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CROSS-DISCIPLINARY PEDAGOGY: FROM CHINESE FAN DANCE TO DESIGNING A BANDSTAND

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ABSTRACT
This paper offers insights into the value of a cross-disciplinary, transcultural approach to tertiary design education pedagogy through exploration of two cases-studies. The first centres on the author's experience as an invited participant in a collaborative international venture - Shanghai Open University (SOU) Immersion Hub 2015. This culturally immersive experience aims to deliver an enhanced understanding of Chinese culture and methods of delivery and learning in a higher educational context within China. The paper explains how SOU is investing in pedagogy research, advanced learning technology and resources in its quest to deliver effective online distance learning (ODL) to its 1.3 million students and seeks to establish the value of such technologies in the delivery of design education in the UK. The second case-study revolves around a live cross-disciplinary, collaborative design competition involving postgraduate students of Industrial Product Design, Design and Transport, and Interior Design. The brief was to design a contemporary take on 'the bandstand' as point of focus and as an expression of Coventry's cultural ethnography and changing demographic. The paper concludes with an overview that stresses the importance of pedagogic understanding of cultural difference and its role in enabling international students to acquire the necessary collaborative and cross-disciplinary skills needed to succeed both academically and beyond in a global design economy.

Keywords: collaboration, cultural difference, design pedagogy, China, cross-disciplinary

1 INTRODUCTION

In 'Beyond Culture', Hall identifies how matters of cultural difference and expressions of creativity can be compromised within institutional frameworks: 'Part of the problem lies in the tension between creativeness and diversity and the rather specific limiting needs of institutions.' [1]. As universities reach out to recruit ever increasing numbers of international students the danger is that unless pedagogues are alert to the significance of cultural difference within the learning environment, there is a risk that international students may struggle unduly and come to regard their learning experiences in the UK in negative terms, with potentially damaging longer-term consequences for reputation and recruitment. As one Chinese student put it, 'I need time to understand the different thinking from the different country.' (Survey: verbatim response, anonymized). The following case studies offer insights into how cultural empathy and cross-disciplinary engagement might lead to more effective creative collaboration and smoother institutional assimilation.

2 CASE STUDY 1

A key novelty of the three-week SOU Immersion Hub 2015 programme was the opportunity to see and experience first-hand the effects of cultural difference from the contra-perspective of the student rather than the pedagogue. Thus, the teacher became the learner; the native became the foreigner; pedagogic familiarity became the learning unfamiliar; imbued cultural ease became sudden culture shock; and language mastery became communication inarticulacy and bafflement. Among its stated aims are that, 'It highlights multicultural understanding and aims to help students with their personal development as well as professional development' (SOU invitational letter, 2015). Delegates to the programme are drawn from all over the world, from a variety of disciplines and from educational backgrounds spanning undergraduate through to PhD. As well as formal classroom lessons in Mandarin, Chinese Culture and Society, and Chinese Painting and Calligraphy there were lessons in

more esoteric subjects such as tai-chi, traditional Chinese dance, and table-tennis. Beyond the confines of the classroom, there were also group bonding activities - games and challenges - as well as culturally orientated visits to museums, galleries, and historically significant sites of interest. A visit to Shanghai Automobile and Industrial Corporation (SAIC) provided students with a presentation and tour of the production facility where it was made clear that while China is proud of its cultural history, it is very much a nation with an ambitious eye firmly on a future founded on technology, engineering, and design pre-eminence. Success in this regard, it was stressed, would only be possible through the efforts of a highly educated workforce.

2.1 Technology and its role in mass learning delivery systems

SOU's Digital Lab of Open Learning is technology environment within which learning technologies are developed and evaluated. Its walls are cloaked in video screens that are linked to cameras, computer systems, augmented reality systems, eye-tracking applications and real-time brainwave analysis systems. Of the latter, a headset captures student brainwave activity as a stream of data which is then dynamically processed and outputted as a series of patterns by which trained academics are apparently able to determine student's learning attentiveness and cognitive effort. The ambition is to try to create a working system in which pedagogues can view brainwave patterns of any suitably-equipped student to spot signs of drifting attention or excessive cognitive effort with the teacher intervening accordingly. While there is nothing particularly novel in the use of eye-tracking testing as part of the development of online learning delivery systems, as evidenced by the UK Open University's own use of the technology [2,3], the SOU's explorations also consider the potential of deploying it in the future as a routine aspect of its course offering. In such a scenario, the necessary software would be downloaded onto the student's machine as part of the overall package of course materials and the eye tracking hardware need be no more complex than a webcam. Thus it becomes possible to gather large-scale student eye tracking data by which to optimize learning delivery systems. This raises ethical issues that might trouble western institutions and answers to questions in this regard candidly outlined a position that while the ethical perspective might be an issue in the west, that wasn't necessarily the case in China. The rationale was that if such technologies improved student learning to the good of both the student and the institution, then any ethical concerns were felt to be somewhat secondary.

