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The costs and benefits of implementing a university-wide VLE: some real data

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Abstract

Kingston University implemented an institution-wide VLE (Blackboard) four years ago, first going live in January 2001 with 60 modules. There are now over 1800 modules supported via Blackboard. This represents around 90% of all students and staff using the VLE. Yet, in early 2000 there was no VLE and only very localised e-based learning. This paper describes how we got to where we are now, and assesses the related costs and impact on learning and teaching.

BACKGROUND

Before the University could consider rolling out a VLE it was necessary to strengthen the infrastructure. This involved enhancing the IT networks across the University *and* strengthening the management structure in the computing service. *NB. A comprehensive restructuring of the computing service was carried out but the cost of this (including consultant's fees) is* not *included in the analysis.*

At Senior Management level agreement was reached to support and fund a VLE with the provisos that a) the IT network and user support services were robust and b) the VLE was used to *support* traditional approaches to teaching and *not* to replace them.

The implementation model

The model focused on a staged implementation of the VLE over a period of 4 years. Key elements to this model included:

➢ The establishment of an Educational Technology Unit (ETU). Government Funding was used for a full-time Director, a technician, and six seconded part-time staff (one per Faculty). It was critical that the seconded staff were recognised teaching academics in their faculties to provide a strong local component to a central strategy.

➢ Joint Management of the Project between ICT Services (the Head of Academic IT Services) and Academic Development (Head of the Educational Technology Unit). This collaboration has been crucial to the success of the roll-out.

➢ Staged staff development programme. Although we recognised that the real potential of the VLE was the blending of e-learning and face-to-face teaching and learning, we felt that this was a later goal rather than the starting point. The first stage of staff development was to overcome any hurdles to staff using the technology and familiarisation with the available tools. Over 600 staff voluntarily undertook this training in the first year. Initially staff would use the system with existing teaching materials and then start to explore the administrative, collaborative and online assessment facilities. Even at this 'basic' level of implementation students derived benefit through, for example, increased flexibility of access and enhanced communication. This level of staff experience provided the base for the next stage of staff development with a focus on the effective and appropriate integration of e-learning and face-to-face approaches.

An important element of this is the University's course team-based Sustainable e-Supported Learning (SeSL) programme. Staff teams complete a number of reflective exercises on their course approach and use of Blackboard and then, where appropriate, redevelop this model to make best use of online and face-to-face approaches. Subsequently, during a one day intensive workshop with a range of specialist staff in support (academic, ICT/Media, Library and Copyright), the team works to re-design one of the learning activities. Eleven module teams have completed SeSL and another 135 staff attended a related development day.

Once it was agreed that the VLE was an institutional goal, all relevant funding sources were scrutinised, while the Learning and Teaching Strategy included a commitment to a VLE with yearly development targets.

Capital funding for learning and teaching was used to:

➢ Enhance the networks, increase Learning Resource Centre (LRC) facilities,

➢ Install digital projectors etc in teaching rooms, and

➢ Buy the VLE servers and licenses. The direct costs of the VLE at this stage were small and we felt that if Bb 'didn't work' the bulk of the money had been spent on hardware and infrastructure that was needed in any case.

The policy was to standardise on one VLE across the Institution and Blackboard was selected because of its intuitive interface. Initially Blackboard went live as a standalone system but in September 2001 the enterprise-level of Bb was installed which allowed integration with the student record system.

The cost model

The purpose of this cost model is to identify the costs associated with implementing Bb as a *corporate* system. It addresses two main areas of investment:

1. Direct costs of implementing Blackboard:
   ➢ Hardware, Software, Integration and Customization
   ➢ Support staff in Educational Technology and ICT Services
2. Indirect costs relating to the overall improvement of the infrastructure for learning and teaching.

Although the initial systems integration was expensive (£85,000), *the overall cost of delivering Bb over the 5 year period averaged £136,000 per annum for hardware and software.*

There are 22,000 users registered on the Bb system, including all students, staff, and students taking a Kingston University award at associated colleges, nationally and internationally. In addition, our joint Faculty with St George's Hospital Medical School uses our Bb system. *Therefore the yearly cost per user registered on Blackboard is £6 for hardware and software.*

1. Direct Costs of Implementing Blackboard:

Phase 1:
Installation of the **Entry-level** Blackboard system: **October 2000**:
This was quick and easy to set up as a standalone system. We used it for staff training and for producing exemplar modules. The costs were:

Hardware:	£33,000 (one server, SUN E420)
Blackboard license:	£ 3,500
Relational database:	£16,500
Total:	£53,000

Support staff (for hosting and supporting a total of 150 modules and 5100 users), covering the Educational Technology Unit staff and ICT Services staff: £230,000

Phase 2:
Launch of the **Enterprise–level** Blackboard system: **September 2001 to December 03**. The costs were:

Hardware:	£95,000 (two servers, SUN E420s, one for the Blackboard Application and another for the database)
Blackboard license:	£70,000 over 2 years
Relational database:	£33,000 over 2 years

Integration and customization costs: £85,000 (for the work to integrate Bb with our Student Record, Personnel systems and Novell system. This is a start-up only cost; it includes the cost of Bb's technical services and our staff resources.)

