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ARTICLE

Space matters

Experiences of managing static formal learning spaces

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ABSTRACT Managing the space in which learning takes place is subject to ongoing debate. Spatial management and movement can impact upon the construction of meaning within education and upon the dynamic of learning. It is suggested that there are now different learning goals and expectations and consequently a need for different learning environments. We are urged to break out. Many constraints, however, result in everyday experience not being of high-tech, impressively designed formal and informal spaces. This article contributes to a navigation of the realities of learning space. It recognizes that the literature may be leaving the profession behind and that for many educators the opportunities of design are merely aspirations. Taking as its focal point the small seminar room with sparse furniture, it presents two studies to contribute ideas on how such non-ideal spaces might be managed; one looking at an alternative education space, the museum, and the second drawing on interviews with colleagues about their experiences.
KEYWORDS: *learning environments, movement, space management, spatial design*

Introduction

There is more to a seminar room than four walls, desks and chairs. The seminar space is contingent. What goes on within that space and what went before in the lives of the users, and the space itself, are all important considerations. Likewise, the who, what, and how, of both the seminar space and its incumbents, become a focus for understanding what that space, and the movement within it, might mean for the educational process. Spatial management and movement can impact upon the construction of meaning within education and impact directly upon the dynamic of learning. Dealing with such challenges is the subject of ongoing debate. We are aware that there are now different learning goals and expectations and consequently a need for different learning environments (Bransford et al., 1999). We are urged to break out – 'shift from these … fairly rigidly organized spaces to [a] much

more flexible space use' (Campus Technology, 2003). Yet this is not so easy. As Oblinger (2006) points out, learning environments (and, by implication, learning itself) remain 'static' and 'bolted'. Organizations indeed 'face pressure to deliver higher standards of education, to greater numbers of students, with tight financial restrictions, but still need to provide facilities that will attract students in a competitive market' (Joint Information Systems Committee [JISC], 2006: 5). This article tries to navigate the realities of learning space. It recognizes that the literature may be leaving the profession behind (JISC, 2006: 10). It also notes that for many educators the opportunities of design (see for example *Student-Centered Activities for Large-Enrollment Undergraduate Programs*, www.ncsu.edu/per/SCALEUP/Classrooms.html) are merely aspirations. Hence the focal point for the article is the seminar room that is small, has a set of chairs and tables, a door, a board and a window. It then undertakes two studies to contribute ideas on how such non-ideal spaces might be managed; one looking at an alternative education space, the museum, and the second drawing on interviews with colleagues about their experiences. The article begins, however, with some context for why space should matter.

Why space matters

When one considers space management, one is considering the social construction of education. As is rightly noted, 'space is not … some static absolute, devoid of effects or implications. It is constructed out of social relations which themselves are saturated with an integral dynamism' (Tamboukou, quoted in Quinn, 2003: 449). Three key dimensions are raised here which, whilst basic, are worth repeating as they denote why it is important to continue to engage with such a topic. First, the *group* (of students and tutor) is a social organization that has, and creates, its own meanings. The participants, all with their own histories and formative experiences, their interactions, and the contexts within which those interactions take place make the seminar a dynamic place. Accordingly, the *movements* within the space, that partly underlie those interactions, are also socially constructed sources of meaning. Franks and Jewitt (2001: 201) usefully reflect that 'the physical action of socially organized persons is a powerful mode of realising meaning in classrooms'. The education environment is an interactive location, in which it will be significant how, why and in what form meaningful bodies move. The third dimension is the *space* itself. This does refer to that within the four walls of the seminar room. Yet it is problematic to see it merely as such. To hold the room as a contained unit is to potentially see only a single framework within it, a finite and discernable set of meanings. Rather I would agree that the seminar room should not be considered a 'space of enclosure' with a 'singular canonical meaning' (Edwards and Usher, 2000: 48).

