

Drawing pedagogies in higher education: the learning impact of a collaborative crossdisciplinary drawing course

Introduction

Manual drawing has a place within many higher education (HE) art and design courses, although there are disparate underpinning ideas about its purpose and status. A number of the common learning and teaching approaches to drawing within UK art schools have been critiqued: Petherbridge and others have questioned the ‘entrenched’ adherence to nude life drawing as a core element of art school drawing (2010; Nead, 1992; Mayhew, 2008), Brew has challenged and suggested modifications to the dominant pedagogical approach to ‘learning to look’ (2015) and Faure Walker has highlighted the strong tendency towards relativism as problematic to drawing’s disciplinary coherence (2005). Whilst drawing practice is increasingly being referred to as an ‘expanded field’ (Chorpening, 2014), new ways of framing a pedagogy of drawing have been proposed, notably by Riley (2008), who argues that the changes in the organization of art education and the methods of drawing tutors are “rarely explicitly discussed in art schools” (2008, 154). In this context, Riley argues, there is a need for the philosophical foundations of drawing, from which ontological attitudes and approaches to drawing arise, to be better articulated.

The pedagogy of drawing does not exclusively concern the domain of HE art and design, however. It has been argued that drawing can be a valuable learning tool across a range of disciplines (Ridley and Rogers, 2010) and the boundary between learning drawing as a subject in its own right, and learning with or through drawing,

is blurred. In natural and applied science subjects, manual drawing has been (and still is) used for observation, recording, analyzing, planning and revising (Lerner, 2007; Ridley & Rogers, 2010) yet such drawing can also at times be perceived as, or to have a relationship to, 'art'. Manual drawing has had a particularly strong role within the history of medicine and medical education since before da Vinci. In the UK, for example, drawing is available within many contemporary UK medical schools through the Student Selected Component (SSC) options and such courses are also offered as part of medical education many other countries. In these courses the terms 'art' and 'drawing' tend to be taken as self-defining, or as defined implicitly by the involvement of specialist staff from arts colleges, and their espoused aims and impacts vary widely. They are described, for example, as able to: "develop creative sensibilities" and strengthen critical thinking and analytical skills" (Jacobs School of Medical and Biomedical Sciences), and as promoting metacognition (Naug, Colson and Donner, 2011). What is less often explicitly examined is the conceptual basis from which drawing is taught and how this relates to, and affects, students' learning.

From these contexts, it would seem there is a case for art and design and medical education, individually and jointly, to continue to investigate, challenge and debate drawing pedagogies and the impact of such pedagogies on students' learning. This study hopes to contribute to this process of investigation and debate, informed by selected theories and critiques of drawing pedagogy, through a detailed consideration of a specific drawing course which is designed and run by an art school and offered to both medical and craft students.

Background to the research: the [anonymised reference] course

The [anonymised reference] research team at the [anonymised reference to institution] began its research into the crossdisciplinary educational drawing course, known as [anonymised reference], in [anonymised reference to date]. This had emerged from the experience of running a series of experimental pedagogical projects, which brought undergraduate students on the Bachelor of Medicine Bachelor of Surgery programme (hereafter referred to as medical students) and students of the Three Dimensional Design and Craft programme (hereafter referred to as craft students) together in collaborative design tasks. The [anonymised reference to institution] has both arts and (joint) medical educational provision [anonymised reference to school names] enabling pedagogical and research collaboration and exchange between the disciplines.

The [anonymised reference to name of art school] runs the [anonymised reference to name] course. It does not require students to have any prior drawing experience or 'skill' and this is made clear when the course is advertised. Medical students are able to choose the course as one of their options (known as 'Student Selected Components' or SSCs) and are required by their regulations to submit a reflective diary for their assessment. Craft students, governed by different regulations, do not have an assessment requirement.

