

Student ICT Induction in US Higher Education Institutions

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Introduction

It is important to begin this overview with a few warnings. Although the writer has considerable knowledge of the US Higher Education system, gained from working in the US over a considerable period, most of the information reported here is a result of discussion at the Educause conference in October 2000. The Educause annual conference is the main conference covering the application of ICT in higher education. Although there has been increasing international participation in recent years, it remains an overwhelmingly US-dominated meeting, attended by 6,500 delegates. It covers both academic and administrative IT.

Another factor is the diversity of both US higher education and society. In the UK, we tend to hear of the achievements of a relatively few institutions, such as Harvard, MIT, Stanford. These represent one end of a very broad spectrum in a sector that is much more diverse than the UK. The most widely-used classification of US institutions is the Carnegie Classification (see <http://www.carnegiefoundation.org/Classification/CIHE2000/defNotes/Definitions.htm>) which divides institutions into broad classes: Doctorate-granting, Masters, Baccalaureate, Associates, Specialized and Tribal. There are sub-classifications of all of these. Almost every UK HEI would be classified either in the Doctorate-granting or the Specialized groups.

Even within the groups, there is an extremely broad range. At one end, there are the extremely rich private institutions, such as those comprising the Ivy League. Although most such institutions are described as “needs-blind”, in that they have such substantial endowments that poorer students will have fees paid, in practice there are very few students who would be considered poor by UK HE standards. Issues of computer ownership and familiarity are absent. At the other end, there are institutions with what we would call a substantial access agenda, such as the University of Central Florida cited later. Even this is classified as a Doctorate-granting institution, i.e. in the highest category. In reality many of the Carnegie Classes have more in common with our FE Colleges.

Between the two extremes quoted above, there is still a substantial range. Liberal Arts colleges are predominately private, and often very rich. They can afford to select students carefully, and again have little difficulty with students having little ICT knowledge. Within the public sector, there are many Universities with both a reputation and endowment comparable to the major private institutions (e.g. Michigan, Illinois, Minnesota). Very often, they receive substantial funding from their State in order to provide a focus for inward investment in IT industries. But there are many state institutions that are not so well funded, and suffer many of the challenges of UK higher education. Even this categorisation is incomplete, since some of the state universities are *systems* including a range of institutions. Examples are Illinois, California, Maryland and Wisconsin. In each case there is at least one leading research institution (respectively

Urbana-Champaign, Berkeley and San Diego, College Park and Madison), but a long tail, all sharing a common administration.

The common factor, though, is that all charge fees and over recent years an additional "technology fee" has been common. In this environment, the additional cost of owning a computer is relatively insignificant, so most arrive with one. The level of knowledge on arrival is also significantly higher than in the UK. With the long history of fees goes a variety of mechanisms to help students cope. Courses last longer, to allow time for students to work. Universities will employ students in support roles to a much greater extent than in the UK (it is very common for the Computer Centre to use student advisors and programmers, and almost universal for the catering staff to be students). It is to be expected that a similar student culture will develop in the UK, but probably over quite a long period of years.

Further, the gap between rich and poor is far wider in the USA than in the UK. While the US higher education participation rate is on average higher than that of the UK, it is close to 100% in most, and close to 0% in deprived areas. The main deprived areas in the US are in the cities and in parts of the countryside. In both cases, deprivation and consequent college non-attendance, is much more marked than in the UK. Within a few blocks of both the affluent University of Pennsylvania and of the White House are living conditions that make Moss Side look like a garden suburb. Likewise rural deprivation is extreme, even in otherwise affluent states like Virginia and North Carolina. Thus averages mislead, and most college students as a result have ICT experience before entry in most institutions.

Overall Impressions

The overall impression is of concern for the less-advantaged students, small though the number is. There is little idea of how best to handle this, and therefore interest in the outcomes of CITSCAPES. The institutions most like UK universities estimate that about 80% of students arrive with both computers and the knowledge to use them. A further 15% have some skills, but no computer of their own. Thus the market for basic ICT training is quite limited and very few institutions provide comprehensive ICT induction training on the pattern of many UK universities.

Currently only a limited number of institutions insist on PC ownership. The most interesting example is undoubtedly the (public) University of North Carolina (see <http://www.unc.edu/ccil/>), where laptop ownership has been required since autumn 2000. It is thus too early to judge its effect, but there are some interesting findings, including a claim that student ownership saves the institution sufficient to allow it to subsidise purchase for the small number of students who otherwise would not qualify for entry to UNC. UNC runs only limited ICT courses for students: there are CBT courses on the website and a series of two hour workshops on specific topics open to staff and students. Details are available on the above website.

