. For the second presentation in 2011 the number of students had increased to 555, with an additional 8 tutors recruited.

At the beginning of the course students receive a creative welcome pack through the post (figure 1). This is designed both to provoke creativity, by asking students to play creatively with familiar objects, and to promote early engagement with other students doing the course.

The educational environment of U101 consists of three tailored elements; online self-study materials, an online design studio called OpenDesignStudio, and software for completing design assignments called CompendiumDS. These elements, detailed below, are closely integrated to provide a coherent and complete learning experience for the student.
Self-Study Materials
The online self-study materials are presented within the Open University’s Virtual Learning Environment (VLE). This is essentially a website that brings together different kinds of learning material for students to study on a week by week basis, for example academic concepts, practical skill development, activities for students to do, and course assignments. Figure 2 shows a screenshot of the course home page where the course content is structured in a prescribed order. This roughly equates to 15 hours of study per week for students.

There are four key concepts underpinning design thinking that are taught to students, both in theory and in practice, as they complete the course:

1. Problem-framing. This is the idea that problems have to be defined at the correct ‘level’, independent of design discipline, before appropriate means of solving the problem can be identified. This is perhaps equivalent to saying that the solution to a product design problem isn’t necessarily a product. The idea of problem-framing at different scales is reinforced by the four-block structure of the course which looks at themes of self, others, society, and world.
2. Productive dialogue. Perhaps the most important aspect of design thinking is engaging in a *productive* dialogue as a way of progressing towards a design proposal ('proposal' is used here very deliberately in place of 'solution', as it suggests something incomplete, and open to further dialogue and development). Productive dialogues, for example over sketches and prototypes, are essentially a way of learning through doing. They naturally take place between people, but one can also think of a dialogue occurring with the self or, as Schön (1983) terms it in 'a reflective conversation with the materials of the situation'. A further aspect of a productive dialogue is the idea of 'play'; proposing something simply for the sake of finding out where it will lead.

3. Quiet design. It is continually emphasised to students that design thinking is something that is all around them, in the many objects, environments, and organisations that Rich Gold refers to as 'the plenitude' (2007). Quiet design refers to the tangible and intangible things that don't
stand out as being ‘designed’ at all. Indeed, it also suggests that design can be about taking away things, rather than producing more things.

Figure 3. Screenshot of U101 study material

4. Using expertise. The collaborative aspects of design thinking are emphasised by considering the overall role of a designer as someone who can utilise the expertise of others in solving problems; someone who can marshal and manage resources, not necessarily someone who has a wide range of particular technical abilities or familiarity with a certain piece of software.

All four concepts focus on the more general aspects of designing, drawing on a number of different design disciplines for examples. Figure 3 shows a screenshot from a particular piece of learning material, showing how video, image, and text are combined.

OpenDesignStudio
The second key element of U101 is an environment within which students can upload and discuss their work. OpenDesignStudio combines elements
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of Flickr and Facebook in a social networking environment structured in a way that students can follow a sequence of practical activities to produce a portfolio. Figure 4 shows a typical student’s homepage while figure 5 shows an example portfolio.

![OpenDesignStudio homepage](image)

**Figure 4. An OpenDesignStudio homepage**

OpenDesignStudio embodies the social nature of creativity by allowing the sharing of expertise through discussion about particular things. These ‘things’ can be sketches, prototypes, or examples uploaded via photos, video, or other embedded web-objects. During the course this uploading and discussion becomes second nature to the students, and is often extremely sophisticated. The social glue for OpenDesignStudio, however, comes from the diversity in the student cohort allied with the expertise of
their tutors. As an example of this diversity table 1 shows the age profile of students completing the course in 2010.

As students study part-time they are able to contribute their experience from their everyday and working lives to many areas of design activity. For example, one student, working on a problem that they'd framed as ‘book storage and retrieval’, proceeded to produce a prototype and uploaded an animation of that prototype to OpenDesignStudio. On coming across this prototype, another student, who worked as a librarian, was able to provide detailed information about her experience in helping to develop the prototype. That discussion, available for all to see and typical of many
other discussions, has valuable consequences: it provides an opportunity for the tutor to emphasise a learning point, it provides an opportunity for other students to contribute, and of course it provides an opportunity for the first student to develop their design prototype.

