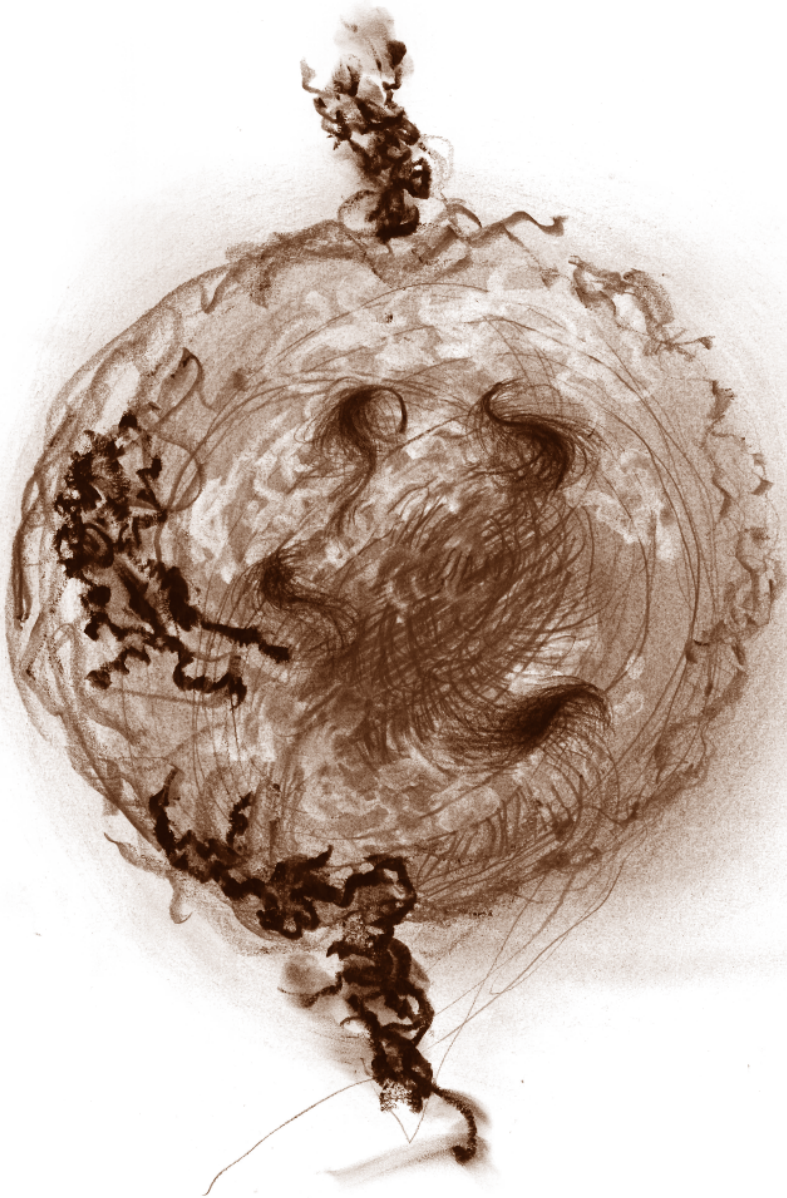# Signature Pedagogies in Design: Linking Teaching, Learning and Practice

Alison Shreeve

COLLECTION

04

ART+DESIGN \ EDUCATION

↘

alison.shreeve@bucks.ac.uk

Buckinghamshire New University, UK

Signature Pedagogies in Design: Linking Teaching, Learning and Practice.

Abstract

ALISON SHREEVE

This paper identifies signature pedagogies that are common to creative art and design subjects across four main disciplinary areas. Based on a study of tutors' understanding of learning activities they created for their students in six London colleges, it explores the key characteristics that prepare students for professions in art and design. Signature pedagogies help students develop the disciplinary ways of thinking, being and acting in the discipline, and vary between discipline areas. Having identified the pedagogic practices that are common to the four areas studied, the paper then discusses challenges to maintaining these practices given pressures facing art and design higher education in England today. In concluding it suggests that signature pedagogies will probably change in the coming decade, although creative tutors are likely to develop innovative approaches to their teaching, which will in part circumvent the pressures facing the sector currently.

Signature Pedagogies in Design: Linking Teaching, Learning and Practice.