Total	£283,000

Support staff (scalable to all University modules and all staff and students), as in Phase 1.

Phase 3:
Upgrade of the **Enterprise–level** Blackboard system: **January 2004 to the present time**. The costs were:

Hardware:	£98,000 (two new servers: SUN V880 for the Bb Application and SUN V480 for the database). £80,000 for new V880 test/development server and for leased V880 as interim
Bb license:	£ 94,000 over 2 years
Relational database:	£33,000 over 2 years
Maintenance costs on integration and customization work, including new customization work:	£40,000
Total	£345,000

Support staff costs (scalable to ALL University modules and ALL staff and students), as in Phase 1, but with the recent addition of 2 FTE staff in the ETU: £300,000 (payable yearly).

Costs over the first 5 years of implementation

	Hardware/Software	Support Staff
Phase 1: Oct 2000	£53K	£230K
Phase 2: Sep 2001 to Dec 03	£283K	£518K
Phase 3: Jan 2004 to Oct 05	£345K	£530K
Total costs: Oct 2000 to Oct 2005 (projected from Mar. 05 - Oct. 05)	£681K	£1278K
Cost per year during the first 5 years	£136K	£255K

Thus, our direct *yearly* costs for delivering Blackboard to support *all* students (15,000 FTE) and *all* staff (1,500) are: £136K on hardware/software plus £255K on support staff.

Cost per registered user at Kingston (22,000 users) = £6 (h/w & s/w) plus £12 (support staff).

2. Indirect Costs Relating to the Overall Improvement of the Infrastructure for Learning and Teaching

Enhancements to the network infrastructure:	£961,000
New networked PC facilities for students:	£839,000
Classroom technology:	£561,000
Two new **video/audio streaming** servers:	£ 30,000

Blackboard content can be streamed from these servers, providing more efficient access.

Three **e-learning staff centres:**	£110,000

Each centre has up to 6 PCs, colour printing, scanning, digital video cameras, digital video editing tools and loan equipment.

ICT provision for **students with disabilities** (phase 1): £30,000
To deliver over the network two specialist applications addressing mainly dyslexia and visual impairment.

ICT provision for **students with disabilities** (phase 2): £55,000
From September 2003, we provided specialist equipment and software in dedicated rooms within the LRCs. This provision has become increasingly necessary to enable students with disabilities to access online learning.

Impact and benefits
There are a number of indicators that demonstrate the impact of the VLE implementation within the institution:

➤ Coverage. Bb is being used in all schools and faculties across the institution with over 1800 modules having some level of e-support, 90% of students and academic staff using the VLE. The extent to which this is an Institutional development cannot be over-emphasised: there can be few members of staff (academic, technical and administrative) who have *not* heard of Bb. Governors know about it and have had demonstrations; and new applicants who are offered a place have access to a preview site.

➤ Student opinion. Students like it - evidence from various surveys shows this, and anecdotal evidence is that it is partly student pressure which is driving staff take up. For example, the Students' Union reports: 'Blackboard has had an overall success with the demographic diversity of student membership. The flexible learning and support this system gives enhances the learning process for the student body, and keeps learning and teaching flexible for all. Students who have the full advantage of Blackboard and have access to all the information say that "Blackboard is an excellent learning aid!"'.

Regular surveys are carried out of Bb usage. In summer 2003 (the year for which the surveys obtained most coverage across faculties) out of 858 students completing the questionnaire 816 reported using Bb and of these:

Usage	608 (74.5%) frequently.
Usefulness of resources	527 (64.6%) found the content areas useful or very useful; and 256 (31.4%) the external links (to external websites) useful or very useful.
Communication	328 (31.4%) had not used the discussion board area while 116 (14.22%) found it useful or very useful; and 317 (38.9%) found the email facility useful or very useful.
Overall	606 (74.3%) said Bb had made a significant contribution to their studies.

➤ Impact on learning. There is evidence from one school which uses the VLE widely to manage administration, support the lectures and do on-line assessment, has had better than expected retention during a year in which they increased intake numbers significantly (with all that this entails for entry qualifications) and also enhanced their use of the VLE. Early evidence from research in this School indicates that the VLE played a key role in retention, as well as the management/administration of the cohort.

Retention rates across the University improved from 2000/01 to 2001/02 and from 2001/02 to 2002/03, although a range of factors have contributed to this.

Data will become available in summer 2005 about how learners use Bb and how it affects their learning approach.

EVALUATION AND CONCLUSION

Why has the implementation gone as well as it has? We believe that the key points are:

➢ an easy to use product;
➢ resilient IT infrastructure;
➢ good team of academics and ICT staff to drive it;
➢ embedded into Learning & Teaching strategy with yearly development targets;
➢ cross-institutional staff buy-in and positive student opinion.

We chose a model with low materials-development costs: staff are largely writing and making their own material to go online. *None of this time is costed here*. It is a tribute to their commitment to high quality teaching that so many staff have put their time and energy into this.

