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Exploring conceptions of learning and teaching through the creation of flexible learning spaces: the Learning Gateway - a case study

Margaret Weaver, Head of Learning and Information Services
St Martin's College
Harold Bridges Library
Bowerham Road
Lancaster
LA1 3 JD

Email:m.weaver@ucsm.ac.uk
Fax: 01524 384588

Editorial correspondence: as above

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Abstract

The paper will explore the relationship between the creation of a physical learning space and the changing conceptions of learning and teaching that are being instigated by a building, designed from the outset, with student learning in mind. The Learning Gateway has been created to support students and the development of a new curriculum as St Martin's reshapes itself in the context of the emerging University for Cumbria. At one level, this use of the "estate" and the "ICT infrastructure" as a way to combine physical and online environments is becoming more common in the sector; the Learning Gateway at St Martin's is indeed an example of such a new learning environment. However the above description conceals the complex change process that is at work and the new relationships that are emerging – some of which challenge the established cultures around pedagogy, learning and teaching support, and studentship. The College's Change Academy project has interfaced with the Learning Gateway's creation and is yielding new insights into changing conceptions and roles required to ensure that the Learning Gateway delivers its true potential. The implications for Library and Information professionals wishing to remain at the forefront of learning and teaching developments are explored.

INTRODUCTION AND CONTEXT

The higher education landscape is changing beyond recognition and the ubiquity of the internet and digital technologies are driving these imperatives, offering new opportunities for the application of ICT in support of flexible learning. Globalisation of the higher education market, economies of scale forced by shrinking unit of resource, and the student expectation of a mass higher education system, including tuition fees, are affecting the way that higher education institutions operate. The employability agenda also impacts on a discerning student population who require key skills in order to live and work in an increasingly technologically focussed, complex workplace. This is true in the UK, Europe and globally.

There are also significant culture shifts towards more flexible use of "classroom" spaces as estates management has assumed more significance and increasing convergence with learning and teaching objectives. A scientific approach to estates management with more focus on effective space utilisation and the direction of a whole institutional response to supporting the core business of learning and research is therefore emerging. This undertaking is supported by the Funding Councils for example by the HEFEC Project Capital Rounds 3 and 4 and work undertaken by the JISC to assist institutions to adapt physical space using ICT. A whole strand of practice and projects is developing to assist practitioners and managers to build, upgrade and/or convert libraries and learning spaces that utilise ICT and that support the new pedagogies of e-learning and blended learning. (see sector developments below).

Port (2003) observes that 70% of space in institutions is related to teaching, and highlights new requirements for higher education institutions to take strategic responsibility for their infrastructure. However, it was not the traditional view of space utilisation that first drove the development of the Learning Gateway, but the desire of St Martin's to engage a new user population with distinctive learning needs and aspirations, from a geographically diverse

catchment area, notably in Cumbria. The possibility of creating a completely different learning space to meet these needs – the Learning Gateway - was conceived in 2003, before extensive national programmes had developed in the UK. The project at St Martin's therefore drew on models from the USA, in particular the work done by EDUCAUSE and the NLII, Denison University and the TLT Group, although it is recognised that there are a number of other internationally advanced institutions providing similar spaces for example in Australia and the USA.

At the centre of the building design was the requirement to build on the existing expertise of St Martin's by the utilisation of independent learning approaches in order to accommodate a wide variety of learning styles. This is acknowledged as a complex area and the work of Smith et al on learning styles points to the need to cater for individual differences and to enable students to learn how to learn. The term meta learner is coined to describe the fully developed lifelong learner, able to benefit from the opportunities offered by e-learning using different pedagogic approaches. (Smith et al, 2005)

It is reasonable to suggest therefore, that exposing students to a variety of approaches in a blended learning environment can increase their confidence and enhance their capacity for meta learning. This view is upheld by Rennie who outlines how experimentation with different pedagogic approaches, in a networked learning environment, can yield significant benefits; for example he indicates that the use of asynchronous technology and interactive learning resource materials may assist learners to feel connected with their peers, and their institution. (Rennie, 2003) Consequently from the outset the space had to deliver this vision of combining advantages found in both the concrete and the virtual environment. The Learning Gateway

is unlike any other space currently provided by St Martin's and has been built on the Carlisle campus. Begun in March 2005, it was completed in January 2006, and opened officially by Sir Martin Harris, Director of the Office of Fair Access in June 2006, at a cost of £4 million, able to accommodate 500 learners physically at any one time.