More pertinent is the idea of the space being a 'negotiated terrain' (Quinn, 2003: 450). That said, this negotiation is not value neutral. Space is about position – geographically, temporally and politically. Hence it is 'constituted, not found, uncovered or pre-existing the practices that take place within it' (Edwards and Usher, 2000: 121). Layered over this too is the specific position and meaning of the institution itself. It is noteworthy that emphasis is placed in the literature on the meanings given by architecture – for example 'an authoritative and communal public resource … set[ting] the tone for what was expected from it from both the general public and the university community'; 'architectural embodiments of educational philosophies' (Chism, 2006; National Learning Infrastructure Initiative [NLII], 2004). There are accordingly multiple expectations of the institution, its space and the outcomes of its learning (Bransford et al., 1999). Squaring this with a principle of flexible, student-centred learning requires us to consider more the balance of august, elite education, social expectations and modern learning styles. Conceptual frameworks of group, movement and space are most challenging. Tutors should consider the nature of boundaries in their teaching space. There is no reason to presume that the seminar room is immune to globalization, for example. Edwards and Usher (2000: 7–8, 10–11) reflect that globalization '(dis)locates' pedagogy, as information, ideas, relationships, cultures, pressures and power are all neither bounded nor closed nor secure. Hence understandings of the student and the tutor – of themselves and those around them – are susceptible to shifting dynamics of who and what they are, and how power relations occur amongst them. This affects the relationships, as well as how topics are treated and how the process of learning occurs. Hence within, and indeed because of, the space, complex and modifying senses of 'the world outside' will be occurring, with that world much closer.

Learning space matters therefore as it is a dynamic realm. It has implications for how the educational process is undertaken, through group orientation and through goal, reward, role and resource interdependence (Petress, 2004: 587–8; Colbeck et al., 2000: 81). There is indeed potential for active participation (McFadden and Munns, 2002: 360–4), but how 'progressive' this may be is open to question when globalization suggests uncertainty about location, time and identity. Gender, ethnicity, class and so on, as well as how authority operates, are similarly uncertain. We may thereby be dealing with confused or even inhospitable spaces.

Academic discussion has engaged in various ways with space management. In particular linkages are rightly being made between how learning itself is understood, how it takes place, and how space is integral to that. To summarize greatly, learning is now conceived of as about understanding, discovery and experience-informed iterative processes (Brown, 2006;

Bransford et al., 1999). As a match of style to method improves achievement (Dunn, Beaudry and Klavas in Hiemstra, 1991: 16), the challenge is not only to develop such methods, but to integrate space management into learning. Hence the emphasis in space management is on discovery, experience and flexibility (Fulton, 1990: 9). To get to this stage, there has however been varied engagement with space management. Fulton (1990: 3–9) provides a useful genealogy of academic interest, particularly within the USA. He charts how the Adult Education Association initiated the discussion with its 1953 *Architecture for Adult Education*. Yet much of the subsequent three decades fell fallow as, for Fulton (1990: 3) citing studies by Dunn and Dunn, and Fitt, insufficient research was carried out – owing to a dominant belief that space use was individualized, there could be no scope for generalizations or even action. This conclusion resonates with Hiemstra's review (1991: 7). Research blossomed in the mid 1980s, such as Vosko's work on physical spaces, Belsheim on organizational environments within continuing education settings, Fraser and Treagust's development of measurements for 'psychosocial environment', and Darkenwald and Valentine on social environments of adult education classrooms (Hiemstra, 1991: 7). Then Fulton himself, building on the work of David, who introduced the idea of a 'functional environment', and Weinstein, who innovatively reflected that the physicality of classroom is integral to learning, started to challenge the premises of space research, looking at the adaptive and adoptive responses people have to physical environments (Hiemstra, 1991: 7).