ALISON SHREEVE

Buckinghamshire New University, UK
alison.shreeve@bucks.ac.uk

Signature Pedagogies

The idea that teaching and learning differs from discipline to discipline has been identified through notions of 'academic tribes and territories'[1] where different cultures have evolved, with distinct boundaries between the languages and social practices of each discipline. Such definite distinctions have been softened by research suggesting that these boundaries are more fluid and that metaphors such as rivers and landscapes are more appropriate means to conceive of disciplines and subjects. In such models different groups overlap or intermingle, or sometimes come together in joint activities[2]. Although debate about disciplinary difference has ebbed and flowed, much research suggests that there are differences between subject groups that are partly social, incorporating different language, concepts and practices. More recently the idea of 'signature pedagogies'[3] has identified that not only are there differences in academic content and language, but also in the ways that students learn the content of their disciplines, particularly where these are related to professions[4]. Signature pedagogies are those ways of teaching and learning that specifically prepare students for ways of thinking, being and acting in the professions. It is the 'specific external point of reference'[5] that distinguishes such disciplines as art and design, engineering, medicine, law and education within the university; there is a close relationship between the practices beyond academia and the learning activities which students undertake. The pedagogies that help to create the links and prepare students for the professions are 'pervasive, routine and habitual' within the discipline[6]. In law Shulman identifies case teaching, in nursing there are simulated hospital wards, often referred to as learning laboratories and in design there have been classic studies of studio based learning observed by Schön and summarised by Waks[7].

Signature Pedagogies in Art and Design

The influence of Schön's writings has become central to many practices in higher education in the UK, particularly the idea of reflection, or reflection in action. His analysis of learning through the design studio[8] remains a classic work in the study of specific disciplinary practice in the arts. A more recent publication exploring signature pedagogies across disciplines, however, specifically identified the critique as a particular form of learning which pervades the visual and performing arts[9] including design. The idea of signature pedagogies common to four disciplinary art and design subjects was an outcome from an investigation into teaching and learning practices at the University of the Arts London. Shreeve *et al*[10] suggest that there are further characteristic ways of teaching and learning that contribute to 'disciplinary ways of knowing' in art and design, including the crit previously identified by Klebsedel and Kornetsky.

The 'Landscapes of Teaching' project was carried out at the University of the Arts London, across six colleges and four subject areas. Specifically the research questions were:

• What is distinctive in the teaching and learning practices in the disciplines of Fine Art, Graphic Design, Design for Performance and Fashion Product Design?

• What explanations are there for these distinctive characteristics?

• What is the significance of teaching and

1   Becher, T. (1989) *Academic Tribes and Territories: intellectual enquiry and the culture of disciplines. Milton Keynes SRHE/Open University Press, Becher, T. & Parry, S. (2005) "The Endurance of the Disciplines".* In Bleikle, I., & Henkel, M. (Eds) *Governing Knowledge: a study of continuity and change in higher education.* Dordrecht, Springer pp 133-143.

2   Brew, A. (2008) "Disciplinary and Interdisciplinary Affiliations of Experienced Researchers." Higher Education, 56(4), 423-438.

3   *Shulman, L. S. (2005b). "Signature pedagogies in the professions." Daedalus 134(3): 52-59*

4   *Ibidem.*

5   Squires, G. (2005). "Art, Science and the Professions." *Studies in Higher Education,* 30(2), p. 127.

6   *Shulman 2005b, op. cit.,* p 3.

7   *Waks, L.J. (2001) "Donald Schon's philosophy of design and design education." International Journal of Technology and Design Education.* 11(1) 37-5.1.

8   Schön, D. A. (1985). *The Design Studio: An Exploration of Its Traditions and Potentials.* London: RIBA Publications Ltd.

9   Klebsedel, H. & Kornetsky, L. (2009). "Critique as Signature Pedagogy in the Arts". In Gurung, R. A. R., Chick, N. L. and Haynie, A. (Eds). *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind.* Sterling VA: Stylus.

10   Shreeve, A., Sims, E. & Trowler, P. (2010). "'A kind of exchange': Learning From Art and Design Teaching." *Higher Education Research and Development.* 29 (2), 125-138.

learning spaces in relation to these distinctive practices in the art and design disciplines studied?