SECTOR DEVELOPMENTS

At a national level the significance of new learning space design need is being recognised by the England funding council as part of a ten year policy framework. The HEFCE strategy for e-Learning aims to "encourage co-ordinated strategic management approaches to development of e-learning – through joining up learning and teaching, human resources, IT, and estates strategies – to maximise the benefits of technology across all HEI business activities". (HEFCE, 2005). This work has been undertaken jointly with the JISC and the HEA who are also running programmes that support this area. The JISC programme on **e-Learning and Innovation is concerned with- the use of innovative technologies and models to support e-learning and has funded collaborative projects into how pedagogy and technology can work together to create physical learning spaces of the future.** The JISC eSpaces project at the University of Birmingham is therefore examining how innovative technologies are influencing the physical design of learning spaces in the post-16 sector. Responding strategically on behalf of the HE Library sector, the SCONUL E-Learning Strategy focuses on the need to join up physical and virtual learning and suggests that the SCONUL Advisory Committee on Buildings (SCONUL, 2005) should refocus to encompass learning, teaching and research spaces especially in relation to flexibility and new technologies. Workplace learning spaces have yet to be brought into this schema, although Bates et al (2005) draw attention to the creation of a flexible learning centre as being a "supply side" facilitator that could influence the delivery of workplace learning to hard to reach groups.

PUTTING THE LEARNER FIRST

The rationale for strategising flexible learning space design at the College began with the publication of the College's new Corporate Plan 2004-2009. A whole new learning landscape was envisioned that put the student at the centre, and presented an Academic Strategy whereby flexible and distributed learning was to become the norm in learning delivery. It was also predicated on the principle that this would be achieved by good stewardship of the estate, a new partnership model between Faculties and Services, and a robust ICT infrastructure. In response to these aspirations, an organisational change strategy was developed that involved the creation of a vibrant learning community focussed on providing a blended learning experience to distributed student groups across Lancashire and Cumbria.

Structures and processes which facilitated this step change were identified and the key principle of flexibility was born in the context of providing an integrated learning environment, capable of supporting the modern student experience. The Learning Gateway was envisioned in such a way that it would support curriculum change, shifting cultures in teaching and learning support, and widen participation to under represented student groups. In parallel in 2005, the College won a place on the HE Change Academy programme run by the Higher Education Academy, that has created further capacity to implement these changes, in particular to assist academic staff, course creation teams, and support professionals to embed appropriate use of pedagogy and technology, via multi-disciplinary team working.

THE CREATION OF A NEW LEARNING ENVIRONMENT

The literature supports the notion that physical space can and should influence student learning. Higgins' work on the University as a learning organisation, describes the learning environment as constituting two elements:

- physical – resources and surroundings and
- social – methods, culture or ethos engendered by these. (Higgins, 1996)

The influence of one on the other is what creates the synergies and shifts required to transform the learning culture at St Martin's. The following top levels aims were formulated to try and achieve the new learning environment. They drew on the literature of collaborative learning. In summary they were:

1. to provide flexible learning spaces so that longevity is considered alongside the technology. "New learning space should be built with the assumption that it will last 30 times longer than any technology that will sit within it…" (EDUCAUSE, 2005)

2. to build an integrated support environment that gives learners more choice and control over their own learning. Collis says that this means it will have all the elements that students and staff need allowing the learner to develop and choose the one that is most suitable. (Collis, 1996).

3. to provide scaffolding mechanisms, "that area of cognitive ability that covers tasks beyond what a student can accomplish, but which the student can complete with some support or prompting" (Higgins, 1996, p.77).

A new support post – the Learning Facilitator was created to help students make the most of their learning experience whilst accessing the Learning Gateway's facilities at the College.

The Learning Gateway therefore attempts to embody all these concepts, providing a holistic view of the learner and the institutional support required, in order for students and staff to flourish. Fostering links between the campuses and with partners in Cumbria (regionally, nationally and internationally) is also part of the Learning Gateway's remit. The new University for Cumbria, planned for launch from 1st August 2007, is positioning the Learning Gateway concept at the centre of its plans to build a Distributed Learning Network.

