Open Research Online

The Open University's repository of research publications
and other research outputs

Digilab: a case study in encouraging mobile learning through library innovation

Book Section

For guidance on citations see FAQs.

oro.open.ac.uk

Chapter title: Digilab- a case study in encouraging mobile learning through library innovation

Keren Mills

Non Scantlebury

Rhodri Thomas

The Open University

Introduction: Creating an experimental space

The Open University's Digilab began life in 2005 as a collaborative partnership project between the Library, Learning and Teaching Solutions (LTS) the Institute of Educational Technology and the Knowledge Media Institute. Collectively these departments support the development of e-learning by contributing skills and expertise in pedagogy, research, information literacy and learning resource development. The project piloted the establishment of an innovative and technologically rich physical space to encourage collaborative working around e-learning. Funded by The Open University's Learning and Teaching Office the key aims of the project were to support the organisation's priorities in creating market responsive and innovative offerings and to strengthen leadership in modern pedagogy for supported distance learning.

In terms of the Digilab project our core users were defined as the staff responsible for developing, delivering and supporting Open University courses to students. Open University staff are able to drop in to the Digilab and engage in a range of "hands-on" exploratory activities using existing standard market technologies. Staff are encouraged to reflect on the potential use of these technologies to support and

Chapter in: Needham, Gill and Ally, Mohamed eds. *M-libraries: libraries on the move to provide virtual access.* Facet, pp. 229–242

229

develop learning and a key strand of activity has centred on evaluating the potential of mobile technologies to deliver and support accessible learning wherever users choose.

Marketing mobile technologies to users

During its first phase, the Digilab pioneered a new type of loan service for customers on campus. A range of mobile devices were already available for experimentation in the physical space and in order for staff to have more time to engage in "hands-on" experimentation with these technologies and sample course materials, a further set of devices were made available for loan via the library's counter services. Loans were made available to Open University staff and full time postgraduate research students on campus. Initially 2 Edirol digital recorders, 4 iPod photos, 10 iPod shuffles, 2 Game boy Advanced, 2 Nintendo Game cubes and 4 PlayStation Portables were made available for loan. The iPods were loaded with an introductory mp3 message requesting feedback from users on the potential use of the technology to support learning development in the broadest sense i.e. in the context of their own personal development needs as well as course development for students.

In parallel to the development of the physical space, a website was created which aimed to provide a range of additional web accessible resources, guides and information on related themes. Information regarding the mobile loan service was made available via the main library website [1] which in turn was linked to from the Digilab website [2]. Presentations were made to staff promoting the mobile loan service. As a result of the proactive initiative taken by project staff in offering this new

pilot service, the project manager suggested the setting up of a university-wide mobile learning interest group.

A community of interest

The Mobile Technologies Knowledge Sharing Group was set up in May 2006 to facilitate knowledge sharing and cross-departmental communication about mobile learning and mobile learner support. The 'M-Tech' group continues to meet quarterly for informal knowledge sharing discussions on a predetermined theme (e.g. Podcasting workshop; Social Networking; Mobile web services; PlayStation Portables in Education), and between meetings maintains contact through use of a wiki and a mailing list.

Participants include staff doing active research into mobile learning, those providing technical support and those engaged in horizon scanning. They are representative of academic and research, learner support and organisational business departments. Attendance at group meetings has helped to foster collaboration among the participants and has helped developers avoid duplication of effort. For example the group were able to identify a number of teams across the University experimenting with educational podcasting. This has resulted in a co-ordinated effort to standardise practice and identify opportunities for service users to access the relevant technology. The Digital Services Development Officer who managed the Digilab through its project phase and who now has operational management for the service continues to maintain a del.icio.us account to manage relevant information and useful links available to the group. [3]

Showcasing research

The Digilab proved a particularly useful asset in being able to discuss and draw colleagues in to considering approaches to Mobile Learning. As an example, at an early stage by 2005, the OU's Digital Education and Enhancement Project (DEEP) had already trained a number of teachers in how to use mobile technologies in teaching and learning [4]. In the dissemination phase of DEEP, it was decided to provide example resources for the wider OU community to see what had been created for the mobile devices [5], by demonstration and self-exploration with guidance notes. The physical space within the Digilab led to useful informal discussion of project work, supplementing formal presentations and seminars held elsewhere in the Library.

Leading on from this dissemination work, it was decided that large-screen live presentation and tailored emulator-based content could both play a useful part in bringing the concepts behind mobile learning and mobile content provision to a wider audience. Thus for group discussion, connecting to a physical Personal Digital Assistant (PDA) device and conducting real-time demonstrations could be enhanced by projecting a desktop PC running a PDA emulator; allowing for comparison, and to allow for subsequent investigation, if members of the audience did not have access to the devices themselves.