The report of the project is available online[11] and sets out in more detail the methodology underlying the research. In brief, a team of teacher researchers interviewed colleagues through a visual elicitation process that centred the interview discussion around a photograph of the tutor's teaching environment. A set of semi-structured interview questions was agreed by the team of researchers to provide some consistency to the process. The questions referred to the visual representation of the learning activity selected by the respondent. This positioned the discussion in an actual teaching event in order to avoid espoused theories of teaching, although we recognise that each individual will bring their own interpretations to the discussion. In addition, an alternative image to that selected by the respondent was presented in order to raise further debate about learning activities in the particular subject area involved. All interviews were audio recorded and transcribed verbatim. The group of tutors came together to analyse transcripts thematically, agreeing on the following overarching categories for analysis: student, tutor, space and discipline. There were differences within and between the different discipline groups and these have been explored elsewhere[12]. In undertaking further analysis that looked for commonalities across the disciplines, Shreeve *et al*[13] proposed that these common pedagogies were the signature pedagogies for art and design disciplines.

The following section identifies these signature pedagogies in more detail, the claims being illustrated by quotations from interviews in the Landscapes of Teaching project. The fundamental idea of signature pedagogies supporting learners to develop disciplinary ways of thinking[14] is evidenced by the tutors' intentions for students in this study. Here they want students to learn to practice as a professional and to understand what it is to be a designer:

"I think that there's all kinds of things about being an artist that are about the way in which you engage with the world. I think that you need to be very resilient to work in the industry that we work in. It's tiring, you work long hours. It's emotionally exhausting and all those things. In a way students need to be given a sense of what it actually means rather than it being a nice thing to do when you can't think of what else to do".

This emphasis on understanding what it means to be a designer or an artist underpins the pedagogic practices described by the respondents in the research. There is less emphasis on the content of teaching and more in the development of identity as a practitioner. This approach to learning and teaching has been described by Dall Alba & Barnacle[15] as an ontological approach, i.e. one that seeks to develop the whole person and their identity within the subject, not simply focusing on the epistemological aspects of the discipline or the content. In design terms, Cross identifies that students need to learn '"designerly" ways of knowing, thinking and acting'[16]. This understanding of practice beyond the university is key to signature pedagogies in general and to art and design in particular, where 'real world' relations are characteristic of learning. These vary from learning activities determined through the project brief, which mirrors those used in industry and may indeed have been set by industry partners, to the use of part time faculty who are simultaneously practitioners and teachers[17]. The close relation between learning in university and the world of the designer has been tracked through the similarities of language used by both students and design companies[18]. This suggests that the pedagogies used help to prepare students for the professions they will enter on graduating fulfil Shulman's criteria for signature pedagogies. Students may also spend periods of time in work related learning off campus in which they learn about the myriad variations and specific work-

[11] Sims, E. (2008). *Teaching Landscapes in Creative Arts Subjects. Report on the CLIP CETL Funded UAL Research Project*. Retrieved on September 29, 2010, from: http://www.arts.ac.uk/docs/Landscapes-final-report.pdf.

[12] See http://www.arts.ac.uk/clipcetl-landscapes for further information.

[13] Shreeve *et al* (2010), *op. cit.*.

[14] Gurung, R.A. R., Chick, N. L. and Haynie, A. (Eds). *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind. Sterling* VA: Stylus.

[15] Dall'Alba, G. & Barnacle, R. (2007). "An ontological turn for higher education." *Studies in Higher Education* 32(6): 679-692.

[16] Cross, N. "Designerly Ways of Knowing: Design Discipline versus Design Science". *Design Issues* 17(3), p. 53.

[17] Shreeve, A. (2009). "'I'd rather be seen as a practitioner, come in to teach my subject': Identity Work in Part -time Art and Design Tutors." *International Journal of Art and Design Education*. 28(2), 151-159; Shreeve, A. (2010). "A Phenomenographic Study of the Relationship Between Professional Practice and Teaching Your Practice to Others." *Studies in Higher Education*, 35(6), 691-703; Shreeve, A. (2011). "Being in Two Camps: Conflicting Experiences for Practice-Based Academics." *Studies in Continuing Education*, 33(1), 79-91.

[18] Logan, C., D (2006). "Circles of Practice: educational and professional graphic design." *Journal of Workplace Learning* 18(6): 331-343.

ing practices of different companies[19], situations in which their identities as designers are enabled to grow. The following pedagogies are common ways to develop such kinds of knowing, but these do not exclude other pedagogies employed by tutors in design disciplines.

Working with ambiguity

Central to design learning is the development of creative thinking approaches and finding and exploring ways to create novel solutions to complex problems. Although informed by declarative knowledge such as historical information, materials science and technological processes, the design process is full of uncertainty and ambiguity, often dealing with 'wicked' problems. Similarly the learning environment is characterised by 'uncertainty'[20], or a 'pedagogy of ambiguity'[21] in which instruction by the tutor is seldom clear, as the tutor may also be in a position of uncertainty, also engaging with unknown outcomes alongside the student. This presents challenges for the tutor as well as the student.