UNDERSTANDING THE NEEDS OF FUTURE LEARNERS

Whilst ICT is not the prime focus of the Learning Gateway, (learning is), the modern student experience (as in life) is increasingly affected by the use of technologies that are becoming successively immersive. The "one-to-one" digital classroom environment described by Liang (Liang et al, 2005) contains a variety of educational computing devices and he says, this trend will continue:

"…in approximately 10 years, more and more students will bring a range of computing devices into the classroom for learning. Ultimately these devices will become indispensable educational tools like pens, papers or chalkboards" (Liang, 2005, p.181)

Once only the province of students on specialist ICT courses, pervasive computing is influencing every aspect of education. The following characteristics of future learners in a distributed context such as that at St Martin's, informed the design of the Learning Gateway and its facilities. It is not claimed that these are unique since many writers refer to them, but using them to inform learning space design from the outset is embryonic in the sector:

- Learners will experience a wide range of technologies and these will be pervasive, for example mobile technologies (phone and personal digital devices) with the expectation that their higher education experience will include the daily use of ubiquitous computing.
- Students will need to feel that his/her personal characteristics, values, career aspirations and lifestyles are accommodated
- Learners who are technologically confident will demand increasingly interactive and exciting experiences
- Students will be prepared from an early age to enter higher education and will have developed their own personal development plans and portfolios, moving freely between institutions to enable a flexible, lifelong educational experience
- Learners will be used to creating their own content via wireless networks and portable devices with the boundaries between entertainment and education becoming increasingly blurred – so called "edutainment" and "Internet2"
- Students will demand help and guidance with their learning at all times and will judge the institution by how well integrated these functions are (including administration)
- Collaborative learning, and peer supported learning will be the norm using ICT – students will learn from each other as much as from a tutor
- Social interaction will still be important and social computing will facilitate a sense of belonging

Initially, it was felt that the above description might be more applicable to younger, traditional HE entrants. It is felt however, that mature students will increasingly take on these attributes, but may need additional support to prepare them for their personal higher education experience. An

overarching trend is emerging, whereby many students may not attend on campus but require all the facilities of a modern University. Student cohorts are merging to become a mix of remote and on campus learners and so the term “distance learner” is less relevant. Similarly, full time students are disappearing in the traditional sense, as many of them already juggle paid employment and family responsibilities with their studies. In the light of the above factors, a decision was taken early on to create a wireless ICT environment to ensure maximum flexibility and engagement by learners – the idea being to allow them to connect their own devices to the network and to give them more control of their own learning environment, providing them with maximum opportunities to learn. Consequently, apart from the service desk pcs, there are no fixed computer terminals in the Learning Gateway.

THE EDUCATIONAL PHILOSOPHY OF A NEW LEARNING SPACE

So, based on the needs of learners and the mission of St Martin’s and the emerging University for Cumbria, the learning philosophy that the Learning Gateway espoused emerged. This was achieved over a series of months by discussion and debate in the institution. The strategy was to facilitate organisational development and support the converging roles of tutors, students and supporters that the above scenario suggests. *Flexibility* was seen as the best way to deliver this experience to learners and to accommodate the emerging partnerships and collaborative learning styles required to bring about the step change in the learning culture, underpinned by a constructivist approach to planning the space. The next section of this paper links the central aims to the building design and facilities of the Learning Gateway.

Aim One: Creating a flexible learning environment through new learning spaces

Once the guiding principle of flexibility was established the architect, Architects Plus, Carlisle was given the design brief

“The Learning Gateway concept is based on the key assumption that the relationship between the physical setting and the students’ learning experience is vital and that the latter can be enhanced if the former is designed right from the start”.

Raymond Whittaker, Architects Plus comments:
“To have such a statement within an architectural brief is unusual and to the architect both daunting and exciting at the same time for it acknowledges that a building is not merely a passive box within which activities take place but a structure that can actively affect how the occupants interact. In fact the brief for the Learning Gateway was unusual in many ways for it did not specify the number or size of rooms but instead spoke of interactivity, flexibility, innovation and institutional pride.”