The Mobile Learner Support Project

The Digilab project has run parallel to the University's 'Mobile Learner Support Project' but the active networking facilitated by the M-Tech group means that the

Business Project Leader, tasked with scoping and developing this 'mLearn' project , continues to capitalise on the potential of the Digilab facility and services to support this work.

A key recommendation to senior managers which has emerged from the Mobile Learner Support Project highlights the potential for building on current services to support greater staff awareness and skills development relevant to the use of mobile technologies.

"In taking forward this work within the OU, an essential focus will be to familiarise our staff with the particular affordances gained through mobile learning, which need to be achieved by a blend of up skilling, hands-on staff development and awareness-raising of models of good practice. Staff development sessions provided as part of the Educational and Professional Development programme, and those provided by the Library Digilab will need to be revisited and extended"

Internal mobile learning position paper

Technical infrastructure and support

Examples of presentations and discussions held in the Digilab include:

- comparing the approaches and benefits of using eBook reader applications on mobile devices

- illustrating the differences of approach in creating Flash learning objects for mobile use

- evaluating scaled-down desktop and web applets to assess suitability for standalone usage

- in particular, being able to demonstrate the current possibilities available in mobile web browsing and the differing approaches taken by different browsers.

All these activities have proven useful in preparing future web-based services for learners.

Since the early work in presenting these aspects of mobile provision and support, the OU's specialist IT support team have also been able to customise, configure and distribute a PDA emulator for wider groups of staff to explore on their own desktop machines. This again is already set up and promoted within the Digilab.

From project into service

Surveying the market

The initial intention of the Digilab project was to facilitate a "self-service" approach to user engagement with the physical space and the technologies housed within it. In order to get a clearer picture of what types of staff development resources might be required and to ensure full take up of services, an online questionnaire was initiated to gather data to help scope and inform requirements. As a result of the data being

gathered on users, and in addition to requests made to the team for induction and training sessions within the Digilab, it became obvious that there was a broad interest in using the Digilab for staff development, beyond course specific e-learning initiatives. Academic, academic-related and business support staff were therefore invited to participate in the questionnaire.

- Table 1 reveals a need to do much more work with the academic staff to encourage greater experimentation and reflection on the potential use of mobile technologies in learning
- Table 2 reveals that though the majority of respondents have experience of using mobile phones to take pictures, a significant number have not followed through with uploading these to other services or transferring them between devices
- Table 3 reveals that there is a general lack of in depth knowledge regarding mobile learning and Web 2.0, though it fares better then knowledge regarding geocaching and ambient technologies
- Table 4 reveals some interesting results which appear to demonstrate that respondents who classed themselves as support staff engage more in fully utilising the functions available on their mobile devices than academic staff

Taking all these results in consideration, the project team decided to pilot a series of facilitated "hands-on" learning opportunities which could enable all staff to further their knowledge and increase their confidence in using mobile devices to support their work.
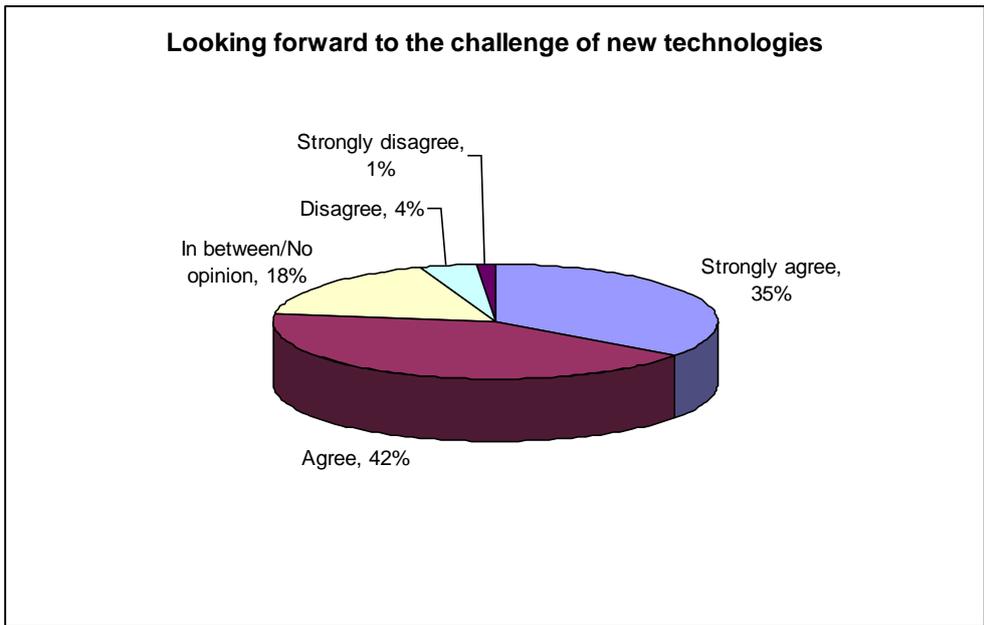
Figure 1. Showing total responses from 397 members of staff

Table 1: To what extent do you agree with the statement "I am looking forward to the challenge of keeping up with the new technologies over the next 5 years"?