The course consists of sessions that take place once per week, for three hours, over a period of eight weeks. Instructions for the tasks, guidance on techniques and feedback

on work produced are provided by a single experienced drawing tutor. The tutor closely guides and times the elements of the sessions, which involve a range of drawing tasks, moving from quick 'warm-ups' to longer exercises, all of which relate to the human body as a theme. The drawing subjects include a paper model of a skeleton, a nude life model, students' own (clothed) bodies and cadaveric specimens in a human anatomy laboratory. Each course session concludes with a reflective discussion of around half an hour to enable students to consider their experience and bring it into different perspectives and contexts through dialogue with the group. This latter component is both a pedagogical and a research strategy, and is also discussed under the section on methodology.

Methodology and methods

The theoretical basis of this research draws on Vygotsky's social development thinking (1978) in which social interaction is seen as central to the process of meaning-making and the development of cognition and the process of individual development is understood to be embedded in social and cultural contexts. Cognitive functions are affected by cultural beliefs, values and tools and learning tends to occur through cooperative or collaborative dialogue. The research also draws on situated learning theory (Lave and Wenger, 1990) in terms of the shaping effect on learning of different groups, spaces and environments. As the research aim was to explore the impact of collaborative drawing upon learning in a cross-disciplinary group, this pointed to the value of an ethnographic approach that could look broadly at the complex array of activities, behaviour and interactions that arose during the course. The research team comprised the drawing tutor, who also fed into the research

process, two members of research staff (with backgrounds in arts and humanities) present throughout the course and a fourth member of the team, a senior medical practitioner, educator and researcher, who commented on the final script. Taking the course as a bounded case study, the aim was to examine its impact whilst resisting the temptation to be reductive. In analyzing and presenting this research, there was an orientation towards producing a 'rich' or 'thick' account (Geertz, 1993) of the specificity of the experiences, with close reference to student and staff voices. It was considered important to be alert to the power relationships inherent in educational research and the closeness between research, teacher and student roles. To this extent, the research was designed to notice and reflect on the behaviour and interactions of the students, tutor and researchers.

Three methods were used: direct researcher observation of, and partial participation in all sessions, recordings (audio, video and photographic) of sessions for transcription and analysis and semi-structured discussions. The discussions, an adapted focus-group technique, were designed to support learning outcomes as well as provide opportunities for research data gathering, so that the latter was complementary, rather than disruptive, to the students' learning. These semi-structured discussions were designed to enable drawing experiences to be articulated, revised and reviewed through debate, allowing students to respond, integrate or contest other students' views. The team reflected on the impact of the research process on the student participants throughout the study. In addition to gaining ethical approval and informed consent from the students at the start of the first session, the team encouraged the students, as active participants in the research process, to be as vocal and involved as they wished in the research. When analyzing the data, the researchers

considered verbatim transcripts of the sessions, which they considered along with their own observations, the photographs and video footage and the drawings themselves. The members of the research team initially considered the data individually and then jointly, identifying the issues and themes that emerged most strongly.

Analysis

The eight sessions' of [anonymised reference] transcripts amounted to some 235 pages of text which, in their complete form, offered detailed narrative accounts of the experiences of students, tutor and to some extent, researchers. The emphasis in this article, however, is to highlight four thematic strands that emerged from the data, which can offer some insight into the impact of this particular drawing course. This is offered as an interpretive account; the framing of this research does not involve a single set of 'truths' but rather a detailed consideration, filtered through the lenses of the researchers.

The first strand highlighted is the way in which a mixture of philosophical and pedagogical ideas about drawing were mobilized from the teaching perspective, and how this played out within, and impacted on, the student group. The second strand comprised the distinct shift observed in students' views and perceptions of drawing. The third strand focussed on the way, particularly through life drawing and anatomy laboratory drawing, deep and challenging reflections about the human body were provoked; and the fourth strand concerned the impact of collaborative drawing, with dialogic reflection, on learning and exchange across the disciplines.

The bracketed roman numerals refer to transcript session and page number.