There are, of course, numerous dimensions of space analysis (furniture, heating, etc.) on which the present study unfortunately cannot dwell. As it is, Woolner et al.'s (2007) conclusion that there is insufficient evidence anyway to suggest that individual physical changes, rather than overall environmental change, affect development and learning, is salutary. Any one utilization of space, however innovative, is not enough, but rather there must be ongoing responsiveness to potential alternatives, needs and constraints (Kane, 2004). This study wishes to draw instead on experiences within particular learning environments to reflect upon some of the challenges faced. Similarly this study also hopes to avoid two certain perceptible trends within some literature and practice. Firstly it is notable that priority is still given to basic functions of the learning space, such as heating, ventilation and lighting, rather than to the broader dynamism of the room (see for example NLII, 2004). Chism (2006) summarizes various studies that all focus on function and, in a recent discussion, it is interesting that a proponent of change in space usage only emphasizes 'spaces that are built around very fundamental human needs like comfort, natural light, operable windows, good social ambience, nice sort of quality, views out

the window' (Campus Technology, 2003). I would also include here the attention being given to the use of technology. Innovative ideas are appropriately discussed in the literature (Brown, 2006; Lomas and Oblinger, 2006). Technology should not however be an end in itself. Technology can help, as Brown (2006) argues, to focus on wider experiences, bringing them in to the classroom. Yet he adds that institutions must have a learning space vision first, not just install IT. Technology should be 'firmly in the background' (NLII, 2004).

Universities, at least in Europe, are of course not wealthy intuitions. Funding for such expensive capital renovations may at best be only available to certain funding-rich subjects. Hence whilst technology and function are important, I would suggest that there is more to space management than this. Practice is part necessity and part inertia (Chism and Bickford, 2003: 1). Therefore I suggest that discussion within the literature needs to be ongoing regarding how static spaces may be engaged with, and what experiences may be shared. Linked to such aforementioned functionalism is the second perceptible trend of behaviouralism. By such a term I mean an over-generalized emphasis on traits of students and claimed cause–effect. Some examples of such research are given by Hiemstra (1991: 7) and Chism (2006), in which 'physical environment[s] render some behaviors much more likely, and thus more probable, than others'. Although, again, I am not negating such research, I would suggest merely a note of caution that behaviouralism can lead to a problematic depoliticization of learning, particularly regarding how people act as sociocultural individuals. Fellenz and Conti alert us to better understand such issues as racism, discrimination, employment and critical thinking, in relation to adult learning (Hiemstra, 1991: 7). By contrast, I am struck by the idea of a 'constructivist classroom'. The discussions of autonomy, initiative, active knowledge construction and knowledge-, assessment- and learner-communities (Chism, 2006; NLII, 2004; Bransford et al., 1999) all place expectations on the use of space and movement within it. This includes the growing interest in 'informal spaces'. Taking in links between corridors, seminar rooms, faculty spaces, libraries, cafes and beyond (Chism, 2006), this is a demanding approach; it is prophesized that the 'act of accessing data will no longer be tied to a particular time or location' (NLII, 2004). Whilst my study addresses static, mainstream, rather than informal spaces, I would just note that there does seem insufficient reflection in the literature on how such liberation out of the built frames of higher education will square with the oft repeated (and noted above) assertion that universities, through their architecture, profess their augustness.

There is, then, a growing consensus that there should be a harmony of space and learning. Spaces that are harmonious with learning theory and

the needs of current students reflect flexibility, comfort, sensory stimulation and decentredness (Chism, 2006). Educators are urged to echo in their learning spaces responsive, inclusive and supportive learning strategies; learning space 'should be able to motivate learners and promote learning as an activity, support collaborative as well as formal practice, provide a personalized and inclusive environment, and be flexible in the face of changing needs' (JISC, 2006: 2–3). To this I would add, and offer this article accordingly, that consensus need not mean an end to discussion. Likewise many academics and students are faced with static, 'undesirable' learning spaces. I suggest therefore that it is useful to continue to share experiences of using learning spaces, of different forms. The present discussion moves consequently to two applications of the ideas of space. First, learning from the museum sector, as another educational space, is explored. Subsequently, ideas of space management are observed.