Staff role	Academic			Academic related			Secretarial and clerical		
Total number of responses	94			207			96		
Time at OU	**Less than 5 years**	**5 to 10 years**	**More than 10 years**	**Less than 5 years**	**5 to 10 years**	**More than 10 years**	**Less than 5 years**	**5 to 10 years**	**More than 10 years**
Number of responses	39	24	31	81	55	71	49	28	19

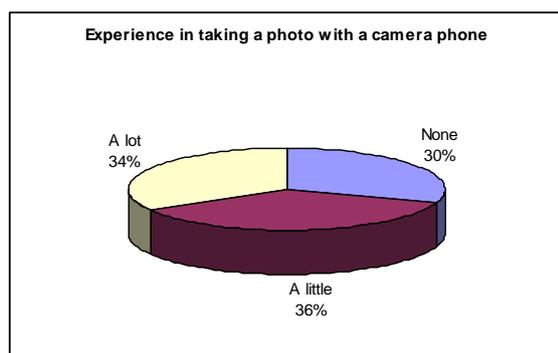|								
Strongly agree	26%	33%	19%	38%	36%	32%	51%	50%	11%
Agree	49%	42%	42%	48%	40%	35%	41%	36%	42%
In between/No opinion	15%	25%	23%	11%	24%	23%	6%	11%	37%
Disagree	8%	0%	16%	2%	0%	8%	2%	0%	0%
Strongly disagree	3%	0%	0%	0%	0%	1%	0%	4%	11%

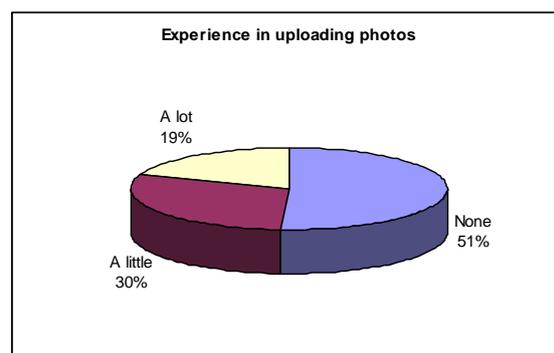**Figure 2.** Showing total responses from 398 members of staff

Figure 3. Showing total responses from 398 members of staff

Table 2: How much experience have you had of the following?

		Staff role			Age of respondents			
		Academic	Academic related	Secretarial & clerical	18-30	31-40	41-50	over 50
Total number		*95*	*207*	*96*	*44*	*129*	*116*	*109*

Chapter in: Needham, Gill and Ally, Mohamed eds. *M-libraries: libraries on the move to provide virtual access.* Facet, pp. 229–242

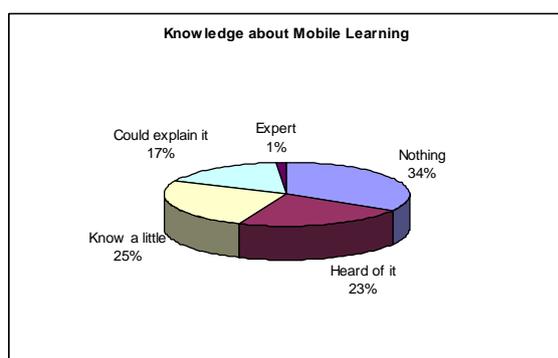| *of responses*								
Taking a photograph with your mobile phone	None	41%	29%	21%	7%	19%	34%	50%
	A little	39%	39%	26%	32%	33%	41%	35%
	A lot	20%	31%	52%	61%	48%	25%	14%
Loading photos into Flickr or a similar photo sharing site	None	58%	48%	45%	36%	39%	58%	59%
	A little	24%	31%	29%	25%	32%	28%	28%
	A lot	16%	18%	23%	39%	27%	10%	10%
Creating a podcast	None	75%	84%	83%	80%	81%	84%	80%
	A little	16%	12%	6%	16%	13%	9%	10%
	A lot	3%	1%	3%	5%	2%	2%	2%
Transferring files to or from a PDA or Smartphone	None	61%	57%	60%	48%	54%	64%	64%
	A little	15%	19%	17%	32%	18%	15%	14%
	A lot	20%	21%	16%	18%	25%	17%	17%
	A little	12%	16%	4%	18%	16%	10%	6%
	A lot	4%	1%	1%	5%	1%	2%	2%

Figure 4. Showing total responses from 398 members of staff

Table 3: How much do you know about the following?