Results

The eclectic toolkit: pedagogical approaches to drawing in a crossdisciplinary group

One of the central tenets of the course, as is common within art school drawing, was the importance of developing the skill of looking. As the tutor often emphasised:

‘And we’re learning to look. We’re learning to look at what we’re drawing ..’ (iii, 2)

The emphasis was not on attaining a purely objectivist notion of detailed, accurate ‘looking’. Rather, the tutor introduced the concept of looking as a complex and significant act that could be differentiated into a number of sub-categories, from learning to look visually and in detail at the drawing subject to a notion of ‘looking’ through senses other than sight. The significance of the act, or rather the process of looking to draw can be different depending upon the way drawing is conceptually framed and described, a variable that the tutor used to productive effect throughout the course.

The tutor’s instruction extended from practical directions, such as in the use of drawing materials and weight of line, to suggestions about focussing on phenomenological data: ‘See if you can get the whole thing on. It’s a continuous line ... Just using evidence, all the time. Don’t worry about accuracy’. In commenting on accuracy in this way, here, the tutor signalled that students were not being asked to produce objective or representational drawing. Students were given a range of injunctions and suggestions to stimulate and guide their drawing, requiring a level of abstract and critical thinking in terms of which visual stimuli could be used as ‘evidence’ or ‘information’ and how to understand and negotiate the idea of ‘accuracy’. Throughout the drawing sessions, the tutor circulated around the group,

giving feedback. In doing this, he balanced encouragement with constructive criticism, relating his comments about the nature of emerging or completed drawings to the individual student's own perceptions and interpretations, their attempts to capture emotional and cognitive responses to their subjects, as well as their facility with mark-making. At the same time, the tutor brought the principles of proportion, tone and form into his feedback.

The tutor clearly encouraged students to engage with the affective and experiential dimensions of drawing by, for example, enhancing technical instructions with metaphorical language, foregrounding different reference points and evocative textures, forms and atmospheres: the charcoal line 'can be so fine, like a thread of cotton' (ii, 5); 'almost like you're looking at something through a fog, or through the upended bottom of a beer glass. It's very hazy' (ii, 11). Yet again, it was also blended with references to representational accuracy: 'Think carefully where the shoulders are in relation to the hips. That's going to make a big difference. You can work it out. All we're doing really is working it out. Try and get things right.' (iii, 9) Here, the language of 'objective' correctness is used in relation to looking, selecting, judging and critiquing but on other occasions, the tutor again framed his guidance in more affective and subjective terms: 'Does the drawing feel right? It doesn't have to be accurate but does it feel right?' (v, 11). In this way subjective and objective approaches to drawing were invoked alternately and sometimes in combination, as complementary to one another in the context of the group's learning.

This mixture of aims enabled the different disciplinary backgrounds and their philosophical underpinnings to be engaged and explored openly, with discussions

often roaming over the meaning and relative merits of accurate anatomical representation versus emotional and aesthetic impact. At the same time, the presence of an idea of accuracy in the sessions seemed to be very valuable to the learning, given it brought with it the explicit language of ‘failure’, which became situated as a productive and useful experience to move beyond. Failure was viewed as a productive part of the practice of drawing as process; as continuous investigation and experiment.

Student perceptions of drawing and its educational uses

Discussing their motivations for choosing the course, the craft students described their perceptions of drawing as documentary, therapeutic, able to trigger reflection and as recording (and enabling a revisiting of) particular emotions. Drawing was a practice most of the craft students viewed as creatively meaningful but also emotive, troublesome and difficult to sustain within their making and course work. One student described how she used to ‘love’ drawing and wanted to return to it, indicating that drawing had not been a regular practice for some time; another commented, in the context of starting the drawing course, ‘I don’t like how I draw’ (i, 3). Other adjectives chosen to describe how students felt about drawing included ‘frustrating’, ‘meditative’ and ‘tiring’, which related to students’ varied notions of the purpose of drawing and the standards or results they expected of themselves.