Table 1. Age Profile of students completing U101

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Number of Students</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 25</td>
<td>76</td>
<td>21</td>
</tr>
<tr>
<td>25—29</td>
<td>63</td>
<td>18</td>
</tr>
<tr>
<td>30—39</td>
<td>100</td>
<td>28</td>
</tr>
<tr>
<td>40—49</td>
<td>82</td>
<td>23</td>
</tr>
<tr>
<td>50—59</td>
<td>27</td>
<td>8</td>
</tr>
<tr>
<td>60—64</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Over 65</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>350</td>
<td>100</td>
</tr>
</tbody>
</table>

OpenDesignStudio also provides an opportunity for students to use other students’ work as inspiration. Indeed, students are actively encouraged to build on the work and ideas of others as this is considered to be another essential aspect to design thinking. This results in pathways of connected creativity, where students have taken on an idea, developed it, and that development, in turn, has been taken on by someone else. The environment can also be used to illustrate a learning point. Figure 6 shows how different students responded to the challenge of sketching a ‘hair dryer’ in 30 seconds. The results visually illustrate the idea of design fixation; how framing a problem in a particular way can lead to having a pre-conceived idea about a solution.

What figure 6 illustrates is that, consonant with running this exercise in a classroom, about 5% of people identify the sun or a towel as a ‘hair dryer’. This change of frame is an important learning experience for students wedded to the idea of a hair dryer as basically a gun-shaped object. OpenDesignStudio provides an excellent way of showing how many people have similar fixations.
Figure 6. Students responses when asked to sketch a ‘hair dryer’.

OpenDesignStudio is an asynchronous communication environment but students and tutors also meet online synchronously using the conferencing application Elluminate. Elluminate can be used both to present and discuss examples through it’s whiteboard facility and to hold creative sessions – again drawing significantly on the experience of students. Furthermore, sessions can be recorded for later playback by students unable to attend ‘in person’.

CompendiumDS
In seeking to teach a general ability like design thinking one of the most difficult issues is how to assess a thinking process rather than the product or outcome of that process. How can one see evidence that a thinking process is improving over the 36 weeks of the course? The third key element of U101 is an application called CompendiumDS, a knowledge mapping environment where different types of ‘nodes’ can be linked together. Within CompendiumDS a design thinking process can be
represented in a node structure and hence assessed. Figure 7 shows a screenshot of the CompendiumDS interface, with an example node structure.

![Figure 7. The Compendium Interface. The menu on the left of the window contains different types of nodes that can be connected together to form linked structures.](image)

The CompendiumDS environment is tailored for U101 in that the different nodes form an iconography of the design process, for example there are nodes for ‘ideas’, ‘questions’, ‘decision points’, ‘links’, and a ‘diary’ node. Each node can have resources associated with it, for example images, or web-links, as well as notes. By combining nodes a design process can be constructed that contains the reasoning for making decisions at regular points. A tutor assessing the design process can thus access and assess the individual ‘moves’ that were made in a design process.

One of the major learning outcomes for students completing the course is to understand the components of the design process and how design processes might themselves be ‘designed’. For its assignments the course gives students a number of design process templates to follow. For the first assignment this just requires information and images to be added, but progressively, over four assignments, more flexibility is given for students
to construct their own design processes. Figure 8 shows the template for the second course assignment.

![Diagram showing the design process template for assignment 2.]

**Figure 8. Design process template for assignment 2.**

The assignments themselves are general enough to complete in a range of ways, and without specialist knowledge: the first assignment is to produce a T-shirt, the second to frame and solve a self-defined problem, the third to design a game, and the forth to communicate a story about a design prototype.

As mentioned earlier, the three key elements of U101 are closely integrated. The course materials require regular uploads to OpenDesignStudio as do key pieces of work during the design assignments. There is thus an intentional overlapping between theory, practice, and discussion, with a strong emphasis on using social expertise to generate individual design proposals.

**Results**

Following the first presentation of U101 189 students were surveyed about their experience of the course. 64 (33.9%) students responded and the results are shown in table 2.