"...Your relationship to students is different from student to student. There are some students that come to an idea which I just can't get my head around. But I trust them and I'll say go with your instinct because they're a strong student. Students will come up with ideas that you couldn't possibly have thought of yourself and it's really exciting. They're manipulating and changing materials and enquiring at it from a different direction and I find that very special."

This sense of exploration and discovery is both exciting and challenging for students, who may be newly introduced to the idea of learning through discovery in higher education.

If tutors are unable to provide clear instruction, students who are unable to cope with ambiguity may find learning a challenge. Here a tutor attempts to describe this sense of the unknown journey that students, and to some extent tutors,

embark on through the design process:

"I'm not trying to get them to go 'there'. What I'm preparing them to do is to be better equipped to deal with it when they decide to go 'there'."

Students who are less attuned to cues in the learning environment or perhaps ill prepared for ways of working and learning which require coping with ambiguous situations struggle to maintain a foothold in their studies. The need to work through uncertainty has been described as a threshold concept for design students[22]. Such living with and through uncertainty and complexity has been identified by Barnett[23] as a prerequisite for learning in the university of the 21st century. Design, it could be argued, has pedagogic models that may benefit other disciplines struggling to equip students for a future of chronic uncertainty. The places where students are taught help to counteract the challenges of ambiguity in the learning process, through encouraging social learning practices.

The Studio

Many exchanges take place in the studio, which has been identified by Schön[24] as a particular culture, a mode of teaching and a location. Smith-Taylor[25] claims that the studio helps to structure student centred learning, because there is no central point from which to lecture or instruct the student. However, this view has been counteracted by those who see poor teaching practice taking place where tutors simply 'cruise' through the studio dispensing wisdom and their own points of view, a tutor-focused, transmission approach to teaching[26]. For many, the idea of the studio is much more about location, a home base, a familiar territory. This is important, as the very act of learning to engage with ambiguity and the unknown requires courage and a safe place from which to venture forth into unknown territory. As one student said in a small scale (unpublished) study "we don't have dedicated space where we

19 Shreeve, A. & Smith, C. (2011) "Multi-directional Creative Transfer Between Education and Work." *British Educational Research Journal.* Online: http://www.tandfonline.com/doi/abs/10.1080/01411926.2011.560245.

20 Shulman, L. S. (2005a). "Pedagogies of Uncertainty." *Liberal Education.* 91, 18-25.

21 Austerlitz, N., Blythman, M., Grove-White, A., Jones, B.A., Jones, C.A., Morgan, S., Orr, S., Shreeve, A., Vaughan, S. (2008). "Mind the Gap: Expectations, Ambiguity and Pedagogy Within Art and Design Higher Education". In L. Drew (Ed), T*he Student Experience in Art and Design Higher Education: Drivers for Change.* Cambridge: JRA Publishing.

22 Bull, K., Tovey, M. & Osmond, J. (2009). "Threshold Concepts and the Transport and Product Design Curriculum: reports of research in progress." *Art, Design and Communication in Higher Education.* 8(2), 169-175.

23 Barnett, R. (2000). *Realizing the University in an Age of Supercomplexity.* Philadelphia: SRHE/ Open University Press.

24 Schön (1985), *op. cit.*.

25 Smith Taylor, S. (2009). "Effects of Studio Space on Teaching and Learning: Preliminary Findings From Two Case Studies." *Innovative Higher Education.* 33(4), 217-228.

26 Prosser, M. & Trigwell, K. (1999) *Understanding Learning and teaching.* Buckingham: SRHE/Open University Press.

can feel safe to leave things". Students not only feel the need to 'leave things' such as ongoing work, but they require social spaces in which they develop peer learning. They, together with their tutors, create course cultures which help to develop an identity as a design novice. Here they can gain confidence that in the ambiguous territory of design pedagogy they have some stability and can feel 'safe'. This is summed up by a student (from a different study) who has these things:

"They do make you work together and that's really good because I know people on different courses and they're in college for one day a week and they see for about 2 hours a day or something, and it doesn't seem to be the same thing, whereas we study together, we all go out together. I don't know if that's just our course or whatever but that way that it's set up is really good. It's really nice we've got a kind of little course family as it were."