In one exchange, craft students began to expand on their perceptions of the function and impact of drawing. One student referred to drawing frequently and, in her words, ‘mindlessly’; this, she said, exposed the ‘inner brain’ (i, 3). From the context of its use, the word ‘mindlessly’ clearly denoted an enjoyable ‘flow’ state of unselfconsciousness rather than a lack of intelligent purpose. The notion that drawing

had an important role in accessing and impacting on the non-conscious mind was referred to by other students: one commented that drawing demonstrated ‘more than I realised’. Another noted that drawing is most interesting as a ‘subconscious’ rather than a ‘conscious’ process (i, 3).

By contrast, medical students initially cited one of the key motivations in opting for a drawing course as having a ‘break’ from medicine’ (i, 8). Here ‘medicine’ appeared to denote their specific course requirements, the saturation and intensity involved in studying medicine but also the choice of medicine as a vocation. From observations made by the research team, medical students are extremely focused on ‘passing’ their many assessments and on meeting all formal objectives set out for them within a highly structured and pressurized curriculum. It has been argued in recent research by Cox et al that medical students conceptualise art-making as an ‘escape’, or even as a ‘portal into creativity, passion and emotional release’ (2015). In this study, medical students initially referred to the drawing course as ‘like a hobby that we get to do timetabled in’ (i, 8). This was closely followed by the comment from more than one medical student that they had been attracted to take the drawing course because there was ‘no presentation or essay’ involved. However, these accounts changed in tone and content within specific discussions and during the course as a whole.

After some discussion of drawing as a type of legitimized break, students began to express their motivations in terms that developed and partially contradicted the idea of drawing as relaxation: ‘I’d like to learn how to draw’; ‘I always see doctors drawing. It seems quite useful when you kind of explain it to patients’; ‘I really like drawing. I draw quite a lot when I’m revising to make it less boring’; ‘I really liked

art at school. I kind of ummed and aahed between the two for a while'; 'I really enjoy art and throughout the first two years [of studying medicine] I've used art quite a lot to sort of study medicine' (i, 8); I wanted to 'see how can art and medicine incorporate together' (i, 9). For one student, the link between drawing and cross-disciplinarity was the key point of interest: 'I'm interested in the creative process and seeing it was with design and craft students, maybe the collaboration stuff would be quite an interesting process to go through' (i, 9).

The issue of drawing as pleasure, versus drawing as functional, was also raised and explored further by the medical students. For one student, drawing appeared to be intrinsically about pleasure: 'I don't think anyone draws because they have to draw. You draw because you enjoy doing it' (i, 9). Yet as students thought more deeply about their recent experiences of drawing, they began to make links with the methods used to learn and revise medicine, particularly anatomy: 'I draw if I don't really understand something – if I can draw it – like blood vessels and that kinda thing (i, 10). At this point the other medical students added their observations that drawing already had a role in their learning and that it was used particularly for clarifying and memorizing concepts and facts. The students highlighted that some of their examinations required them to draw and that in these instances, drawing was defined in terms of communicating 'accurate' information about the body in the most efficient way possible. A key function of drawing in education and practice was explanatory, as part of the communication of technical information:

‘if there’s ever a concept that involves any anatomy I would draw it out. So, almost daily, if one of the doctors is explaining to you they’ll grab a piece of paper and like draw it out for you. And then you find that sticks in your mind’.

Over the course of the 8 drawing sessions, the emphasis on drawing as, in particular: intellectual and sensory engagement, communication, pleasure, meditation and a means of accessing the subconscious, was explored collaboratively through practice and dialogue. Few students continued to see drawing as primarily ‘relaxing’. The perceptions of the effect of drawing became more varied and nuanced as students compared and discussed their work with each other, developing and challenging in many cases their pre-course ideas about what constituted good drawing, how it might be used in their studies and placing more emphasis on the value of the drawing process over the end result.

