



iBorrow

laptop borrowing scheme

Studying Learning Spaces in the iBorrow context (Pedagogic)

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1. Introduction

The question of how learners experience learning in a technology rich age is relevant and important. It has been thus timely that the iBorrow Project took place parallel to the design, development and implementation of Augustine House, the new library and student services centre at Canterbury Christ Church University. To examine the context of the iBorrow Project from research and pedagogic perspectives, we will use the metaphor of learning footprints for 21st Century learners. By *learning footprints* we mean some evidence of where a learner has been or is going and what she is using and possibly leaving behind while she is making the footprints.

Within this metaphor we would like to reflect upon two questions. The first is of a descriptive nature and relates to what we have been able to do during the implementation phase of the iBorrow Project: What are patterns in these learning footprints when learners are in Augustine House? And, more generally, how can the iBorrow Project help us to better understand when, where and how 21st Century learners go about their learning activities?

The second question brings in issues of causality or at least correlation and thus can only be speculated upon with the data we so far have from the iBorrow context: How do the affordances of different learning spaces influence learning footprints?

2. Where, when, with what?

The first question was: Where and when do learners go to carry out their learning activities? And, related to this, can we follow their footprints?

It is not easy to answer these questions even within the iBorrow Project. A visit to the JISC Info site¹ of photos showing a large range of learning environments in UK higher education institutions immediately makes it clear that the idea of capturing where and when learners go for their learning activities requires multidimensional elaborations. There are dimensions relating to flexibility, to social interaction, to physical aspects such as types of seating and working environments, and to the tutor/learner balance in decision making about when and how to make use of a learning setting. And to further complicate the issue it is clear that learners move seamlessly in and out of, and occupy at the same time, various blends of learning spaces and environments. Milne (2006)² notes the interplay between physical spaces and virtual spaces, each further segmented in terms of the extent to which the instructor designates or is present in the spaces. He identifies formal physical spaces (such as classrooms or seminar rooms), physical social spaces (such as coffee lounges), physical transition spaces (such as hallways), physical small group work spaces (such as a meeting room in a library), physical private spaces (such as the learner's own residence), virtual social spaces (such as Facebook or any other social community environment), virtual public communication spaces both formal (course environments in VLEs) and informal (blogs), and virtual private environments (email and instant messaging). For any learning activity learners may combine or recombine various combinations of these different types of spaces. In the iBorrow context, learners experience these re-combinations while making use of technology: fixed desktop computers, computers linked to the library system, their personal devices, and the iBorrow mobile laptops linked to the Internet and the local intranet via a WiFi network. We regularly see learners multi-tasking, sometimes with both a fixed and iBorrow computer, so that they can carry out parallel activities such as communication and data sharing with

¹ JISC (2009) Planning and designing technology rich learning spaces. Retrieved 2 November, 2009, from <http://www.jiscinfonet.ac.uk/infokits/learning-space-design/more/flickr>

² Milne, A. J. (2006). Designing blended learning space to the student experience. In D. G. Oblinger (Ed.) *Learning spaces* (Chapter 11). An Educause e-book. Boulder, CO: Educause. Retrieved 2 November, 2009, from <http://www.educause.edu/learningspacesch11>

fellow learners at the same time as they work on an analysis or essay or presentation. Clearly the message is that there is a blurring of boundaries when we consider where and when learners carry out learning activities.

To analyze the complexity even further, we need also to include the learners' virtual footprints, not only where they are physically but also virtually. However, because of the non-invasive policy of collecting iBorrow data we did not collect information on what software applications the learners were using while engaged with the Augustine House computers and thus it is only from our observational data that we can comment on their actual processes and tools while using the iBorrow technology. Nonetheless, we are further than we were before in terms of following learner footprints. The iBorrow Project has moved the field further in terms of capturing this rich context of possibilities associated with when, where and how learners go about learning activities. Now, at least with a broad-brush view, we can describe where learners go in a multifaceted library and learning centre and how long they stay when they are in their various locations. It is the accompanying data that we collected, outside the specific scope of the iBorrow Project plan, involving observations, questionnaires, and contact with students, that we have augmented our location data with richer descriptions of learner activity. The iBorrow Project has a large collection of images³ of students going about their (learning) activities in the Augustine House that show some of the many ways that the iBorrow laptops fit into the mosaics of these learning snapshots.