When students have a space, even if it is shared, it provides a mirror of professional practice and an opportunity to experience the kinds of working environments likely to be encountered on graduation, thus helping to create disciplinary ways of thinking[27]. Where tutors no longer had access to a dedicated studio space in the Landscapes project, they modified and adapted the environment to provide as much continuity or sense of belonging and ownership of the studio space as they could:

"There's shared studio spaces so we tend to mix up second and third year, so in this space there would be about five students ... placed ... We try to place people together. We maybe have complimentary or different practices to make best use of the space. The space is used quite flexibly."

Several tutors commented on the importance of planning or the need to be imaginative in the use of space in order to provide a version of the studio experience that they valued:

"It's quite complicated. You have to, if you've got a full class which involves use of the stitch workshop in a formal way rather than just elective use of the workshop. One has to divide the group into half and have half in the studio and half in the workshop and then swap them over in the course of one day to get them all through that experience... So it's quite... it has to be organised but it's not that difficult, but it does have to be thought through and by arrangement with the technician."

Thus the studio as a learning environment remains a key component of pedagogies in art and design and a site where specific activities such as the critique (crit) take place.

The Crit

Critical thinking skills, which are an essential part of the learning process, are epitomised by the 'crit', identified as a signature pedagogy by Klebsedel and Kornetsky[28]. The crit may take many forms and in some cases is unlikely to be a constructive learning process[29]. However, the crit has become so embedded in the pedagogies of art and design that it constitutes the singular most recognisable form of pedagogy the disciplines have. This is perhaps surprising as the crit, in forms we experience in education, is unlikely to take place in the world beyond the university. Where it is most successful as a teaching method, the crit will involve students in dialogue and discussion in smaller groups. It provides an opportunity to articulate the often tacit understanding and evaluation of design processes, enabling the development of critical thinking skills essential to design.

Dialogue

Central to the crit is the opportunity to talk, discuss, debate and explain ideas. The dialogue that takes place in the studio and in activities between peers and tutors in any learning environment is a significant component of signature pedagogies for design.

"I think what maybe really helps is the constant discussion and talk, because that's part of the set up, it's part of the physical set up of any studio. You are learning, you are discussing, you are talking, you know whether it's to a peer or with me, you know, and that all builds; it is a continual learning curve, and you get something out of it at the end of the day, even if it's frustrating, and it hasn't turned out how you needed it

[27] Gurung *et al* (2009), *op. cit.*.
[28] Klebsedel and Kornetsky (2009), *op. cit.*.
[29] Blair, B. (2007). "At the End of a Huge Crit in The Summer, It Was Crap - I'd Worked Really Hard But All She Said Was "Fine" and I Was Gutted." *Art, Design and Communication in Higher Education*. 5(2), 83-95; Blythman, M., Orr, S. & Blair, B. (2007). *The Strengths and Weaknesses of the Crit – A Discussion Paper*. Retrieved September 29, 2010, from: http://www.adm.heacademy.ac.uk/projects/adm-hea-projects/learning-and-teaching-projects/critiquing-the-crit.

to turn out, you know, there's just something tangible that you can hold."

The key characteristics of design pedagogies identified in the Landscapes of Teaching project were those that enabled dialogue, or 'a kind of exchange'[30] to take place between tutors and students. The dialogic nature of teaching in design is critical and the forms this takes are numerous. They include one to one discussions, in small groups, large groups and in formally structured and informal occasions in the studio or other situations within and beyond the university. Dialogue was therefore identified as a signature pedagogy, because the exchange or discussions held enabled students and tutors to explore how a designer might think in practice. The exchange helped to elucidate the process of questioning, thinking about and evaluating potential ideas and solutions, helping students to develop those kinds of ways to approach design. The complexities of dealing with the unknown and partly foreseen opportunities inherent in creative practice are explored obliquely through such exchanges.

Materiality

The dialogic nature of learning and teaching is not solely the province of verbal language. The physical and material aspects of learning are very palpable components of pedagogies in art and design where knowing is an embodied experience[31] and much learning remains an inculcation of tacit knowledge developed through practice[32]. In this example the tutor is explaining that students need to have a dialogue with the materials they use and the understanding of materials is an important part of the designer's practice.

"This project is for those students who enjoy working purely speculatively in response to materials being handled, using a mixture of experiments, chance and control. So what's happening really is that they have to develop a dialogue between themselves and materials that are in front of them."