Life and anatomy drawing: creatively and critically engaging with the human body

In her account of drawing in education (2010, 233), Petherbridge argues that the art school adherence to life drawing needs to be subjected to greater scrutiny, there being often insufficient rationale for the pedagogical value of drawing the nude life model over and above other drawing subjects. In terms of this study’s focus on the student perspective, whilst life drawing was not unequivocally welcomed, the sessions produced some particularly lively debates, moving discursively from the territory of the drawing studio into the conceptual and symbolic realm of the body. Initially, some comments were couched in conventionally humanistic terms: one student described her sense of satisfaction in the idiosyncratic aspects of the physical human

form: 'You appreciate their quirks more.' (iii, 22). This quickly developed, however, into to a crossdisciplinary discussion of the aesthetics and cultural construction of the body and the extent to which in medical terms, the outward appearance of the human body can signify its own state of health. A number of craft students commented on how enjoyable they found it to draw models with 'curvier' figures: 'I find drawing, like, really fit, skinny people really difficult, just because it's all like very angular ...Whereas, I did a whole project on obesity in A level and I loved it' (iii, 22). The alternative viewpoints on some of these assumptions emerged when the comment was openly contested by one of the medical students. The student argued that the preference for drawing larger figures was a normative view within the art school, yet problematic from a medical point of view. They saw the issue of obesity in terms of the potential health problems of a high body mass index (BMI).

During life drawing sessions, it was apparent that the life model herself had a particular impact on the students' learning experience, in challenging notions of the passive female subject and, in turn, the reasons for drawing the nude female body. The model interacted with the tutor, researchers and students during the setting up of the session and became an established and appreciated part of the learning group. The students were conscious of the model as an individual with a history and a life outside the life drawing room. As one student commented, they weren't 'just draw[ing] fact' but were 'drawing like emotion as well. Like, you could see, like, the strains..' (iii, 19). Whilst the humanity and individuality of the life model and the acceptance of bodily diversity through the drawing process was seen as enabling for some, for others, it provoked anxiety, 'yeah, because it was a person I was still trying to get the proportions right and didn't ...' (iii, 17).

The drawing session held in the anatomy laboratory, whilst carefully prepared for, evoked considerable tension surrounding the taboos and anxieties about death, the dead body and the processes of preservation and display of anatomy, extensively discussed and theorized by Kristeva (1982), Muller (2006) and others. Whilst medical students were familiar with this environment, it was a new and challenging experience for the craft students. This was indicated by the hushed and inhibited atmosphere evident at the sight of the prosections, the array of covered cadavers on trolleys in the background and the strong smell of formaldehyde. For the first few guided exercises, there was little exchange between students and the initial palpable anxiety was reflected in the comment of the tutor: 'You look amazingly worried' (vi, 2). There were also several points in the transcript for this session where the transcriber noted: 'Students continue to draw without speaking' (vi, 2, 3). After nearly 50 minutes' drawing one student is heard to remark 'it makes you think twice' (vi, 4).

Whilst many students had declared their particular interest in the drawing course as a way of looking at and understanding the human body, by session three (the first of the life drawing sessions) they had begun to reflect on and critique their initial ideas of what this meant. Students' perceptions of the body were challenged in particular by sessions on life drawing and on drawing in the anatomy laboratory. Their responses to and discussions of these sessions as a group suggested that a number of preconceived ideas about the body, both living and dead, had been exposed and to some extent reexamined as a result: after the anatomy laboratory session there were particular preoccupations with the mechanics and textures of anatomical specimens, but also

with how to understand and respond to the specimens philosophically and emotionally.