From the iBorrow data, observational as well as log data captured by the server technology, a fascinating pattern appears to be emerging. When students elect to use one of the stationery computers in Augustine House they also appear to be working privately and predominately individually. When however, they are using the iBorrow laptops with their easy mobility and access, we see social interaction, use of the group spaces in Augustine House, and blends of discussion, computer use, debate, sharing, and combinations of formal and informal learning as well as of private and personal activities occurring parallel with active learning processes. When we see students move with their iBorrow laptops from a group study room to a social space we see them continue with their on-going blends of learning and living. Physical spaces do not constrain them. The iBorrow data make this clear to see.

3. Affordances: Correlation or causation?

Moving from description to causation (or at least correlation), our second question is how do the affordances of different learning spaces influence learning footprints? Universities such as Canterbury Christ Church make large investments in both physical and virtual learning environments on the assumption that these investments will lead to different, and presumably better, learning footprints than in pre 21-Century times. Although it remains frustratingly difficult to isolate the impact of a particular learning space or intervention on learner development, our experiences with the iBorrow Project suggest that the affordances of Augustine House coupled with those of the mobile, easily accessible iBorrow laptops, their linkage with fast and reliable servers with personal and group archives and tools for group collaboration and knowledge construction are important to the new patterns of social learning that we are seeing emerge. The affordances of Augustine House as a physical environment are a critical component. Learners can easily flow in and out of different sorts of physical settings, with different sorts of furnishings, and their supportive technology flows along with them. They stay on the network if they move from a group room with a work table to a social area or to settings with cushion-type seating and informal table and work services. It is the combination of the affordances of Augustine House as a physical facility with the affordances of the iBorrow easy-to-borrow laptops and the high speed WiFi network that, we believe, leads to (and thus not only is correlated with) the many examples of different learning processes and settings that we see in the Augustine House context.

³ <http://www.flickr.com/photos/heywayne/sets/72157622488906510/with/3968956745/>

Learners are in pairs, triads, groups, share data and ideas via display monitors or within combinations of physical and virtual workspaces. Virtual and physical tools and resources mingle seamlessly; learners flow in and out of combinations of social and private learning and social and private knowledge sharing and construction. These combinations are occurring based on the learners' own ideas; in general tutors are not (yet) steering them to group-based learning settings or knowledge sharing and construction.

4. Conclusion, for the moment

The iBorrow context, that of a blend of mobile and easily accessible network technology, standardized versions of tools and applications available on demand in the same updated configuration to all learners, and flexible learning and interaction spaces in the Augustine House, all under the learners' control, highlights the complexity and the excitement of following learners' footprints in higher education. We have further confirmation of how easily today's students handle information and communication technologies and how they multi-task in many ways as they interact and learn. And we have at least correlation evidence that the affordances of the iBorrow context are associated with many different patterns of learner interaction.

Several promising lines of research are appealing in this context. One relates to pedagogy: What learning activities can tutors incorporate into their modules that capitalise on the affordances of Augustine House and its technology, particularly the iBorrow laptops? Will these lead to new learning experiences within a module or programme that in turn can affect the curriculum and the expectations of both learners and their eventual employers? Another line of continuing research relates to a deeper investigation of what learners are doing, beyond location, particularly with their iBorrow laptops as they work together. Do the affordances of the physical facility and the technology have different empowerments for different points in the learning process, for example, for conceptual exploration, for peer support during assigned learning tasks, or for revision practices? For each of these different learning moments, how can the affordances of the physical and virtual contexts be further exploited? And another line relates to changes in learning spaces in the future: Can the multi-faceted affordances of a context such as Augustine House and its technology lead to a richer form of traditional learning settings such as lectures or seminars, changing not only their locations but also their dynamics?

The iBorrow Project has helped us along the way to these sorts of new investigations.

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6. About Betty Collis

Betty Collis is an Emeritus Professor at the University of Twente in The Netherlands since her early retirement from that university in 2005. For a summary of her academic work see <http://users.gw.utwente.nl/collis/>. She now works as a learning technology consultant, see <http://bettycollisjefmoonen.nl>