Additionally, the tutors that taught on U101 were surveyed about the quality of various aspects of the course. Of the 16 tutors invited to respond, 11 (69%) did. The results are shown in table 3.
Table 2. Student satisfaction survey: % of students answering that they definitely or mostly agreed with the relevant statement. Notes: the ‘OU average’ figure combines the results from 45 level one courses (a total of 4083 students), which includes U101.

*The cost of studying U101 in 2010 was £635.

<table>
<thead>
<tr>
<th>Statement Responded to</th>
<th>U101</th>
<th>OU Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, I am satisfied with the quality of the course</td>
<td>70.7</td>
<td>90.0</td>
</tr>
<tr>
<td>Overall, I am satisfied with my study experience</td>
<td>72.4</td>
<td>89.0</td>
</tr>
<tr>
<td>The course provided good value for money*</td>
<td>63.2</td>
<td>79.1</td>
</tr>
<tr>
<td>I was satisfied with the support provided by my tutor on this course.</td>
<td>82.1</td>
<td>85.5</td>
</tr>
<tr>
<td>Overall, I was satisfied with the teaching materials provided on the course</td>
<td>69.0</td>
<td>89.6</td>
</tr>
<tr>
<td>The workload on this course was higher than I expected</td>
<td>37.9</td>
<td>34.1</td>
</tr>
<tr>
<td>The course met its stated learning outcomes</td>
<td>80.7</td>
<td>90.2</td>
</tr>
<tr>
<td>I would recommend this course to other students</td>
<td>69.0</td>
<td>84.4</td>
</tr>
<tr>
<td>The course met my expectations</td>
<td>65.5</td>
<td>83.8</td>
</tr>
<tr>
<td>I enjoyed studying this course</td>
<td>79.3</td>
<td>86.1</td>
</tr>
</tbody>
</table>

The results of the student survey show satisfaction with U101 generally lower than satisfaction on other Open University level one courses. The Open University, it should be noted, generally finishes in the top two of all UK universities for student satisfaction, so the U101 results might appear poor in that context. Taken on their own, however, the results seem quite presentable, particularly student satisfaction with tutor support.

Issues relating to the delivery of the course might also explain a lower than average result for student satisfaction. There were some technical problems with CompendiumDS that proved frustrating for many students, but which were rectified during the course. Some of the students also found the group work difficult to organise and contribute to, which resulted in dissatisfaction. It should also be borne in mind that U101 has broken new ground for the Open University, both in teaching a practice-based subject, and in delivering the course entirely online. With 229 students (65%) having already studied other Open University courses – what are termed ‘continuing students’ – expectations were confounded by U101 with some students enjoying online study, while others missed having printed materials.

Table 3. Tutor course-content survey. Responses were on a 10 point scale with 1=poor, 10=outstanding.
How would you rate the following aspects of U101?

<table>
<thead>
<tr>
<th>Aspect</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall structure of the course</td>
<td>85.5</td>
</tr>
<tr>
<td>Academic content of the course</td>
<td>80.0</td>
</tr>
<tr>
<td>Practical content of the course</td>
<td>86.4</td>
</tr>
<tr>
<td>Video and multi-media content of the course</td>
<td>84.5</td>
</tr>
<tr>
<td>CompendiumDS</td>
<td>67.3</td>
</tr>
<tr>
<td>OpenDesignStudio</td>
<td>72.7</td>
</tr>
<tr>
<td>Online Self-study Materials</td>
<td>81.8</td>
</tr>
<tr>
<td>Course Assignments</td>
<td>79.1</td>
</tr>
</tbody>
</table>

The results in table 3 indicate that, in general, the tutors supporting the students were very positive about the various features of the course. Of note are high responses for the course structure, academic content and practical content, indicating that the course is both coherent and balanced. The lowest grade was given to CompendiumDS. This is the environment that the tutors had to engage with most as all design assignments were completed using the software. Several found the assessment process both different from what they were used to, as existing Open University tutors, and difficult to manage in terms of collecting, marking, and returning assignments.

