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Editorial: Design Education: Catalysing Design Capability (PEDISG)

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Almost all design researchers are members of academic communities. Their authority comes from a background, which typically includes not only some kind of design activity, engaging in the process of designing, but also a track record in scholarly endeavour. Their pre-occupation is with three areas: the process of designing, teaching design and researching design. This relates to the core mission of the Design Research Society which gives prominence to education (“promoting the study of and research into the process of designing in its many fields, and furthering education...”). It is thus quite natural that design academics should engage in such investigations, and that they should seek to extend our understanding and capability in this area. Whereas designers for the most part get on with designing and leave design research to the academic community, for the latter a core activity is developing the theoretical underpinning of design to inform and develop its pedagogy. The rich array of topics and techniques in this track demonstrates the vitality of this approach.

The relationship between design research and design teaching is important. Design research has the potential for not only informing teaching but also enriching it and giving it added focus. It is necessary not only for the academic respectability of the discipline but also for forging productive links with design practice. This is demonstrated in the papers in this track. One of the features of design education at undergraduate level is that it aspires to prepare design students for the world of design practice. Thus research into the developing nature of designing and how design practice responds to changing circumstances and needs is important in maintaining the relevance of the design course content. Research which gives a better understanding of the professional practice of design and its societal context can help in this aim.

The approach taken to forging links between design research and design pedagogy can be influenced by a number of factors. The nature of the design practice is obviously one such covering as it does a wide spread of activities. Architecture and graphic design both feature and are fairly distinct from each other for example. But the academic context can also be significant in influencing the educational culture and approaches employed. Where it is seen to be occupying a space between arts and humanities, and science, between engineering and creative disciplines then it can be faced with what could be seen as either incompatible traditions or rich opportunities for synthesis. With papers describing the development of both analytical skills and those of creativity the emphasis is more on seeing the context as an opportunity.

A number of the papers are concerned with developing student capability as neophyte designers. In this process the design studio may be seen as being a catalyst for integrating and processing different layers of knowledge, operating at different scales. Indeed the studio could be regarded as the experimental laboratory for the pedagogic research. Along with the other teaching



environments it provides an arena for developing and testing different approaches and techniques. For example it can function as a laboratory for testing ideas about co-creation and sustainability aimed at investigating design strategies. These can be orientated to approach societal problems and developing solutions for specific contexts in a living laboratory arrangement. Another approach is to prototype a competency framework which can employ a visually orientated system directed to the development of the curriculum. This would be personalisable at various scales for individuals, units, courses and programmes, in a student centred approach which embraces the possibility of student designing and controlling their own education. For contemporary designers who aspire to be active in the creative economy it may be necessary to remodel the teaching and learning process to focus on real problems and projects. This could point to a new role for the both the teacher and the learning environment, in which co-designing has a new prominence. Indeed, in one paper this is taken further to explore the involvement of children in performative and narrative based design methods. A key ingredient is the subsequent analysis to reinterpret and reconstruct design insights.

Much of the work described in the papers in this track is concerned with pedagogies which support the development of design thinking. This can be displayed through studying the qualities of learner-generated online content as rated by relevant experts. The focus then is on how these relate to learners' engagement which is investigated through comments and conversations. The dynamic outcome signalled key differences between the areas regarded as important by the design students and the experts. Indeed, design students can become fixated and stuck within the design process, and unable to innovate. The use of design heuristic prompts is a way of stimulating them to develop their concept design thinking ability and thus their ideation skills. Another technique is to use a range of tools to support the thinking process. These can be actual physical tools or abstract ones such as exploiting the resources of design history. Both visual and verbal tools have proved to be productive. Indeed, within the critique context the use of rhetorical techniques can be highly effective. This is well described in one paper which reports on its implicit and explicit use by students describing their designs.

Design pedagogy research directed to applied design has application in a number of areas. The user-centred approach and problem-based learning have found employment in such functional tasks as the design of police uniforms. Such a holistic interdisciplinary pedagogical approach for translational design research has relevance to a range of areas and disciplines, with potential for combining art and engineering within both sciences and humanities. The synergy resulting from the varieties of backgrounds and expertise creates a fertile ground for exploration on both a conceptual and a technical level. This impacts on several areas of design, and emphasises the importance of relating the theoretical and research basis for the development of relevant design education. For graphic design there has been a need to review such research outputs to map their content and identify emergent themes. In another part of the graphic design domain the other key component in matching course content to needs has come from reviewing what companies request from applicants for graphic design jobs. This has helped in identifying the necessary design deliverables, knowledge and skills and personal traits which courses need to inculcate.

Overall it is clear that there is a rich array of studies in the papers in this track. The work reported on demonstrates the clear ambition of making use of design research to develop and re-vitalise design education across the many design disciplines.