In the use of augmented reality, an example was given in which students undertaking a course in the history of Shanghai are required to go to locations around the city where at key nodes they hold up the tablet or phone and point it at a relevant feature. An augmented reality overlay such as an historical photograph of the scene appears on the screen. Students can then further interact by responding to questions, recording their thoughts as audio or video recordings, or by being instructed to carry out assignments.

On SOU courses, regular and routine student testing is a consistent feature, typically in the form of quizzes and multi-choice questions. The system does not yet appear to cater for more open modes of student investigation such as argument-based discourse, open-ended research enquiries or the creation of design concept proposals, for instance. Given the numbers of students involved, it's not hard to see why closed and multiple choice testing models offer delivery and processing efficiencies in terms of assignment handling and learning monitoring procedures. Clearly, this an effective ODL framework that is well-suited for scientific and knowledge-orientated subjects in which correct or incorrect answers can be neatly mapped against delivered course content. Yet it's not so easy to see how such a paradigm could be adapted for use in design education, which by its very nature is largely intolerant of the construct that there are only right or wrong outcomes. That is not to say that such a system has no place in the delivery of an online design education - far from it. The Open University has been delivering online design education courses for some years now [4] and as such combines online delivery and assessment handling, face-to-face engagement with tutors and assignments in a blended-learning model that does encourage open-ended solutions and engagement with praxis-based explorations via model making and prototyping.

2.2 Shifting learning paradigms

From these presentations it became apparent that at SOU the role of technology is seen as pedagogically and logistically central to its continued capacity to develop and deliver successful mass online courses. In Western institutions that are looking to significantly expand their design education

offering the challenge is to use the benefits of a scalable, ODL frameworks within which students can develop and shape their design thinking and creative outcomes much as they would in a traditional in-studio learning space. Alongside this, as was explained in a number of presentations, there is a growing awareness of the importance of a cross-disciplinary method of learning that aims to prepare students for working life beyond the socio-economic requirements for specific role shortfalls within China's workforce. Within branch schools associated with SOU, students are well supported by teachers who are required to devote considerable time to their students' care and development, to the extent that they will even go to students' homes to deliver lessons where they live in remote communities. For the teaching of design disciplines it was made clear that this was still very much a case where the teachers, not technology, were essential to the process. Certainly, there is still an expectation that the teacher's job is primarily to impart testable knowledge and train students in particular skills, but, backed by generous government funding, the emphasis is beginning to shift towards a model of cross-disciplinary student adaptability and flexibility and away from learning for vocational specialisms. Students engage in projects supported by local economies and collaboration is innate to the Chinese way of working. Perhaps most interestingly, courses in the liberal arts are expanding, as is an awareness of the value of teaching critical and creative thinking.

2.3 Soft power and cultural embedding

If the Digital Lab of Open Learning represents the hard-edged, technological interest in learning system, then other aspects of the SOU programme represent a soft power emphasis where the focus shifts towards empathetic cultural awareness and personal development. It's here that visiting students undertake learning experiences that range from fairly didactic classroom sessions in Mandarin, Chinese Culture and Society, through to less formal teaching in Chinese Painting and Calligraphy, and onto esoteric subjects such as tai-chi, traditional Chinese dance, and table-tennis. The emphasis was on getting students to interact with other, discover something of each other's interests and strengths, and to solve challenges collaboratively and cross-culturally. It was during these activities that I gained my clearest first-hand insight into what it must be like for Chinese students to experience the cultural shock, social disorientation and situated behavioural uncertainty when they first arrive in UK classrooms.

Lessons in the Chinese language were conducted along traditional talk-and-chalk principles that had the teacher conduct much of the instruction in Mandarin. Repetition and rote learning was very much the order of the day. Lessons were delivered at native speaking speeds and in breaks all students admitted to a lack of comprehension and a sense of anxiety, especially when questions were directed at them. An empathetic awareness quickly emerged of how Chinese students must feel in UK classrooms when they too are under questioning that might cause them to lose face. Surprisingly, as the days went it became clear that most students were making more sense of the lessons - albeit it within a very narrow vocabulary. With increased understanding came a willingness to proactively engage, which in itself was pedagogically significant.