Learning from and in museums

There is an ongoing process within museums to capture their own experiences of how people learn. Much of this can be reflected upon by universities. The two institutions are not as incomparable as may be expected by some. Museum educators may have more freedom than university tutors, yet the status of each institution within society, the buildings and resources at their disposal and the means by which learning may be facilitated denote much cross-over. Indeed, in recognizing museums as educational spaces, the museum sector has itself drawn from pedagogical research (Hooper-Greenhill, 1999: 3–4). Iteratively, the university sector may 'borrow back' many of these ideas – as it has indeed done with other fields (Hiemstra, 1991: 16; Fulton, 1990: 8). Museums' own research has reflected upon the spatial context that is the educational process of the museum. I explore here the commentary of a Canadian museum, on its spatial considerations in education, which provides a number of insights into space management within the seminar room (Communications Design Team [CDT], 1999: 179–89).

Tutors might consider the pedagogical implications of three key spatial issues faced by museums. Spatial context, firstly, can be understood as the mood of the setting, and the meanings that are drawn from that. Hence architectural quality, the light and any surroundings that add or distract, set a spatial scene. This begins the moment the student walks in, whereby the doorway itself impacts upon the approach (figuratively as well as physically) to space and education. Configurations – the form and nature of the setting – that impact upon actual space to move and, likewise, any subdivisions that are laid out (including clustering of tables, as well as anterooms for use in

syndicate or buzz groups), spatially guide the learning process. Above all, the spatial image presented informs approaches to the seminar. Consider the consequence for lessons of dilapidated, cold and dark spaces, and indeed conversely of overly, and distractingly, pristine modern spaces. A sense of being somewhere learned, dynamic and so on, is (pre-)constructed.

Accordingly, space and subject matter are also closely inter-related. The Canadian museum noted that there is a distinct fit between storyline, the objects of the museum and the museum space. The relationship between space and objects is one of how perceptions of, and access to, what is being presented are impacted upon by the management of space. In seminars this would be about the use and display of physical items, such as visual aids. However it may also be suggested that the tutor, the student and, indeed, the interaction of ideas, are 'objects' that have a positional and interactional fit with space. Accordingly the storyline, or narrative of the seminar/museum, is in fact not just the topic under discussion, but the new form it takes as these objects interact. Innovative educators are taking on this idea of space and storyline – the Centres of Excellence in Teaching and Learning at the Universities of Sussex and Brighton are maintaining a database of 'learning journeys' (JISC, 2006: 14). It is perhaps unsurprising that space may indeed reinforce storyline. For the museum, how subdivisions and paths through exhibitions are controlled is important. In education, if it is accepted that education is both a narrative and a process of self-experience, this can be essential. This is both physical and intellectual. Role play and small group work are clear examples of physical process choices. Yet there is a pedagogical dimension too. The museum sector has debated whether lineal, rational sequences, or flexible, choice-based narratives are most effective. For the seminar this raises the question of the selection of sequential teaching, such as a focus on dates rather than themes. More broadly, the spatial content of storyline also becomes a debate of teleology, of whether the storyline has a 'truthful' outcome to be reached. Space management requires specific epistemological decisions.

Indeed, controlling the storyline through space is not a simple matter. It may alarm tutors when another educator, in this case from a museum, suggests that 'the spatial organization of a gallery should be evident *without strain to the viewer*' (CDT, 1999: 182, emphasis added). The aim is actually to aid confidence in the learning process, moving through the educational space with logical ease. This may be achieved via a reduction in complexity of choices and the use of spatial cues (although surprises are possible). Such reduction is challenging for tutors who may well be concerned about standards and levels of preparation, participation and learning amongst students. In spatial terms, what is implied is that the student/gallery visitor is primary in the relationship; the teacher's/curator's job is to enable their

learning. Yet providing guidance and cues also suggests a retention of control. Hence space management is a question of how the tutor, through the spatial context, enables the learning process.