And

“The finished building has a simple and transparent logic. At the south end are the main entrance, toilet facilities and primary circulation with the wrap around glazing and the three storey high column acting as a beacon and marker for the facility. At the north end is the lecture theatre, acoustically treated for unaided speech, fitted with IT and AV technology and containing over 140 seats. The theatre acts as a solid bookend to the building and acknowledges the presence of neighbouring residences. Between these two elements are the open plan learning spaces looking out to the campus on the east with a series of individual “flexi-rooms” rooms on the west. The nature of the spaces changes from informal to formal as you rise through the building. The colour scheme has been chosen to differentiate the different layers of the building

without inhibiting how students and staff wish to use the space itself. A design metaphor has been used to shape the learning context – that of the student journey in a Cumbrian landscape. This unorthodox approach arose out of creative thinking techniques derived from the Change Academy project. The results are dramatic. Warm colours have been used for busy traffic areas, and these recede in intensity as you move upwards.

At the heart of the learning spaces is the most dramatic element of the building, a soaring four storey atrium. This demonstrates the transparent open nature of the Learning Gateway and encourages interaction between its users. With large glazed facades and glass partitions and balustrades visibility is a recurring theme in the building. But the atrium also serves practical purposes as well allowing natural light to penetrate into the heart of the building and acting as a natural ventilation chimney drawing fresh air up through the floors and avoiding the wasteful cost of mechanical extract. The Learning Gateway is a bold statement that looks forward to new ways of learning but does not dictate rigidly how it is to be used. It is now up to students and staff to make the building their own and only then will the physical setting enhance their learning experience as the original brief required"

Pedagogical Principles of the Learning Gateway's design

To provide a seamless, flexible student experience, it was necessary to plan how the facilities and furnishings in the Learning Gateway would combine both the technological and social elements in support of the blended learning model. It is well documented that e-learning projects that fail are due in part to a lack of integration between technology and people. We wanted to avoid this pitfall. To provide a focus for the work, and to differentiate between traditional teaching space provision and the new learning culture, a set of theoretical pedagogical principles was devised following the learning philosophy outlined above. These were drawn from the literature and by visualising some learning scenarios that the Learning Gateway would afford. (See Appendix 1) The term "SMART"[1] learners was coined to describe the characteristics of active learning that the Learning Gateway espouses. Whilst these principles are contested, not least in the literature, they have been a helpful central framework for designing the space especially as the objective was to support a wide range of learning approaches.

Characteristics of SMART LEARNERS

The SMART learners concept was an attempt to capture those aspects of studentship that it was thought, would lead to confident independent learners as signified in the Corporate Plan and that took a constructivist approach (a key concept of social learning). The following framework is simplistic but provided the impetus for design of the Learning Gateway. These concepts interfaced with the aims in the institutional Learning and Teaching Strategy and other best practice models of independent learning. SMART Learners:

- **S**ee the possibilities – are open to new ideas and paradigms and keen to experiment
- **M**ake informed choices – can critically reflect on their own learning and change their learning style according to the task in hand
- **A**re active learners – can initiate their own learning strategies and know how to achieve deep as opposed to surface learning
- Are **R**eady to learn – are motivated and self-regulated, not wanting a transmissive style of teaching
- **T**ake control of their own learning environment – understand how to learn and work well in a facilitative learning situation

After considering how to implement these within the plan for the Learning Gateway certain

questions arose that the design team had to then consider:

- *How can the space and facilities be a place where students can grow and develop?*
- How can the space be made adaptable so that students and staff can learn from each other?
- Learning how to learn - how the space can be used to support independent learning and new partnerships
- How can students and staff learning be supported via the Learning Gateway?
- How can the space suggest and support collaboration without imposing?
- *How can we create a welcoming and sustainable learning environment?*

By mapping digital media and furniture options to these principles a design for the physical and virtual learning environment emerged. A Steering Group, made up of students, academic and support staff, including the Architect, students and senior managers with responsibility for aspects of the College's infrastructure, was set up to oversee the process and involve stakeholders in the operationalisation of the project.

The ICT infrastructure – supporting active learning
The focus for this article is not technical, although the infrastructure requirements needed to support e-learning approaches are integral to the construction of the learning environment. The choice of digital media in the wireless networked environment has been informed by the need for security, flexibility, interoperability, scalability and congruence with the Learning Gateway principles. Higher education institutions have some of the best ICT facilities in the UK, and there are many examples of innovation; in this respect, St Martin's may not be ahead of current ICT innovative practice. However the author suggests that the integration of ICT with social, informal and formal learning space, with learner and tutor support, *that students own as much as tutors, and that is supporting culture shifts and changing roles,* in a unified setting is novel and of value to the sector.