Western literature often portrays Chinese learners as passive learners who are reluctant to speak up in class [5,6] and it was particularly interesting to see how our multicultural cohort behaved within situations of cultural uncertainty. None, regardless of nationality or cultural origin, felt able or confident enough in their abilities to volunteer questions in Mandarin, though questions in English were more forthcoming. Collectively, we did tend to remain silent unless directly questioned. Interestingly, during interludes we would animatedly engage with each other (in the lingua franca of English) to try to clarify areas of confusion. This was uncannily like the situated behaviour often witnessed among Chinese students during lessons back in the UK. On occasions they would spontaneously start discussing in Mandarin some sticking point until collective understanding had been reached, at which point silent attention would be returned to the topic at hand. Indeed, this was akin to behaviour previously observed in visiting UK design students from Coventry University who'd taken part in a ten-week study programme in China at Zhejiang University of Media and Communication (ZUMC). They too had also displayed collectivist, introverted behaviour under similar circumstances [7]. Within western institutions this sort of behaviour is often characterised as stereotypical of Chinese students [6] yet the direct evidence of my own experience and observations of my transcultural fellow students would appear to suggest that the phenomenon is not entirely attributable to cultural factors. While cultural difference might have a part to play, this situated

introversion and collectivism is likely to be explicable in terms of a routine universal human response to situations of anxiety, cognitive discomfort and the fear of personal embarrassment.

2.4 Fan dancing, conceptual thresholds and pedagogic empathy

For this academic, the lessons in traditional Chinese fan dancing represented something of a definite overload in personal embarrassment, situated discomfort and cultural uncertainty. Having first enjoyed a demonstration of a traditional Chinese fan dance given by a graceful dance teacher, thereafter, over a number of lessons, delegates were expected to learn a five-minute section of the routine which would then be performed in front of a small audience of teachers. It should be said that this authors has never knowingly displayed any talent for dancing. While initially embarrassed and uncoordinated, at some point a decision was made to simply enjoy it for what it was and to try to take something pedagogically meaningful from the experience. It occurred to me that I'd found myself at the boundaries of a conceptual pedagogical threshold.