Of the sixteen regional tutors employed to tutor U101 ten (63%) were entirely new to the Open University. What is remarkable is that eight of the top ten tutors, measured in terms of student retention, were all ‘new’ tutors. Table 4 shows the average retention rate achieved by ‘new’ tutors and ‘old’ tutors. It should be noted that, with part-time study and no prior qualification required, student retention on first level courses at The Open University is low when compared to other Universities. U101 achieved an overall retention rate of 65% (230 students), which is about average.

<table>
<thead>
<tr>
<th>Tutor Experience</th>
<th>Retention Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘New’ Tutor</td>
<td>70.5%</td>
</tr>
<tr>
<td>‘Old’ Tutor</td>
<td>55.5%</td>
</tr>
</tbody>
</table>

Table 4 provides further evidence of the ground-breaking nature of U101 for The Open University, with the ‘old’ tutors tending to find adapting to the needs of a quite different course more difficult than starting afresh. Table 4 also raises a further question related to design expertise. Seven of the ten new tutors were practising designers, from a range of disciplines, and this seems to have played a factor in keeping students interested in the course. Indeed many of the ‘new’ tutors were recruited following an advertisement in the trade journal *Design Week*, which may go a small way...
to explaining where professional designers find jobs embedded in organisations outside the creative industries.

**Discussion**

In the introduction we discussed the main approach to making the subject area of design more widely applicable to areas outside the creative industries. This approach adopts more of a business focus to the design curriculum, emphasising, for example, how design can be used to solve management problems as well as improving product and service delivery. The paper also outlined a second approach, which was to give a more diverse group of people the tools to think creatively, developing their confidence and helping them to engage with the world around them in a productive discourse. Crudely put, the first approach emphasises design as a way of increasing profit for business, while the latter emphasises design as a way of empowering people more generally.

The new Open University course in Design Thinking described in this paper has followed the second approach, drawing out the natural creativity of a diverse range of individuals and helping them to shape and sharpen their ideas in the world around them. This approach exploits the unique diversity of the part-time Open University student population. With many students already employed in the workplace, the design thinking skills that they have learned in doing the course can be directly applied to a business context, lessening the need to become qualified to design before practicing as designers, or the need to consume some product or service to fix a solvable problem.

This model of design education is perhaps not suitable for many academic schools of design, with more homogenous cohorts of students, but it could point the way for possible change. Accepting students from a wider range of backgrounds and, importantly, drawing on those backgrounds directly in teaching, could lead to designers having a more fundamental impact on society outside the creative industries. Design education is a curious mix though. On the one hand a subject that fosters and demands creativity and innovation from students, while on the other resistant to the very creativity and innovation espoused. Traditional design courses still hold at their heart a discipline-based, master-apprentice approach to learning with any radical deviation from this viewed as a debasement of design values. Design education is largely still the final stage in a development process whereby creativity is encouraged in young children, repressed in teenage years, and then professionalised in higher education, a process made explicit by Ken Robinson (2001). Which brings us
back to the original question: does design education always produce designers?

The title of this paper was motivated by a comment from U101’s external examiner who, although impressed by the quality of the student work produced, was keen to emphasise that the students passing the course shouldn’t think of themselves as designers. The external examiner was right, although their claim as to what exactly constitutes a fully educated ‘designer’ remained unarticulated at the time. Design Thinking is a first level course and no programme in design education would claim to have produced a ‘designer’, whatever we mean by that term, after only one year of part-time study. However, it does raise an interesting issue about courses teaching design subjects in what we might term ‘non-traditional’ ways; outside of studios, with little face-to-face contact between students, and with a tutor at one removed from the work of the student. Could students graduating after a design education on this basis be termed ‘designers’?

The question, of course, depends on what we mean by the term ‘designer’. Do we mean someone who is steeped in a traditional design discipline or do we mean someone who is able to solve problems in particular way? Traditional design education, I suspect, produces more of the latter than might be admitted. Adding more business-based elements to traditional design courses, or conversely adding more design-based elements to business courses, is a way of making the skills of designing more generally applicable but U101 has sought to go much wider in teaching and applying the skills of designing. This, naturally, challenges what we mean by the term ‘designer’. Perhaps the biggest contribution of U101 is in demonstrating that students can be taught skills of design thinking online, independent of design discipline, and with little prior qualification.

References