Implementing mobile and wireless technologies in this context are not without challenges. A balance has to be struck between access and flexibility from a learner perspective alongside the necessity to protect the investment in ICT and necessary levels of network security. The ICT facilities in the Learning Gateway comprise:

- Wireless network with laptops for loan anywhere in the Gateway
- 150 seat lecture theatre using advanced real time video conferencing and interactive polling
- Scanning, printing, portable video conferencing facilities, resource areas
- Interactive smart boards, high quality data projection, DVD,CD in the ten flexi-rooms
- **Digital data capture/storage and capability for streaming lectures to multiple locations in real time**

It is interesting also to note that new terminologies had to be found to describe some of the facilities and to highlight their "difference" to the proposed user community and hint how they might be used in new ways. For example, the term "seminar room" was rejected in favour of "flexi-room" - used to describe the ten glass fronted spaces where learning activities would take place, integrating the engagement with the available technology. After some deliberation, the open spaces were named "community learning spaces" to signify their shared used i.e. between students, tutors, supporters, visitors and potential learners. Interestingly, the bigger concept of "sharing" in higher education is being hotly debated in academia. Synergies between the various areas in the Learning Gateway have yet to be properly evaluated.

Aim Two: Building an integrated support environment developed in partnership with academic and support staff

Creating an innovative technology rich learning space like the Learning Gateway is only the first stage in the learning process. Implementing the services, facilities and support and ensuring that they in turn drive the envisaged changes in tutor and student approaches towards facilitative learning are a massive cultural change for any organisation. The College's Corporate Plan mentioned above had already outlined the vision for establishing strengthened partnerships between academic and support staff and conveyed the commitment to embed student-led learning support across the institution. The Change Academy project however, allowed St Martin's to apply the concepts of the Learning Gateway to the overarching plan, and to create a synergistic framework that would support and engender the required cultural changes without imposition. Rather, it would build on the progress made to integrate flexible learning approaches to date and suggest a process for staff (academic and support) to engage with, in pursuit of continuous improvement and supported staff development. The aims of the Framework – called *Taking Flexible and Distributed Learning Forward Together* – are shown in Appendix 2. It is not the aim of this paper to describe it more fully here and clearly the framework is only partially implemented at this stage, but the intention is to highlight how the Learning Gateway is a catalyst in orchestrating the required shift in the learning and teaching culture. The aptly named "Gateway Process" has been designed within the Framework to describe the bringing together of a new "academic team" – made up of staff from various professional disciplines in the College, including, academic quality, library, learning technology, ICT, staff and student support professionals. This includes the setting up of a Learning Technology Development Unit from September 2006 that interfaces with Faculties and Services in partnership working modes.

Aim 3. to provide scaffolding mechanisms to learners and tutors

The Change Academy Framework is designed to be a tool that will support tutors and support staff in their praxis. It contends that in order to build a strong learning community, conversations have to take place about emergent learning and teaching strategies and that these conversations have to be facilitated and evaluated on an institutional basis. The College's Centre for the Development of Learning and Teaching operates from the Learning Gateway and is already enabling links between Learning and Information Services' Learning Facilitators to be established such as undertaking shared projects and evaluation. It can be seen that measuring the utilisation and take-up are essential and a number of success criteria have been established, not least extension of the Gateway concept to other campuses and sites. Student and tutor support mechanisms include staff development courses, bright ideas sessions, demonstrations and one to one consultations. The Gateway Process will in time form an integral part of the academic learning and teaching infrastructure.

Student-led support is being monitored but has been part of the design process – that is promoting social groupings and conversations aiding group discussion, collaboration and teamwork. This is demonstrated in the choice and arrangement of the furnishings: social learning space – comfortable seats and informal groupings, touchdown space for short stay and circular, modular furniture.

The TLTP sets out a helpful framework of important teaching/learning activities for a learning space to support and comments:

> "The value of any learning space can be increased with appropriate training and support; evaluation (examining ways in which facilities are used, misused, and not used) can often point out ways in which training and support can be improved."

http://www.tltgroup.org/programs/Teach/Eval_Plan.htm

Central to the concept that the Learning Gateway embodies is a deep understanding of the role that students play in shaping their own learning experience. Students will form a major part of the ongoing evaluation of the space and some interesting themes are already emerging, such as how to behave in a flexible learning space, the rules around what can and cannot be supported and the power that the new environment has given to students, plus the concomitant message that sends out to staff. An Evaluation Plan has been drawn up and will be executed during 2006-7; it is essential that the group steering the evaluation engage critically with the student and tutor experience *and* the support staff experience of interaction in the Learning Gateway. These perspectives combine in ways not hitherto encountered, making the environment decidedly experimental and thus a fertile bed for further research. Investigative research on personal learning experiences, such as those taking place in the Learning Gateway, must take into account individuals' views of learning and teaching.