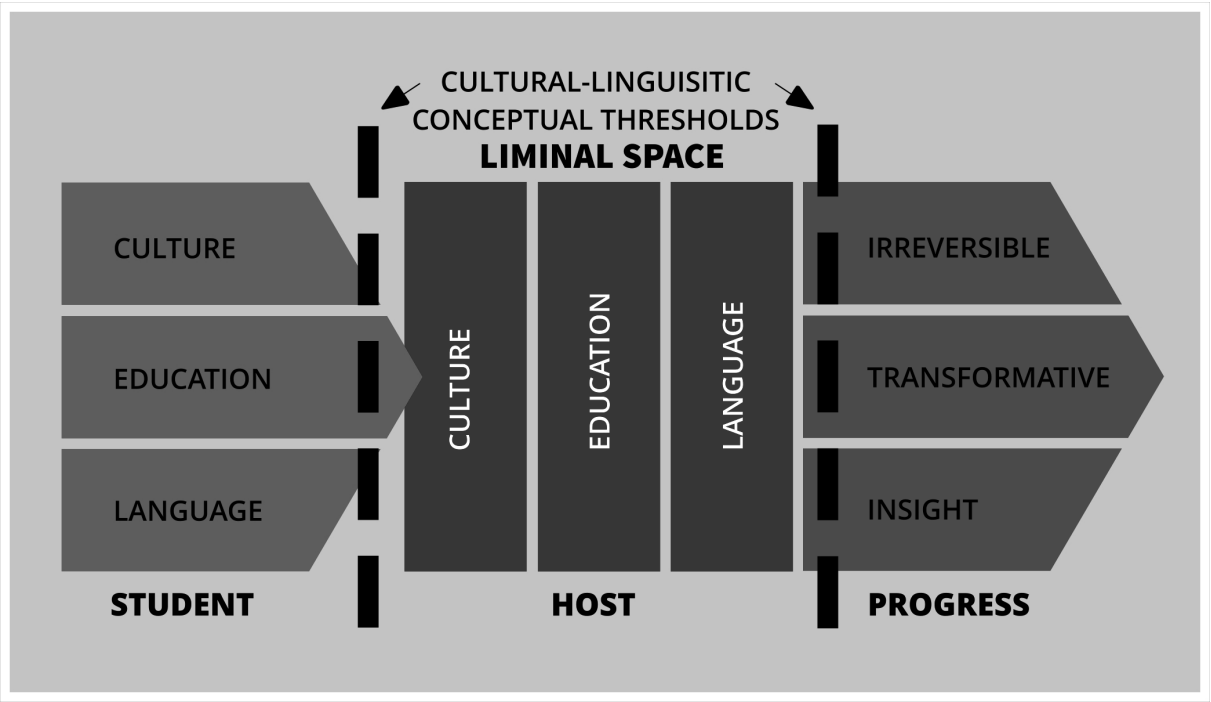

Figure 1. The liminal space - a place of uncertainty and potential learning crisis (SOURCE: The Author, 2016)

Threshold concept theory essentially holds that learners will, at some point, encounter a troublesome barrier to learning progression. Such conceptual learning thresholds are normal, unavoidable and must be successfully traversed in order to attain some higher, transformative and irreversible internal view of the subject landscape [8,9]. Osmond's writings on conceptual threshold theory are on its application in design education. Osmond identifies the toleration of design uncertainty as a conceptual threshold. In that context, the pedagogical threshold that I felt I was on the edge of traversing had nothing to do with dancing per se. Rather, it emerged from an accumulated perception of what it feels like to simultaneously experience the same situation from the perspective of both the student who struggles to understand and respond to the teacher's instruction, and of the equally bemused teacher who seems unable to elicit understanding from the student. In threshold concept theory terms, I suddenly recognized that I'd found myself within a liminal space - i.e., the space within which the learner struggles to understand and accommodate factors that combine to stymie learning progression. I'd experienced first-hand something of the cognitive and psychological discomfort that visiting Chinese students probably experience as they find themselves struggling to make sense of things they don't yet understand within a 'bubble' of uncertainty (liminal space) [8,9]. It was only with a cognitive, empathic shift in perspective from teacher to student that this awareness emerged. The challenge was how I could pedagogically use that understanding.

3 CASE STUDY 2

Shortly after my return to the UK the new intake of design students would be arriving at Coventry University for the first term to join three new postgraduate programmes: Industrial Product Design, Design and Transport, and Interior Design. This represented an ideal opportunity to refine and implement some of the ideas that had taken shape during my time at SOU. The original induction programme was amended to include a number of cross-cultural and cross-disciplinary bonding activities, with an emphasis on collaboration and an empathetic cultural outreaching.

3.1 Getting to know you - facilitating cultural assimilation

The new postgraduate course structure had been specifically designed to formalise the cross-disciplinary aspect of the teaching and learning philosophy with the first term's teaching being undertaken by all three postgraduate courses. During induction week students were given a foretaste of this way of working. They were advised from the outset that the three disciplines would be sharing the same studio space over the academic year and that they would be working on group projects collaboratively, across specialisms and transculturally. A number of short group projects were run with strategically-assembled teams comprising like numbers from each of the three courses and of a similar cultural mix. For each such project, new groups were formed afresh and the pace was deliberately kept high to help keep students focused on the task at hand rather than dwelling on socially-orientated anxieties. This strategy was also designed to eliminate the potential for student cliques to emerge along lines of culture, nationality or design specialism. Past experience had demonstrated that if cliques are formed early-on they can prove to be strongly enduring and that students within cliques are generally reluctant to form ephemeral working relationships with students outside them.

Throughout, the atmosphere was kept lighthearted and students were encouraged to have fun and take liberties with the challenges, the idea being that humour is an effective antidote to social anxiety. To further acclimatise students to the expected studio learning culture, they were gently and repeatedly reassured that those who asked questions when uncertain or who volunteered their opinions, far from losing face, actually gained kudos and respect in the eyes of the teaching team. It was emphasised that to do so is a mark of personal courage and intelligent concern for the student's own learning. Asking questions and speaking out were to be seen as signs of personal strength, not weaknesses or causes for social discomfort. By the end of the induction week it was observed that during interludes many students were voluntarily socialising with each other across cultural and design specialism boundaries both within and beyond the studio environment.