The final spatial issue faced is that of movement. The museum notes that entering and exiting the room are important parts of the learning process (the education sector also seems to be beginning to respond to this – see JISC, 2006: 8–9). In the museum and the classroom, entering can be disorienting, and yet ignored as not a 'real part' of the exhibition/seminar proper. Upon entering, however, preliminary information – the position of the tutor and guidance to sit in particular locations – all orient significantly. Similarly, and perhaps more notably, leaving is also a distinct spatial and pedagogical moment. The museum found that there are exit gradients, whereby visitors speed up when they see the exit. In the education sector, this clearly mirrors the looking at watches, the move (mental and physical) to the next tightly scheduled seminar, or the school bell, all of which can unravel the narrative of the seminar. Planning of the final five minutes of a seminar is key, which spatially might include moving to be in front of the door, being opposite it to direct attention away from it, or forming the students so as to explicitly make them a coherent unit.

Between the points of entrance and exit, educators are encouraged to consider issues of positioning, the structuring process and more general relationships of movement to modes of learning. On positioning, it is noted that museum visitors tend to stay at the perimeters of exhibitions, rather than delving in to secluded areas. Closely linked here is a call to ease the movement of the visitor. These suggestions resonate for university education firstly in terms of sitting patterns in seminars, where participation can become minimized, deliberately as well as inadvertently, by being on a perimeter. Movement of the tutor, and students, responds to this. A circle therefore seems the ideal structure for avoiding outsides and ends. Crammed seating, inability to interact within the space provided, or the clumsiness of a tutor getting to a sub-group can all impact upon perceptions.

The structuring process of space management is likewise informative. Both stoppages and flow are to be considered. Regarding specific stoppages within the structuring process, decision points may be placed in the seminar room, as with the museum. Yet it is noted that, if choice is given in the process, it helps to give guidance to that decision-making process. From my own teaching experience, I have found that giving too many options stymies the situation, and indeed that students are willing, for example, to be placed into groups. This need not disempower the students, if the tutor input is understood as guidance. The Canadian museum also sets out three types of crowd flow. Areas of constant crowd flow should be communicatively terse and repetitive, to prevent visitors drifting off. In the seminar,

this equates to the plenary parts of the session, in which information is given. Secondly, areas of crowd stoppage should have conceptual, unhurried exhibition pieces, provided before the visitors are able to move on. In the seminar, such focussed stoppage is to move students into small groups. There they can consider a topic without threat, and hear others' ideas, before snowball reporting on to the whole group. Thirdly, areas of variable crowd flow can be used to initiate more complex discussion, but by the presentation of a simple introduction. This is the seminar small group discussion, possibly facilitated by the tutor.

There are final museum insights on how movement, as an activity and as a process, is educationally effectual. Typologies of circulation patterns within museums are also indicative of how people move and learn in different ways, and so flow patterns (CDT, 1999: 186–9) need not be so alien to the seminar room. For example, their 'optional alcoves' in a seminar would be to offer alternative subjects to be covered, and a choice to potentially by-pass certain others. Tendencies to move towards subjects in particular ways can be controlled to effect in a seminar, as much as in an exhibition. The use of 'orientation points' correlates to the tutor moving amongst small groups, students providing feedback to comments or presentations, or 'audiovisual cues and changes in furniture layout [assisting] learners' navigation around a building, [helping] them to adjust their behaviour according to the purpose of the space' (JISC, 2006: 4).

I wish to finish this part by raising a challenging debate for education. Museums note that shape of, and movement and directiveness within, the spatial context impact upon degrees of interest within the visitor; be they 'casual', 'interested' or 'specialized'. The museum, it is argued, should work towards encompassing these different levels of interest. However, allowing scope for the 'casually' interested student is the challenging part. In the museum situation, the visitor/student has paid to visit, or at least has made a wholly free choice to visit. It may be argued they therefore have the 'right' to ignore the education if they wish. Is university education different? In the UK, post-16 years of age, formal education is not compulsory. Similarly, a financial payment has been made by or on behalf of the student. Can they therefore ignore also? I would suggest that higher/further education is slightly different in that it is a more explicitly socially constructed situation. The student has a degree of obligation, to peers, to the tutor, to the learning process, to the funder, to society. Hence, within that context, interest is a mutual responsibility. All this said, whether students are 'visitors' does not take away from the space management implications, for the seminar room, suggested by the museum. It is therefore useful to be aware of the ranges of interest that will exist. Part of the role of space management is to raise motivation beyond the base level, bringing learning above being passive.