CONCEPTIONS OF TEACHING AND LEARNING

The literature accurately conveys that tutor and student conceptions are deeply held beliefs that affect approaches to teaching and study. (Prosser and Trigwell, (1997), Hockings, (2005), Kember (1997), McShane (2004), Eley, (2006). The Change Academy team independently came to this conclusion and have identified the following factors to support their work and that of the Framework for action:

•*Teachers' perceptions about teaching are inextricably linked to tutor perceptions about student centredness and how flexible and distributed learning approaches can be utilised and combined*

•*Tutors have their own theories and perceptions about teaching practice that are culturally derived and value laden*

•*Consideration of teaching perceptions has to be a key element in cultural change that is concerned with shifts in learning and teaching, especially where this change involves a move towards e-learning*

(Change Academy, St Martin's College, 2005)

This work will be reported in full elsewhere, but it is the contention of the author that in order to assess the impact of a holistic learning environment, such as the Learning Gateway, student and support staff conceptions must also be studied. Further, research by Kember and Kwan suggest that approaches to teaching have both a *relational* (contextual) and a *preferred* (conceptual) aspect (just like student approaches to learning). Their model linking conceptions of teaching and teaching approaches with learning outcomes, (p.471), allows for contextual influence such as institutional factors (including stability) to affect tutor styles.

"If conditions are suitable, lecturers will normally adopt the approach which is consistent with their deep seated beliefs about teaching. If they move away from this preferred approach to any extent, it will be because of other factors in the model; institutional influence, curriculum design or student presage factors" (Kember and Kwan, 2000, p.487).

They further conclude that certain conditions need to be in place before tutors will leave their preferred style and adopt alternatives; one of these conditions is "teaching rooms which are not conducive to the type of teaching preferred by the lecturer", another is team teaching. This finding has implications for the availability and design of new learning spaces, like the Learning Gateway, that have been purposively built to support variant forms of learning and lends weight to the premise that environments that support a wide variety of teaching approaches might

themselves lead to a wider take-up and use. This study is important because it specifically mentions the classroom space as being a contextual factor and by implication a possible contributor to supporting a change in tutor approaches. Having said that, they are less certain about whether contextual factors *can* actually change tutor conceptions: “it is surely hard for an institution to affect these deep seated beliefs”

Regarding student conceptions of learning, and the support they need, the Learning Gateway Facilitators undoubtedly have this remit. However it will be important to focus on expectations as well as actual requirements, since there may be a difference between what students want (just tell us what to do!) and the independent learning paradigm (go and find out!) that the academic strategy purports. Jamlan’s point, writing about e-learning, has resonance with the aspirations for the Learning Gateway:

“Like teachers, students tend to be creatures of habit used to status quo teaching methods; changes must be at a pace that students are comfortable with. Students must therefore be strategically transitioned to e-learning and not simply dumped in the deep end” (Jamlan, 2004, p.)

IMPLICATIONS FOR LIBRARY AND INFORMATION PROFESSIONALS

This paper has exposed a complex set of factors that have come together to form a new learning environment within a single institution. Hopefully the author has persuaded the reader that the Learning Gateway is not just a building – but a metaphor for change and a driver of institutional academic and cultural development - that might be replicable or have value elsewhere. This outcome has not been brought about by accident, but by the purposeful juxtaposition of strategy, vision and leadership exhibited by staff in a number of departments including Learning and Information Services. It signifies a sea change for St Martin’s and has implications for library and information professional (LIP) roles generally. The key to remaining a relevant and effective protagonist in the student experience of the future, will depend on the alignment of individuals’ career aspirations with educationalist perspectives, having an in-depth understanding of what meta-learners require, and able to work confidently with academic, technical and support staff across organisational structures.

