

“Glocal” Design and Technology education: sharing disparate local insight that informs and enriches global understanding and inspiration

Kay Stables, Goldsmiths, University of London, UK

Lyndon Buck, University of Southampton University, UK

This first Issue of the 29th Volume of Design and Technology Education: An International Journal presents a diverse assemblage of articles focusing across the breadth of design and technology education and providing opportunities to pause and reflect on the value created by such diversity. The issue is made up of five articles from five countries – China, Ireland, Norway, Turkey and USA spanning understandings from mainstream schooling, higher education and professional practice, presenting insights from makerspaces to industrial design culture to visualising research. From an editorial viewpoint the range re-enforces the vision of the journal as an inclusive, open space for contributing and sharing diverse perspectives.

The first article in this issue falls under the heading of “Reflection” but in reality it goes far beyond being merely reflective. Niall Seery from The Technological University of the Shannon in Ireland opens up a topic that the editorial board has been considering for some time – that of the value of visual research articles. The topic can be seen as contentious, particularly by those who value communication via the written word as being above all other means, but in this immensely thought provoking article the value of communicating through graphic and visual language both in itself and as an enhancement when combined with written words illuminates ways of enhancing understandings of research and enables greater opportunities for research to be applied. The topic is one that we are keen to explore further in future issues of the journal, so watch this space! We are also keen to receive feedback, insight and ideas related to visual research articles.

The first article in the Research section, purely by chance, has resonance with Niall Seery’s article through the authors’ approach to providing encouragement for students to use visualisation as a pedagogic tool. In *Reflect, Assess, Visualize: Cultivating Skill Development in User Experience Education*, Emma J. Rose from the University of Washington Tacoma, USA, Cynthia Putnam from DePaul University, USA and Craig M. MacDonald from the Pratt Institute, USA present research from an exploratory study that focuses on the use of a pedagogical intervention that helps students who are aspiring to be User Experience (UX) designers to identify, assess and cultivate the disparate skill sets needed. The research was conducted within both graduate and undergraduate programmes. Based on their previous research into the needs of UX professionals, they focused on technical skills such as research, design and process thinking, human skills such as approach problems, communicating and storytelling, and dispositions such as independence, flexibility, curiosity and passion. Drawing on established research from educational theory such as learning and reflection, metacognitive strategies, cognitive processes and schema-based learning, they created a pedagogic tool developed as an “advanced organiser” that could be used as a reflection tool. Through the article they provide insights into the use of the tool across the three programmes involved at an initial stage

structured on inventory, visualisation and reflection and a final stage repeating reflection and visualisation. Fascinating detail is provided from the analysis of the students' reflections and the variety of approaches used for visualisation such as charts, graphs, illustrations and cartoons and from the insights of students at the end of the project reflecting back on their journeys and learning through the stages. The authors provide insight into the key helpful aspects of the intervention and additional considerations for implementation. The richness of the research, undertaken over three years, in three institutions with three different courses, makes an invaluable contribution to pedagogical approaches in higher education and also holds value for educators working with students in the final years of mainstream schooling.

The next article in this issue is of particular value for insights into the growing introduction of makerspaces into mainstream schooling *The Influence of Teachers' Perception of Creativity and Makerspaces on Their Practice in Norwegian Compulsory Schools* by Brynjar Olafsson from the University of South-Eastern Norway and Gisli Thorsteinsson from the University of Iceland explores the impact of maker-centred learning on creative capability and digital competences. Based on semi-structured interviews with teachers, the research focused on how teachers conceptualised creativity in respect of makerspaces and on their reflections on pedagogy and management of learning. Following a broad perspective of informative insights into both maker education and creativity drawn from literature, the authors present their research questions, asking how, in Norwegian compulsory education, teachers define creativity and makerspaces and how teachers' understanding of creativity and makerspaces affect their work. Interviews were conducted with nine teachers working with 14-16 year olds in schools that had established school-based makerspaces. Whilst being quite small scale, the research provides some extremely useful insights into the value of makerspaces in mainstream schooling. There were common views across the teachers in certain respects, such as the value of a makerspace as a place to be creative, but also differences in understandings of creativity. For example there was a difference between the use of ready-made kits and more open-ended creative processes. Interesting perspectives on pedagogical approaches are highlighted – for example contrasting traditional classrooms with makerspaces in respect of a teacher's role being more observer and facilitator, less instructor and more asking questions than providing answers. The inclusion of makerspaces in mainstream schooling across countries is varied and for those considering the introduction the research presented is extremely interesting and valuable.

In Formation of Industrial Design Culture from Education to Professional Life, Doğan Can Hatunoğlu from Atılım University, Turkey and Pınar Kaygan from Art Academy of Latvia explore how the professional culture of industrial design developed through design education, relates to the working practice of professional designers, in the context of Turkey. Their research is conducted through semi-structured interviews with 15 industrial designers (8 women and 7 men) who studied and worked in Turkey in manufacturing companies and who had graduated between two and six years previously. Drawing on literature focused on research on cultural forms of professions and organisations, the framework for the study was shaped through five overarching categories: stories, physical space and artifacts, language, dress and appearance norms, and social relations. Through the interviews the designers reflected on their experiences in design education, suggesting a difference between themselves and, for example, engineering students, highlighting their culture as students "being a community, having flexibility in time and space, and working long hours" – as they reflected on the way in which their studio became a 'home' for them. Shifting to their professional life in manufacturing companies there was a

focus on working with engineers whose culture involved, for example, noticeably different approaches with greater disagreement and greater levels of formality in aspects such as work spaces and dress norms. The research highlighted the value of flexibility amongst the designers and the importance of work experience in manufacturing sectors to prepare students before entering the workplace. The article has resonance with the concept of 'academic tribes' where differences between related disciplines, such as design and engineering, become apparent, and highlights the importance of raising awareness that results in positive working relationships.

Finally, In *Anonymous Modern Design Education in Western China: A Case Study*, Zhiyong Wang from Chongqing Technology and Business University, China provides a fascinating case study of design education drawn from one of the many "anonymous" design education institutions as a contrast to the "well-known" "celebrated" universities and their "heroic" figures, highlighting both the challenges and contributions of the former. Taking a stance from design historians who have critiqued the concept of the "hero designer", such as Adrian Forty Clive Dilnot and Penny Sparke", Wang focuses on the contributions of less well known institutions, typically located in Western China. The case study focuses on the present situation of the institution, the key features in terms of achievements, disadvantages and problems and prospects for improvements. Information is based on document analysis, questionnaires and interviews. Participants include undergraduate and postgraduate students who answered questionnaires, and interviews with five teachers from the design department, the deputy dean and senior academics from environmental, fashion and communication design. The author provides both a historical perspective on the development of the institution and, whilst highlighting challenges in making this shift provides insight into the growth of the institution and development of the curriculum from a traditional art and art history approach to a modern design curriculum and the introduction of a more international experience. Despite challenges, the author remains positive in respect of the future for the institution and for design education. The case study provides an important reminder of the numerous institutions within and beyond China, that consistently develop and advance the experience being provided for design students – the unsung design education heroes ensuring a sound and quality experience for their students.