Reflections on educational space

The seminar room is a dynamic space, and so that dynamism can be experienced. To explore this I discussed with colleagues what are their experiences of how students learn in different room arrangements. As the small rectangular university room predominates this formed the basis for discussions. Using the study by Griffiths and Partington (1992), and also drawing on my own teaching situations and those observed amongst colleagues, I drew out a number of scenarios for room arrangements (see Appendix 1 for some examples). I then used these as 'prompt cards' to initiate discussion with colleagues from across a range of disciplines. Clearly the student voice is missing here. However, I trust that the educator's voice still carries some resonance. The interviews and focus groups were recorded and key themes from them summarized.

Reflection was made upon spatial elements of group development and group cohesion. The position (physical, style, context and perception) of the tutor was likewise explored and key space management issues were reflected upon. The following is a brief discussion of those experiences, reflecting back on why space matters. The dynamics of space were exposed as important – personalizing the situation; the role of intimacy; the impact of directiveness; the initiation of self-reflectivity through space; the spatial context for disturbing and motivating. In each instance it does seem useful to continue to engage with experiences of space management, especially where the spaces may not be ideal.

At the start of this article I noted that space matters because of group orientation and movement with the space, and negotiation within the terrain. From the present research it strongly seems that space management has a distinct relational impact, with the orientation of a group depending heavily on the management of space. The nature of interactions and the relationships built within a group, in particular, were informed by scope and alignment of interaction. Groups that operate as all-inclusive, rather than as a number of sub-units, are more willing to share ideas and follow pedagogic processes. This is doubly important as, whilst this study did not evaluate depth of learning, it suggests that Tsui (2002: 758) is right to note that student-to-group interaction would aid confidence and enhance comprehension. Interestingly, however, it should be borne in mind that this is not, of course, clear cut. Sub-dividing groups is a spatial-pedagogical issue. The use of small groups within the whole is a well recognized educational tool and discussants felt it to be a valuable means for confidence-building. However, by considering the education process spatially, one should be conscious of the impact of breaking up the space. It was expressed that (as may be expected from such divisions) some students became isolated.

Divisions allowed and developed alliances which were not necessarily constructive in wider discussions.

Reflections upon arrangements of space were similarly notable for how they impacted on the pedagogical process. Rectangular arrangements, rather than circular, elliptic or sub-divided, predominated in colleagues' experience. Obviously this mirrors room shapes; however I would suggest there is a greater significance here, as space construction is becoming normalized. Such construction means practices and relationships may too become normalized, regardless of attempts to make the situation more dynamic. Discussants agreed that rectangular arrangements encouraged confrontation over discussion, and reduced opportunity for drama. The group was not only flat in the rigidity of how they were arranged, but were flat in their engagement. Furthermore, the greater the number of students side-on to the tutor, the proportionally greater opportunity for distractedness by students. This resonates with my own experience of how much engagement such arrangements allow between tutor and students (see Figure 1). Those at the top and bottom ends of a rectangular arrangement (zones A and B) are most in my sight and so naturally a point of engagement.

However, students about two thirds along on each side were most outside potential for interaction. These are the students who have participated least (Vosko's 1984 study had found something similar – see Hiemstra,