For the tutor, the materiality of the learning

process enables them to also centre a discussion of progress, learning and development around an artefact, not the student themselves.

"So they do have these artefacts, which represent their learning. These sorts of symbols of their learning which you can engage them with. Sit down with them and talk about this, this work that's outside of their head."

Materiality is therefore central to the discipline, the learning activity and the dialogue that takes place in the studio. Having physical objects available for all to see enables discussion, participation and exchanges to take place between learners. It is through visual and material means that students begin to evolve potential outcomes in the research process, often through the use of sketchbooks, samples and prototypes. These material forms of thinking enable dialogue to take place and help to develop the kinds of embodied knowing that designers need. This 'material thinking'[33] supports learning about the design process through 'authentic' learning experiences. Within the university the use of sketchbooks, or other means of reflective drawing, thinking and evolution of design ideas is an important place of materiality. The evidence of thinking helps to develop the students' designerly knowledge and enables the tutors to question and prompt the student, to challenge ideas, see potential and alternatives and so progress their ability to think in designerly ways.

This summary of five pedagogic practices that help to develop students' ways of thinking, being and acting like a designer represent the core practices of the creative disciplines[34]. Other forms of teaching and learning are obviously employed to good effect, but those described above summarise the common elements of pedagogic practice that were the outcome of the Landscapes of Teaching research project.

Challenges

There were also pressures on these signature pedagogies evidenced in the research study. Here a tutor identifies the unease with which certain kinds of standardised pedagogic practice have in-

30   Shreeve *et al* (2010), *op. cit.*.

31   Danvers, J (2006). "The Knowing Body: Art as an integrative system of knowledge". In Hardy, Tom (Ed) *Art Education in a Postmodern World: Collected Essays*. Bristol, Portland OR, Intellect, 77-90.

32   Dormer, P. (1994). *The Art of the Maker*. London: Thames and Hudson.

33   Carter, quoted in Bolt, B. (2006). "Materializing pedagogies." *Working papers in Art and Design* 4. Retrieved March 2011 from http://sitem. herts.ac.uk/artdes_research/papers/wpades/vol4/bbfull.html.

34   Also see Sims, E. & Shreeve, A. (2012) "Signature Pedagogies in Art and Design". In Chick, N.L, Hanie, A & Gurung R.A.R. (Eds) *Exploring More Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*. Chapter 5.

filtrated learning in design disciplines:

"...We are possibly dominated slightly by the assessment process...but it's not just in assessment that we are dominated by that process of standardisation, you know, attempts to make little containers for everything. I mean especially in design where things don't fit into containers... So I think we have a problem in design education particularly."

Changes in academic practice have arguably altered the university from a culture of trust to one of accountability and transparency, with a visible increase in bureaucratic procedure[35]. Through the kinds of accounting and measuring of student progress that such changes demand, there is a danger that the kinds of learning that are difficult to measure, such as ontological approaches to learning, are likely to be replaced by those that are more directly measurable[36]. The signature pedagogies identified as common to art and design higher education may be subject to similar pressures as those that affect art education in schools[37], where proscriptive and centrally generated demands have created particular 'pedagogised identities' in art. There is a danger that more pressure on academics to conform will lead to a reduction of autonomy and creativity in the pedagogies of our disciplines.

The pressure of increased student numbers and less individual or studio spaces to work is also evidenced in the Landscapes of Learning project. Tutors in this study work hard to generate flexible use of space and recreate situations that the traditional studio provides. For example this tutor designs activities to develop social learning within the cohort through trips:

"...Our students live all over London and they don't really socialise. We take them on trips and do things to try and get them to meet each other and know each other in a social context."

A similar social learning approach is achieved through devising team projects:

"If you can encourage each student to work as a team then I think it's really vital for their learning and I think once they get to know each other and they have put down their barriers they find it re-

warding... it builds their confidence and their self esteem being in a group working together and actually learning from each other."

However, the studio provides an opportunity to create the 'kind of exchange', the dialogue, which we identified as a key signature pedagogy. If fewer physical places exist to support opportunities to practice and create dialogue this may impact the 'overlapping circles of language'[38] that characterise the relationship between the academic and professional worlds of design. Less studio space also means less space to produce visible (material) work and students who have to share spaces take away ongoing work so that the richness of the material world of the studio is diminished.