Drawing and crossdisciplinary learning

One of a number of terms that peppered the language of both drawing tutor and craft students during the course was 'precious'. This is part of the art school discourse, referring to an attitude of protectiveness, pride or covetousness about one's own work, as opposed to a focus on the process of learning and creative experimentation and an ability to relinquish attachment to the 'outcome'. Whilst avoiding 'preciousness' appeared to be highly valued by craft students and was quickly picked up by the medical students, all students frequently emphasized their expectations of themselves and, often, their failure to meet these expectations. The spectre of 'failure' hung over work, for example, that they felt was aesthetically unappealing, that did not reflect their knowledge of the body or that didn't capture a range of other qualities they hoped to achieve. As the course progressed, this experience of falling short was gradually expressed more frequently and confidently. For example, in session five, one student referred to their frustration with the work they had produced and commented that: 'But they do look quite nice when they're rubbed out. So it always hurts just before and then it's ok afterwards' (v, 18). This led to a discussion of how much the students disliked the tutor's frequent instructions to rub out a particular sketch and draw over the top, and induced a teasing remark on the subject, addressed to the tutor: 'It's all very difficult. You play with our hearts. [Laughter] (v, 18).

Students also showed a gradual increase in the awareness and appreciation of the process of collaborative drawing, editing and critique, for example, through pair

exercises. When students were asked to work as a pair at the same easel and drawing board, a medical with a craft student, one person immediately commented: 'This is going to be weird, working together'. (iii, 12). As this exercise was underway, students commented on the 'different angles' they could see whilst working on the same piece of paper. There was a lot of laughter and banter: 'We're just so perfectly in synch' (iii, 13). To draw at an easel with another person potentially exposes and challenges not only the individual's sense of visual perception and accuracy of mark-making but also rules about personal space and 'normal' modes of social or learning interaction. The craft students did not generally expect themselves to have formal knowledge about the body but at times expressed disappointment where they felt they had displayed inadequate standards as 'art students': 'I should be better at this, this is what I do!'; as opposed to the medical students, who were able to embrace their position as newcomers to the arts: 'the standards were lower for us so the only way is up' (ii, 33). Students also referred to their reactions at being in a mixed subject group, which cast their own experience and knowledge into relief: 'I was next to a doctor and I was just like ... they're so much better! [Laughter] I should be better than this! (ii, 31).

When the students were asked to reflect on these collaborative experiences at the end of sessions, with one or two exceptions where it had been seen as 'stressful', the predominant response was how interesting and different it had been to work alongside another individual: 'I thought it was really good'; 'I think it's less pressure because it's not just your work so you don't have to worry!' Beyond the issue of alleviating pressure or expectations of themselves, the collaborative drawing tasks were seen as useful in developing different drawing approaches, techniques and perspectives: 'I felt

like a lot better because I was kind of being controlled about how like far I could go with it. Because otherwise I'd be like, lines everywhere, lines, lines, lines'; 'I think you step back because you kind of maybe take a break while they're doing their bits and then you see the whole thing' (iii, 25). Students found that by working in pairs, they could react to each other's drawing in a very quick and responsive way and appreciated discussing the drawing process from a different perspective, but as it was happening. This helped them externalize their own thoughts: 'It was like a sort of, you know, the internal critical voice that you've got, when you sort of do something and you go, 'Oh that's not right,' you can actually say it out loud' (iii, 26).

DISCUSSION

The course was designed both to develop a range of drawing skills and techniques and to encourage, through drawing, crossdisciplinary reflection and dialogue about drawing, ways of seeing and the body. The tutor's pedagogical approach in delivering the course was to invoke different conceptual models of drawing, which were presented in a blended form and articulated by means of metaphorically-rich instructions and commentary. Here, Riley's theories about the pedagogy of drawing provide a key reference point for the analysis, enabling the underpinning principles and approach taken to teaching on the course to be related to the impact on students' learning.