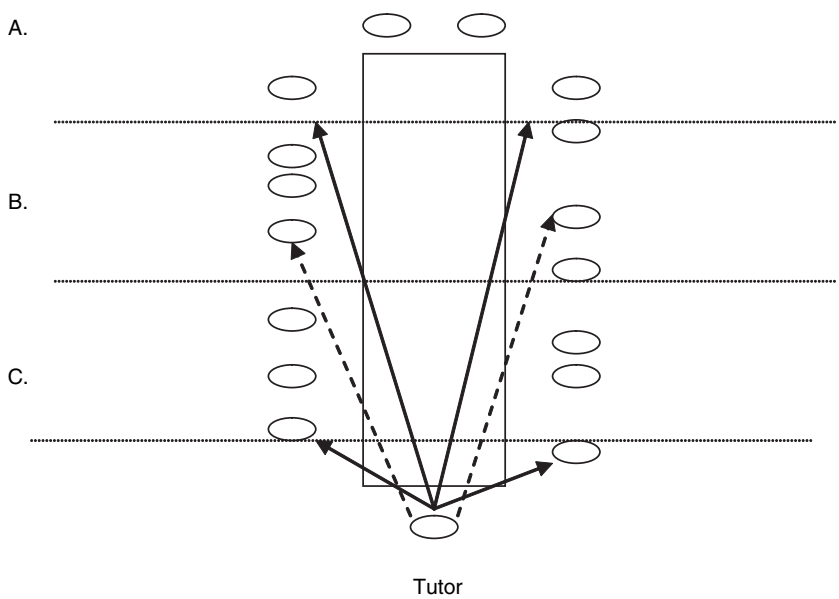

Figure 1 **Zones of sight**

1991: 20; Vosko, 1991: 27–29). Of course it is interesting, as one discussant noted, to question whether students who do not intend to participate select such positions (knowingly or otherwise), or whether such positioning relegates them to minimal participation. Closely related to this, a sense did seem to develop that perimeters were important in a spatial understanding of the seminar. Resonating with what museum designers have found about perimeters, tables delineate what are edges, and windows and doors provide perceptual and conceptual glimpses of the outside. Here is perhaps a quandary for a space manager. Chism's (2006) idea of 'decenteredness' is intriguing – 'Within the classroom, it means avoiding the message that the room has a front or a "privileged" space. … It means that the flow of spaces must be rethought in terms of learning'. Yet removing the front alone does not remove perimeters. This study found that there can even then be a tendency to move towards perimeters, as perhaps a means of minimizing the challenge and exposure that may be implied in education. An alternative therefore, and one that struck discussants, is to utilize the potential for movement and positioning, which remove edges and thereby both fronts and centres.

Commentaries upon distance, and its impact on interactions, were likewise informative. Colleagues reported that they felt that, when in more intimate settings, where they were closest to the students, the dynamic was better. Students also responded well to the intimacy of small group arrangements, although some discussants reported this being a situation that developed only over the course of a seminar series. Conversely, potential to disengage was increased by any distance within the group, especially from the tutor. I have found that certain students, particularly disruptive members, do in fact latch on quickly to such scenarios. Yet there was agreement that this was not necessarily straightforward. Students who are most distant from a tutor may become obscured from them by others. This said, intimacy must take account of factors such as age, nationality, gender, style or even fashion which may contribute to the degrees and types of interactiveness. Personal space is obviously significant, and therefore does call in to question the idea presented that design should 'maximize the ability of faculty to get into the social space of every student … – no hiding place for students' (NLII, 2004). Furthermore, mere presence itself does seem to have an impact on social interaction. For example, tall tutors (of which I am one) may loom over students and cause strain. What this discussion strongly denoted was that a trade-off is required between group intimacy and ability to fully interact. Ongoing awareness of the impact of such issues is required of the tutor, as is much movement within the space.

An ongoing discussion

The seminar space is a dynamic construction that impacts upon the nature, method and process of education. It is not merely a room in which learning takes place. The space itself, the people within it and their movement and organization are all social constructions. However 'because we habitually take space arrangements for granted, we often fail to notice the ways in which space constrains or enhances what we intend to accomplish' (Chism, 2006). Accordingly ongoing consideration needs to be given to how space is managed, especially with non-ideal facilities. What has been particularly striking from my discussions with colleagues is that there may be a normalization of particular constructions of space. Chism and Bickford (2003) warn us against many assumptions around space and learning, such as that the latter only happens in classrooms, is 'pretty much the same from class to class' and that there is always a front. Yet when students orient themselves as per 'normal' and, conversely, distinct alternative arrangements radically shake things up, it may be suggested that there are standardized expectations by students of what the seminar space will look like. This resonates with what has been recently written. Learners 'can be reluctant to change an inherited configuration, even when self-management of the space is encouraged' (JISC, 2006: 25). In turn this indicates to us that any apparent new build 'blank sheet' of space management may be pre-empted by a standardization of behaviour and, even more importantly, of meaning. This suggests that both the normative process, and the scope thereby provided for effective disruption, are spatial. Groups are partly created and developed (or disintegrated) by spatial arrangements. Mixing students out of their sub-groupings, with movement, provides great potential for disturbing pedagogically.