LIPs are well placed to take this forward and demonstrate that LIP roles are both adaptable and multi-faceted; LIP staff will need to assume new identities in order to fulfil this goal and acquire hybrid skills and knowledge that bridge information work pedagogy and technology. These characteristics include learning facilitation, educational design, content creation, application of learning technologies within and between subject disciplines, becoming leaders and innovators in the application of pedagogical approaches to learning support. To some extent LIP staff have always been space managers and service planners, able to assist students to achieve their learning goals, and this will still be required, but at an institutional rather than at a service level. What LIP staff are good at is building excellent networks across service boundaries and understanding the student perspective from multiple viewpoints. This expertise will be required at all levels of the staffing structure, to combine and connect aspects of the learning environment, blending the changes we want to promote in student learning with the support we must give staff to achieve it. This imperative needs to go far beyond the strategic exploitation of learning resources and the embedding of ICT, to ensure that LIP staff are true partners in the academic enterprise supporting and driving meta learning and student success.

CONCLUSION

It is axiomatic that environments that truly engage with the multiple perspectives of learners and tutors, must also examine the conceptions of support staff whilst developing a strong underpinning pedagogical framework. To be successful, part of the framework must therefore accommodate the varying conceptions of all players: students, tutors *and* supporters in order to create useful learning environments. New roles are emerging and different ways of working are required facilitated by innovative learning spaces. The *combination* of these conceptions as facilitated by the learning environment is little understood. Interactions between people and technology are affording synergies and opportunities, but it is only through a deeper understanding of learning that library and information professionals will be able to provide holistic support services. . The author is currently researching into this area at Sheffield University

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APPENDIX 1

Pedagogical Principles underpinning the Learning Gateway concept

The Learning Gateway should:

- Assist students to actively construct **new meanings** as they interact with their environment and encourage student-student communication as well as teacher-student communication. (flexible space, student bookable space, welcoming, circular seating pods, free movement)
- Encourage students to **learn by conversation not isolation** (comfortable seating, grouping and design of furniture, social learning spaces, walk up computing)
- Be attractive and aesthetic to **motivate and excite learners** (colours, visual impact and cues, design, functionality, light,)
- Promote social interaction to **facilitate learning** (seating pods, video conferencing, few rules, learning facilitators, tutors etc)
- Create a **culture of collaboration** by outreach to potential learners and partners (Video Conferencing, streaming, webcams, flexible access policies)
- Give learners and tutors **control over their own learning environment** to promote deep learning and support independent learning (adaptable space, few rules, learning facilitation, space to experiment, portable furnishings)
- Actively support connected behaviour that facilitates **interactivity between tutors and learners** - one to one- and one to many (lecture theatre interactivity, student booking systems; free movement between spaces, ICT facilities)
- Support **a diversity of learning styles** and empower learners to think about their learning situations and adapt their physical environment accordingly (moveable furniture; variety of structured and open space, mobile technology)
- Create an **inclusive social support network** for students. (inclusive policies, partnership services, student engagement, implementation of the new academic team – the Gateway process – Change Academy)
- **Remove barriers to learning** by providing technology that "works" for all, and by welcoming students with disabilities via adaptive facilities to anticipate need (wireless technology, accessibility, adaptations for wheelchair users, hearing loops, guides, training, learning support services)
- Support the creativity, experimentation, and enquiry of learners to **uncover potential new uses of the technology and facilities** (laptops, learning facilitators, observation studies, logs, and ongoing evaluation and reflection)

APPENDIX 2 – THE CHANGE ACADEMY FRAMEWORK FOR ACTION

TAKING FLEXIBLE AND DISTRIBUTED LEARNING FORWARD TOGETHER

CORE AIM: TO ENGAGE ALL STAFF INVOLVED IN ACADEMIC DELIVERY IN A SUPPORTIVE PROCESS THAT ENCOURAGES THEM TO FURTHER EXAMINE FLEXIBLE DISTRIBUTED LEARNING, INCLUDING E-LEARNING OPTIONS AND TO EMBED THEM INTO THEIR ACADEMIC COURSES.

Subsidiary aims:

1. To continuously evaluate the effectiveness of the process and its impact on Learning and Teaching at SMC.

2. Use the power of communication and conversation to encourage and develop emergent change.

3. Utilise the existing and developing teaching expertise and pedagogical knowledge within SMC.

4. To integrate support and teamwork at the heart of the changes taking place.

5. To emphasise the need for a ‘joined up’ approach to the integration of FDL and e-learning at St Martin’s. .

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[1] SMART – is used as a branding term for St Martin’s College in a number of contexts