On the one hand the tutor intermittently encouraged what, in Riley's terms, could be described as an empiricist stance, in which the drawing subject was seen as objective, with measurable elements that could be observed. On the other, he regularly prompted

the students, sometimes through specific exercises, to think about the availability of a more individual, subjective approach to drawing, highlighting the potential for students to use their mark-making to explore emotional responses to the subject. Yet the tutor also frequently used (again, in terms of Riley's model) a more relativist approach. The tutor invited students, particularly through the use of crossdisciplinary pair work, to consider explicitly the social constructedness of different ways of perceiving and practising drawing.

This pedagogical 'blending' is crucial in considering the impact of the drawing upon students' crossdisciplinary learning, as the students' comments and behaviour indicated that this approach provided them with a welcome range of opportunities to engage and experiment with drawing and to reflect on it. Whilst it is clearly problematic to generalize about the values and qualities of students according to their disciplines, the students themselves noted some tendency towards seeking objective 'accuracy' on the part of medical students and a slightly more subjective or relative emphasis by craft students. Being offered insights into different conceptual models of drawing as well as different techniques allowed students to challenge their own ontological and epistemological assumptions, particularly about the value of looking, the concept of art and the profound differences between, for example, biomedical and liberal-humanist constructs of the human body.

Faure Walker's critique of the dominance of relativism in art school drawing implies that relativism devalues (or unravels) the coherence of drawing as a disciplinary field. Drawing is, indeed, a complex and evolving discipline and one that is still in some senses struggling to be recognized within a logocentric academic system (McGuirk,

2011). Much of it has yet to be constructively mapped, particularly in relation to the uses of drawing as a visual learning or research tool or method across a range of subjects, and drawing as artistic practice. The students' response to this course suggests that the relativist emphasis, properly grounded and guided, can clarify a range of uses and values of drawing within different subject areas and be a source of profound intellectual engagement, crossdisciplinary comparison, reflection and change.

Among the key themes identified in this study, it was of particular interest that the students' behaviour and voiced opinions gave strong credence to the value of life drawing and anatomy drawing in exploring and questioning attitudes to the body and ideas and sources of bodily knowledge. The practice of art school life drawing has, as Petherbridge has commented, sometimes been carried out in a highly ritualized and staged fashion, but without a clear or explicit articulation of the perceived value in focussing in this way on the naked human (often female) form (2010, 233). In this study it could clearly be seen that questions about the human form were already central to the students' studies at the start of the course and engagement in the sessions provided a means to extend and develop these. Indeed for most students, the sense in which drawing could be, in the words of Garner (after Berger) 'discovery', or 'making knowledge' (2008, 25), was evident.

For craft students, understanding the human form in relation to their making aims and processes was a common preoccupation and for several of them, this was a key motivation in choosing to take the course. The opportunity to focus on and then challenge their observations and perceptions of the body through drawing and

discussion with medical students and indeed, the life model herself, provided new knowledge and insights to carry back into their drawing and craft practice. As the study's findings illustrate, the development and learning that occurred took place through both formal and informal drawing and dialogic interactions with the group (Vygotsky, 1978) and through the impact of and responses to particular learning environments, notably the life drawing set-ups of the drawing studio, and the anatomy laboratory (Lave and Wenger, 1990). Similarly, medical students voiced their interest in drawing the human form in a crossdisciplinary collaborative setting where biomedical notions of accuracy and clinical-procedural ways of looking were consistently challenged and debated. In particular, medical students experienced a shift away from seeing drawing as primarily a relaxing of curricular pressure, or as a means of revising and representing medical knowledge, and towards viewing drawing as a means of thinking, expressing, communicating and reflecting.

The research team recognizes that since this study was completed, further thinking about drawing pedagogy and perception has been published that needs to be taken into account in future crossdisciplinary drawing research (Brew, 2015). Further research is also needed both to focus in more depth on specific aspects of learning in relation to pedagogical theory, and to explore the longer-term impact of such drawing on the student groups.