Conclusion

The signature pedagogies identified here are a common denominator in the design disciplines studied. They are an outcome of enquiry into teachers' use of learning spaces and what they do when they teach. They are fundamental aspects of a very rich and broad range of educational experiences created in order for students to learn what it means to become a design practitioner. Signature pedagogies have been identified as those educational practices that have developed and become ubiquitous precisely in order to bridge the academy and the world of the professions. In more traditional pedagogies, such as the lecture, which are more likely to be tutor-focused, transmission approaches to teaching, there is no opportunity for dialogue which is a key in learning to think like a designer, particularly when design practitioners are involved. Discussion, debate and questioning, supported by objects, materials, sketches and work in progress enable the tacit knowledge and experience of the expert to become visible. Students are learning how to question, to look, frame new ways to see problems, consider multiple possibilities and to make judgements. The 'kind of exchange' and the ambiguity of language, the lack of direct instruction, the demonstration of different viewpoints and opinions creates a 'pedagogy of ambiguity' for students. But it is precisely this state of ambiguity that is crucial to creative development, and learning to make informed decisions and take responsibility for one's actions.

[35] Strathern, M. (2000). "The Tyranny of Transparency." *British Educational Research Journal* 26(3): 309 - 321, Hussey, T. & Smith, P. (2010). *The Trouble with Higher Education: a critical examination of our universities.* New York and Abingdon: Routledge.

[36] Dineen, R. & Collins, E. (2005) "Killing the Goose: Conflicts between Pedagogy and Politics in the Delivery of a Creative Education." *International Journal of Art and Design Education.* 24(1), 43-52.

[37] Atkinson, D. (2002). *Art in Education: identity and practice.* Dordrecht/ Boston/ London: Kluwer Academic Publishers.

[38] Logan (2006), *op. cit.*.

These fundamental pedagogical approaches are dependent on resources such as space, people with time to talk and opportunities for sharing work in progress. Acceptance of ambiguity and uncertainty in the language used and in the mode of instruction is part of the learning and inculcation into the material world of the designer. The study also indicated that tutors were very creative and able to adapt their teaching strategies in order to maintain what they believed were important environments and activities for learning. The fundamental needs of design education to maintain practices that prepare students and make links to the world of the designer will continue to generate signature pedagogies. However, these may be subject to change as technologies, design practices and economic constraints change in future. In ten years time it will be interesting to see how the signature pedagogies of design have altered, or how creative tutors have circumvented the challenges to create and maintain the signature pedagogies described here, which help to develop the creative thinkers of the future.

REFERENCES

Atkinson, D. (2002). *Art in Education: identity and practice.* Dordrecht/ Boston/ London: Kluwer Academic Publishers.

Austerlitz, N., Blythman, M., Grove-White, A., Jones, B.A., Jones, C.A., Morgan, S., Orr, S., Shreeve, A., Vaughan, S. (2008). "Mind the Gap: Expectations, Ambiguity and Pedagogy Within Art and Design Higher Education". In L. Drew (Ed), *The Student Experience in Art and Design Higher Education: Drivers for Change.* Cambridge: JRA Publishing.

Barnett, R. (2000). *Realizing the University in an Age of Supercomplexity.* Philadelphia: SRHE/ Open University Press.

Becher, T. & Parry, S. (2005) "The Endurance of the Disciplines". In Bleikle, I., & Henkel, M. (Eds) *Governing Knowledge: a study of continuity and change in higher education.* Dordrecht, Springer pp 133-143.

Becher, T. (1989) *Academic Tribes and Territories: intellectual enquiry and the culture of disciplines.* Milton Keynes SRHE/Open University Press.

Blair, B. (2007). "At the End of a Huge Crit in The Summer, It Was Crap - I'd Worked Really Hard But All She Said Was "Fine" and I Was Gutted." *Art, Design and Communication in Higher Education.* 5(2), 83-95.

Blythman, M., Orr, S. & Blair, B. (2007). *The Strengths and Weaknesses of the Crit – A Discussion Paper.* Retrieved September 29, 2010, from: http://www.adm.heacademy.ac.uk/projects/adm-hea-projects/learning-and-teaching-projects/critiquing-the-crit.

Bolt, B. (2006). "Materializing pedagogies." *Working papers in Art and Design* 4. Retrieved March 2011 from http://sitem.herts.ac.uk/artdes_research/papers/wpades/vol4/bbfull.html.

Brew, A. (2008) "Disciplinary and Interdisciplinary Affiliations of Experienced Researchers." *Higher Education*, 56(4), 423-438.