Very commonly the driver for universal ICT availability and skills is administrative rather than learning. In contrast to the UK, where the emphasis has been the use of ICT in teaching, US universities have invested more heavily in administrative computing and in the use of ICT to interact with the institution. The driver here has been economy, with the opportunity to reduce the number of front desk staff in financial aid, housing and other offices, by allowing students to interact directly with their records. It should be remembered that, because of the tradition of working through college, the dominance of the 9-5 study pattern has been absent in the US for many years. The leader in this change

was the University of Delaware, which mounted all its administrative applications on the web in 1996-98, but the leaders are now the Universities of Washington (<http://www.washington.edu/>) and Minnesota (<http://www.umn.edu> and see <http://www1.umn.edu/dmc/portfolio/educause00.shtml> for information on its faculty and student support model).

This has led most institutions to develop Managed Learning Environments (more commonly called Learning Management Systems in the USA). The most prevalent are WebCT and Blackboard, but with much interest in Prometheus (<http://www.prometheus.com/>). The deployment of such systems requires students to be familiar with ICT.

Specific Examples

North Carolina State University (<http://www.ncsu.edu/>) is a Land Grant College, which means that it has a commitment to outreach (the Land Grant Colleges were formed in the late 19th Century to take higher education to the more remote areas of the US). It works in the shadow of its more prestigious neighbour, the University of North Carolina, which means that its student intake is restricted.

The Director of its Computer Centre, who is respected both in his profession and within the university, has recently taken on the strategic role of promoting the use of ICT across the institution. It will be of interest to watch the development of this wide-ranging role. He believes that 5% of NCSU students arrive with no ICT experience, and that for an institution like NCSU this will not decline rapidly; this is because NCSU's hinterland is not well-served by telecoms companies, so penetration of the Internet is patchy.

The Computer Science Department provides for-credit introductory courses, both as part of its degree programme and certificated (see <http://www.csc.ncsu.edu/degrees/undergrad/certificate.html>). The latter, however, is very much a programming qualification.

Reflecting that the vast majority of students have a computer at home, at least, NCSU issues a CD at its parental induction sessions. While this is primarily aimed at giving an overview of the institution (its content is largely excerpts from its website), it does provide an opportunity to introduce the ICT facilities.

Arizona State University (<http://www.asu.edu>) has a substantial distance education programme, so issues its ICT orientation materials on a CD (also available on the web at <http://www.asu.edu/it/fyi/orient/>). This is supplemented by voluntary person-to-person orientation sessions. The university believes that such voluntary sessions are important in view of the diversity of its students, other reasons being identified as the distinction between task literacy and computer literacy, inability to communicate and high anxiety.

The State University of New York, Buffalo is using the concepts of IT Fluency for its CSE101 course. The Educause presentation is available at <http://www.educause.edu/asp/doclib/abstract.asp?ID=EDU0004>. They report that the use of this framework has increased literacy and lowered costs; however, the work was supported by an external PEW Foundation Grant so it may not be clear that all costs have been covered. CSE101 (or CS101) is a designation used almost universally in the US for an introductory computer science programme. Most US institutions have a highly modular course

structure (like Stirling) so this will very often represent their equivalent of the UK ICT induction courses.

SUNY Buffalo's use of FIT is fairly recent, so there is only preliminary experience; this programme should be tracked. A number of other institutions are using, or considering, FIT, judging from a search on "IT Fluency" at www.google.com, although none were evident at the Educause meeting.

The University of Central Florida, although classified formally by Carnegie as a Doctoral Institution is heavily oriented towards the delivery of learning to distant students. They take the line that essentially all their students will need to use ICT, quite possibly without coming regularly to campus. Therefore they issue all students with a CD-ROM, the Pegasus Disc, which sets up their PC to run all the software needed to study at UCF, and contains some induction material. They identify a large number of issues in their presentation, as well as presenting information on the relative performance of distant and local students.

An aside from the meeting was reference to the Association of College and Research Libraries (ACRL) Information Literacy Competency Standards. These appear to be similar to those being considered in the UK by the SCONUL Task Force, and more information is available at <http://www.ala.org/acrl/ilcomstan.html>

Finally a description of one of *the* challenges from the *University of Washington*: "Information literacy as the hallmark of undergraduate education". UW has a variety of very impressive material on its website at <http://www.washington.edu>. UW was awarded an Educause Award for Systemic Progress in Teaching and Learning, so this is a site to watch. See <http://www.washington.edu/computing/windows/issue25/educause.html> for more information about the award work.

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