However, it has not been without frustrations for staff and students, e.g. first-time around problems with rollover of Bb modules from one year to the next and non-enrolment of students onto modules in the Student Record System.

The costs involved have shown that our deployment of the VLE is a cost-effective and sustainable solution for enhancing the learning and teaching experience.

New technologies, media education and literary education

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Abstract

This article demonstrates the consequences of civilisation changes caused by the modern transfer toward the digital sign system of communication. It shows those "personality" and "capacity" deficiencies which emerge with a long-term exposure to the new media, and which can be mitigated or "prevented" through the frequent encounters with the literature. The next step tries to find a model of classroom literature teaching which would enable literary education to realize those functional and educational goals and assignments that derive from the literature. Through that the abilities can be (co)-created that tend to become stunted or not sufficiently developed with a too long or too intensive usage of and the exposure to the new media.

INTRODUCTION

Most literature dealing with the problems of the modern media and the new technologies can be, according to the current view of things, classified into two groups. The first one warns against the damaging consequences of the exposure to these so-called "electronic - drugs". They are said to increase aggressiveness and resorting to escapism which brings forward the fact that the new technologies and media are a reality of our time (BOECKMAN, HIPFL: 1989). This is the reason why the school and the teachers should make as much use of its creative potential as possible.

The schools have, in this respect, acquired a number of new tasks.

Alongside the *students training* for the independent usage of the new technologies, the new media and the traditional media (GOODWIN, 1992), the schools should be able to *determine also the personality and the ability deficiencies which emerge with a long term exposure to the new media* (receptive forms) and also *with a longer exposure to the new technologies (active forms - play, learning). Hence they should use the new technologies and the new media* for the educative process. They should introduce such *activities which would prevent potential deficiencies* and guarantee the development of those forms of perception or such sensitivity of thought and such forms of creativity, for which it has been/will be established that the usage of/the exposure to the new media will/does not cause them to become stunted persons or cause them not even to develop. These are the tasks the media reality is faced with in the literary classes and in the education process. They are the tasks which need to reconsider also the main goals of the literary education and to define which methods of teaching the literature reading should be given the priority in the context of largely passive forms of consumption of the media space (GERETSCHLAEGER, 1997).

How to structure the literary education to also become the media education?

THE USE OF THE NEW TECHNOLOGIES AND THE NEW MEDIA CAUSES THE DEVELOPMENT OF THE RATIONAL TYPE OF A MAN

The problem area, exposed by the experts dealing with the influence of the media as probably the most important one, is the hypothesis of unavoidable logical changes, which has throughout the history of mankind been caused by every change in the communication medium. It is currently also being caused by the shift from the mainly verbal means of communication towards a visual, iconic communication, favoured by the modern civilization and transmitted through the new media. Some people even suspect that *the shift to this new type of communication, based on a digital system of signs, is liable to cause the development of a new type of a man in a civilization governed by the audio-visual means of communication.* It is also believed that this man will differ from the one developed by the form of the social behaviour in which the communication was performed through the written medium.

At first sight, such a scenario appears as anti-Utopian, and it can be rejected as being pessimistic in a Futurist sense due to the amount of discomfort it arouses. However, the observations on the actions linked with the growth of so-called functional illiteracy, show *the fact, that almost half of the active population in the developed parts of the world are functionally illiterate and that these people communicate only through an audio-visual transmitter.*

The recent studies have confirmed that the *shift from the written to the visual communication* was not of a formal nature alone. The *changes in the communication media have caused the actual changes also in a man.* The experts have proved that the ways of the man's perception and the cognition are changing slowly but persistently. The special studies have been undertaken measuring the way viewers of the television reports perceive the information. For example, the attempts were made to determine which reports are easiest to remember and which ones have the largest impact on the viewers. The results were quite straightforward: the viewers perceived mainly those messages which were supported by the picture(s). The news read to them by the reporters, vanished from their consciousness much sooner than those accompanied by a video-tape recording.

This process has at least two consequences:

➢ With the *development of the rational type of a man, linked particularly with the visual means of communication* provided by the modern electronics, it may just happen that the *humanity will lose some of its perceptual capacities and with that some emotive forms and patterns of thought. The* scientific literature warns about the possibility of a man becoming immune to everything that does not come through the visual transmitter and to all that cannot be processed into a clear picture. Such prospects can lead to a "primitive forms of motioning", which means that a man could eventually become deprived of all the emotions and of all moods that cannot be visualized. It is necessary to take the fear regarding this problem very seriously. Namely all these: the human yearning, the Utopias and anti-Utopias, the dialectic thinking, the ambivalence of emotional conduct, the unconscious dreams, the "poeticizing" - where one symbol can stand for more than one thing, the creating of symbols between the subject and the object, the specific moods and the atmospheres cannot be captured or only to a limited extent, in a quick succession of pictures. It may just happen that the imagination and the creativity will be run down by the stereotyping of the pictures over-loaded with the action (CZERWENKA, 1985).