Bull, K., Tovey, M. & Osmond, J. (2009). "Threshold Concepts and the Transport and Product Design Curriculum: reports of research in progress." *Art, Design and Communication in Higher Education*. 8(2), 169-175.

Clarke, A. and Budge, K. (2010). "Listening for Creative Voices amid the Cacophony of Fiscal Complaint About Art and Design Education." *International Journal of Art and Design Education*. 29(2), 153-162.

Cross, N. "Designerly Ways of Knowing: Design Discipline versus Design Science". *Design Issues* 17(3), 49-55.

Dall'Alba, G. & Barnacle, R. (2007). "An ontological turn for higher education." *Studies in Higher Education* 32(6): 679-692.

Danvers, J (2006). "The Knowing Body: Art as an integrative system of knowledge". In Hardy, Tom (Ed) *Art Education in a Postmodern World: Collected Essays*. Bristol, Portland OR, Intellect, 77-90.

Dineen, R. & Collins, E. (2005) "Killing the Goose: Conflicts between Pedagogy and Politics in the Delivery of a Creative Education." *International Journal of Art and Design Education*. 24(1), 43-52.

Dormer, P. (1994). *The Art of the Maker*. London: Thames and Hudson.

Gurung, R.A. R., Chick, N. L. and Haynie, A. (Eds). *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*. Sterling VA: Stylus.

Hussey, T. & Smith, P. (2010). *The Trouble with Higher Education: a critical examination of our universities*. New York and Abingdon: Routledge.

Klebsedel, H. & Kornetsky, L. (2009). "Critique as Signature Pedagogy in the Arts". In Gurung, R.A. R., Chick, N. L. and Haynie, A. (Eds). *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*. Sterling VA: Stylus.

Logan, C., D (2006). "Circles of Practice: educational and professional graphic design." *Journal of Workplace Learning* 18(6): 331-343.

Prosser, M. & Trigwell, K. (1999) *Understanding Learning and teaching*. Buckingham: SRHE/Open University Press.

Schön, D. A. (1985). *The Design Studio: An Exploration of Its Traditions and Potentials*. London: RIBA Publications Ltd.

Shreeve, A. & Smith, C. (2011) "Multi-directional Creative Transfer Between Education and Work." *British Educational Research Journal*. Online: http://www.tandfonline.com/doi/abs/10.1080/01411926.2011.560245.

Shreeve, A. (2009). "'I'd rather be seen as a practitioner, come in to teach my subject': Identity Work in Part -time Art and Design Tutors." *International Journal of Art and Design Education*. 28(2), 151-159.

Shreeve, A. (2010). "A Phenomenographic Study of the Relationship Between Professional Practice and Teaching Your Practice to Others." *Studies in Higher Education*, 35(6), 691-703.

Shreeve, A. (2011). "Being in Two Camps: Conflicting Experiences for Practice-Based Academics." *Studies in Continuing Education*, 33(1), 79-91.

Shreeve, A., Sims, E. & Trowler, P. (2010). "'A kind of exchange': Learning From Art and Design Teaching." *Higher Education Research and Development*.29 (2), 125-138.

Shulman, L. S. (2005a). "Pedagogies of Uncertainty." *Liberal Education*. 91, 18-25.

Shulman, L. S. (2005b). "Signature pedagogies in the professions." *Daedalus* 134(3): 52-59.

Sims, E. & Shreeve, A. (2012) "Signature Pedagogies in Art and Design". In Chick, N.L, Hanie, A & Gurung R.A.R. (Eds) *Exploring More Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind*. Chapter 5.

Sims, E. (2008). *Teaching Landscapes in Creative Arts Subjects. Report on the CLIP CETL Funded UAL Research Project*. Retrieved on September 29, 2010, from: http://www.arts.ac.uk/docs/Landscapes-final-report.pdf.

Smith Taylor, S. (2009). "Effects of Studio Space on Teaching and Learning: Preliminary Findings From Two Case Studies." *Innovative Higher Education*. 33(4), 217-228.

Squires, G. (2005). "Art, Science and the Professions." *Studies in Higher Education*, 30(2) 127-136.

Strathern, M. (2000). "The Tyranny of Transparency." *British Educational Research Journal* 26(3): 309 - 321.

Trowler, P. (1998) *Academics Responding to Change: New Higher Education Frameworks and Academic Cultures*. Buckingham: Open University Press.

Waks, L.J. (2001) "Donald Schon's philosophy of design and design education." *International Journal of Technology and Design Education*. 11(1) 37-5.1.