3.2 Designing a bandstand - transcultural and cross-discipline collaboration

The second week of the course saw the introduction of a live, competitive brief that was issued by the Friends of Coventry War Memorial Park (FCWM). The objective was to design a contemporary version of 'the bandstand' as a cultural and social focus within the park. The FCWM steering committee were specific in their requirement that the students should place the cultural and ethnographic social complexities of Coventry's demographic (including its transient student population) at the heart of their proposals and to look beyond the traditional notion of the bandstand as a place used solely for musical performance. In alignment with the established practice of the first week, groups were strategically formed as mixes of nationality and design specialisms. International students were particularly encouraged to bring their lack of cultural preconception to the project. The FCWMP were embracing of the multicultural, international complexion of the student cohort. Some twenty design proposals were presented for review by the judging panel comprising members of the FCWMP committee and six were shortlisted to form the basis of a public exhibition and vote. The standard of the student response to the brief was exceptionally high, impressing the teaching academics and the FCWMP committee alike. It was noted, both by the FCWMP committee and in the feedback to student presentations that a key factor in the success of the project had been the way that the groups had embraced the cross-disciplinary and cross-cultural aspect of team working while making the most of identified strengths within teams. It was also specifically mentioned that the unique perspective that international students had brought to the project had had a significant influence on the design direction of many of the projects.

4 CONCLUSION

A number of key findings emerged from the experience at SOU and from the subsequent bandstand project that were felt to be pedagogically valuable:

- China is investing heavily in learning technologies - especially ODL frameworks and is looking to expand the range of courses it can offer, including design specialisms. Yet even here, Chinese institutions recognise, specifically, the irreplaceable role of the design pedagogue and the increasing importance of an internationalised perspective and the teaching of critical and creative thinking.
- With transcultural cohorts, from the start, it is important in situations of collaborative working for teachers to create diverse groupings and to guard against the early formation of culturally-aligned cliques.
- To establish and cement a pattern of learning, students were constantly reminded that collaboration and the ability to adapt are normal, expected modes of behaviour and learning. Hence, short project groupings were ephemeral, helping to strengthen students' capacity to tolerate uncertainty and their abilities to cope with shifting cultural dynamics.
- Students were reassured from the outset that anxieties about failures of understanding and discomfort based on socially-intimidating experiences are normal and to be expected and can be openly discussed without embarrassment.
- In attempting to overcome cultural norms that incline them to situated introversion, students were conditioned through on-going reinforcement to accept that asking questions and discussing failures of understanding *gains* (rather than loses) face and respect.

As one Chinese survey respondent stated when asked (shortly after the bandstand project) what advice he would give to any Chinese student who was thinking about studying in the UK, 'To be open minded and enjoy the communication with their classmates. To try to understand and identify the different tendencies and styles depending in each student's background.'

REFERENCES

[1] Hall, E.T., *Beyond Culture*, 1989 (Anchor Books ed. New York).

[2] Page, Anna, *Eye Tracking in Research and Evaluation*, 5 February 2016, OpenLearn - Open University [online] available from http://www.open.edu/openlearn/science-maths-technology/engineering-and-technology/technology/eye-tracking-research-and-evaluation.

[3] PyGaze, *Open Source Eye-Tracking Software and More,* 5 February 2016, [online] available from <http://www.pygaze.org/>.

[4] Open University, *Q61 - BA/BSc (Honours) Design and Innovation - Open University Degre*e, 19 February 2016 [online] available from <http://www.open.ac.uk/courses/qualifications/q61>.

[5] Gieve, S. and Clark, R. T*he Chinese Approach to Learning: Cultural Trait or Situated Response? The Case of a Self-Directed Learning Programme*, 2005, System 33 (2), 261–276.

[6] Cheng, H.-Y. and Guan, S.-Y. *The Role of Learning Approaches in Explaining the Distinct Learning Behaviours Presented by American and Chinese Undergraduates in the Classroom,* 2012, Learning and Individual Differences, 22 (3), 414–418.

[7] Hilton, C. Why Internationalisation of Design Education Benefits UK Students. In *17th International Conference on Engineering and Product Design Education*, held 3-4 September 2015 at University of Loughborough.

[8] Meyer, J. and Land, R) *Threshold concepts and troublesome knowledge: linkages to ways of thinking and practising within the disciplines*, 2003, Occasional Report 4.[Cited 28 October 2012] Available from: http://www.etl.tla.ed.ac.uk/publications.html.

[9] Osmond, J. The scholarship of teaching: threshold concepts and research informed design education. In *DRS//CUMULUS Oslo 2013 Proceedings*. Oslo. 14-17 May. Volume 2: ISBN 978-82-93298-02-1.