It is important of course to note how interactions and social constructions discussed here must inherently raise issues of power within the seminar room. As a constructed space, it seems impossible to lose power, for this is the basis on which the interactions take place. Hence decisions about need for, and appropriateness of, authority, as a dimension of power, need to be made spatially. As space informs group development, there is potential for the tutor to become isolated. However, the alternative to this, of the tutor/student distinction disappearing, does not seem feasible, nor perhaps even desirable. Hence the tutor is, or perhaps needs to be, separate from, whilst within, the group. This is a difficult spatial consideration.

In more general terms, it seems useful to consider the construction of the student in the modern age. In discussions for this study, it was suggested

that there may be a degree of expected passivity amongst students; theirs is a receptive position. As such the (probably undesired) starting point is not in fact one of interaction within the space. Hence the spatial challenge is to use the space as dynamically as possible to begin to engage with that starting point and subvert it. Consequently, power may have a pedagogical value, in that it be reserved and played. The two cases in this study have reinforced the importance of spatial dynamism, but have also noted the potential constraints. As looking at other 'education' sectors has suggested means for dealing with such limitations, further research in other sectors is suggested. It is correct that 'vision and design principles should emphasize the options students have as active participants in the learning process' (Brown, 2006). In the meantime however, sharing of experiences, as in the present study, needs to be ongoing where non-ideal spaces must be engaged with.

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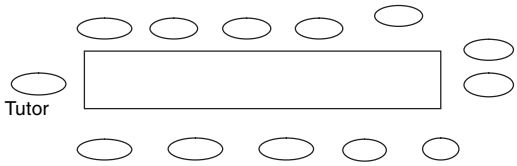
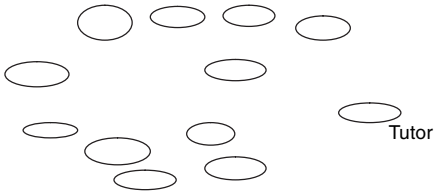
Appendix 1: Some room scenarios

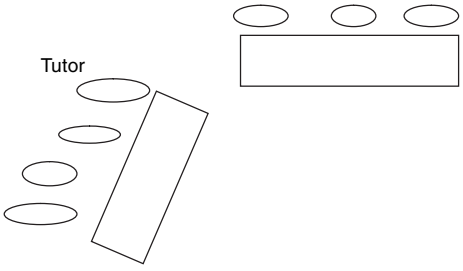
a.



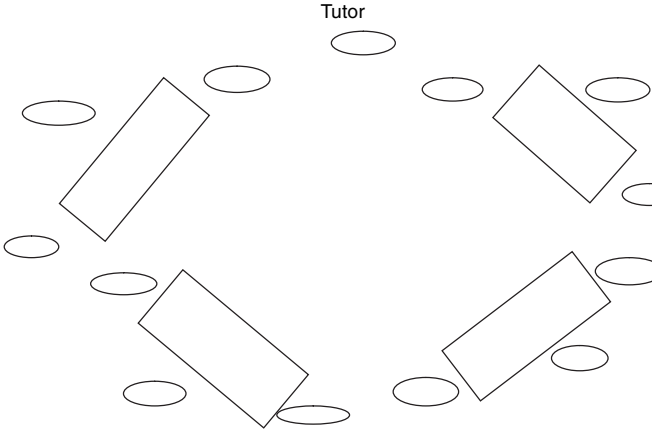
b.



c.



d.



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