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For Peer Review



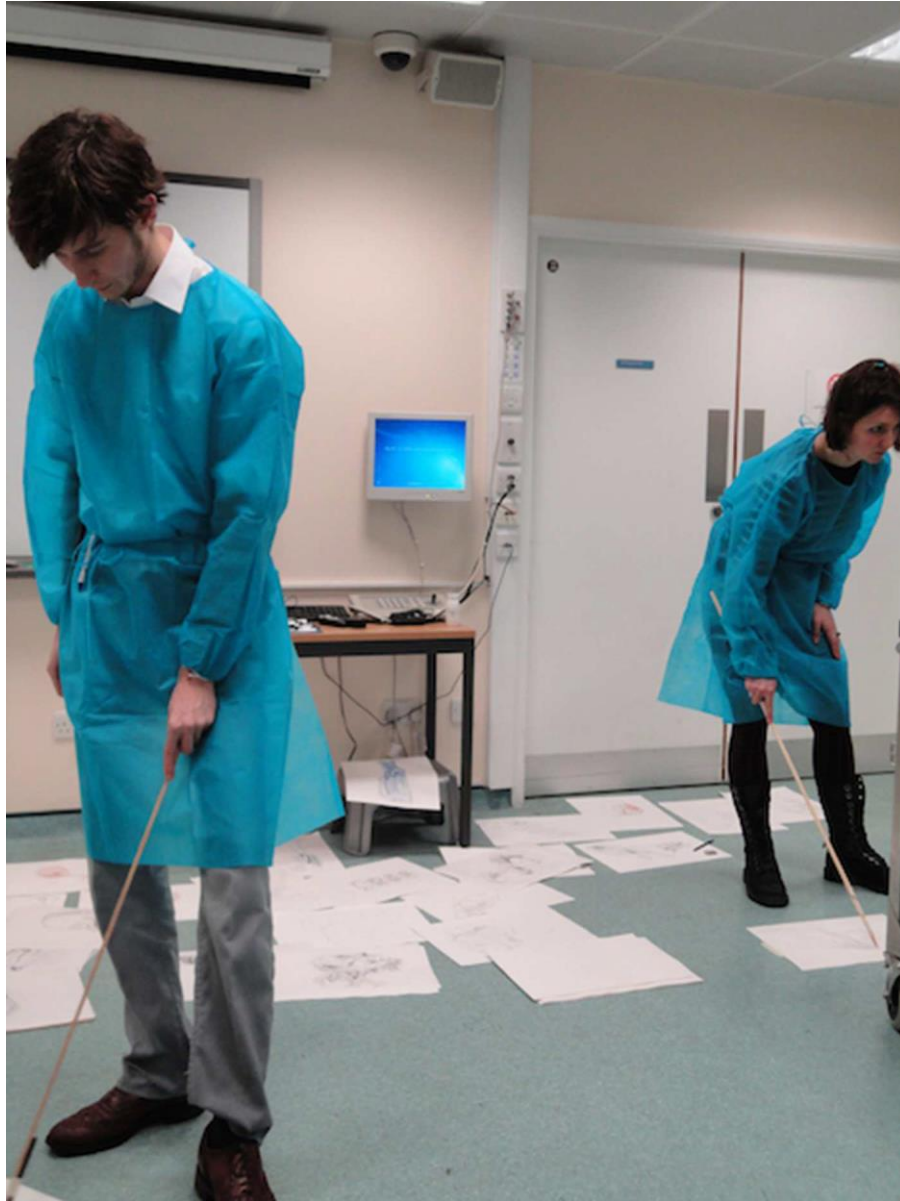
Students on the [anonymised reference] course drawing by touch. 2014.
33x50mm (300 x 300 DPI)



Student drawing of their own face, drawn using touch only. 2014
53x50mm (300 x 300 DPI)



Student drawings of prosecutions in the anatomy laboratory at [anonymised reference]. 2014.
56x50mm (300 x 300 DPI)



Students drawing with sticks in the anatomy laboratory at [anonymised reference]. 2014.
38x50mm (300 x 300 DPI)