		Age of respondents			
		18-30	**31-40**	**41-50**	**over 50**
Total number of responses		*44*	*129*	*116*	*109*
Web 2.0	Nothing	50%	32%	37%	39%
	Heard of it	16%	22%	28%	26%
	Know a little	9%	10%	16%	13%
	Could explain it	25%	31%	19%	20%
	Expert	0%	4%	0%	1%
Mobile Learning	Nothing	41%	27%	28%	42%
	Heard of it	23%	24%	26%	18%
	Know a little	20%	25%	30%	22%
	Could explain it	16%	21%	14%	16%
	Expert	0%	2%	1%	1%
Geocaching	Nothing	73%	71%	79%	81%
	Heard of it	11%	11%	7%	10%

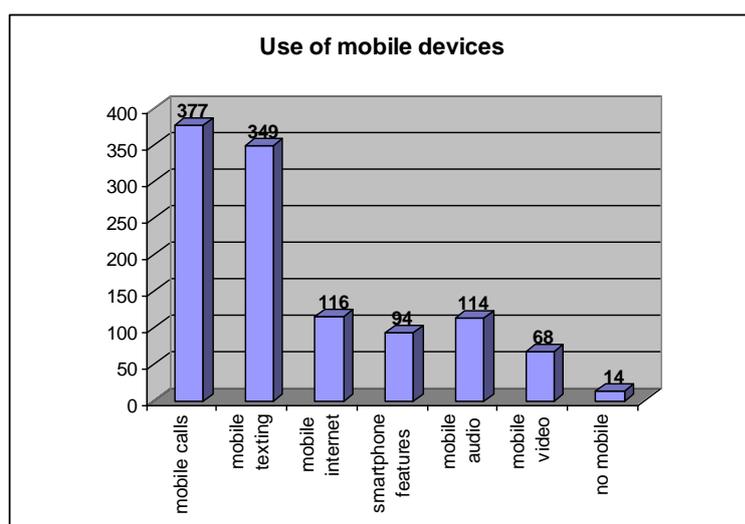|				
	Know a little	11%	7%	6%	6%
	Could explain it	5%	9%	8%	2%
	Expert	0%	1%	0%	1%
Ambient Technology	Nothing	68%	59%	62%	60%
	Heard of it	16%	27%	24%	26%
	Know a little	11%	10%	10%	9%
	Could explain it	5%	2%	3%	5%
	Expert	0%	1%	0%	1%

Figure 5. Showing total responses from 398 members of staff

Table 4: Today, mobile devices can provide one function (e.g. a phone) or combine

several functions (e.g. a phone that plays music). How do you use the mobile

device/s you have? (Respondents were asked to tick all applicable categories)

	Staff role			Age of respondents			
	Acade	Acade	Secreta	18-	31-	41-	over

	mic	mic related	rial and clerical	30	40	50	50
Total number of responses	*95*	*207*	*96*	*44*	*129*	*116*	*109*
Mobile phone calls	89%	98%	94%	95%	98%	92%	93%
Mobile text messaging	81%	89%	91%	98%	98%	85%	74%
Mobile internet	23%	31%	31%	52%	36%	24%	17%
Smartphone features such as email, games, applications	16%	25%	28%	43%	29%	20%	14%
Mobile audio (inc. Radio)	21%	30%	32%	43%	35%	24%	20%
Mobile video	9%	17%	24%	27%	22%	13%	11%
I don't own a mobile device	7%	2%	3%	0%	0%	6%	6%

Service Planning

Having piloted the project for a period of 18 months, the team gathered sufficient data to present a convincing case to senior managers to move the Digilab from project phase into a standard service. The service plan outlined the modelling of the Digilab service as a three tiered approach, showing different levels of service that could be offered depending on resource availability.

The service plan contained a full market appraisal for the various customer segments identified in the community as potential users of the facility. The various services available to these segments were mapped out in detail, highlighting take up during the pilot phase. Detailed costing of these packages was undertaken and a full operational plan was developed for the first year of service.

Although the original project specification was for provision of a drop-in space, with staff support on request, it became apparent through discussion with users that some felt they would benefit from facilitated hands-on staff development activities. The higher levels of service proposed in the service plan allowed for the provision of half-hour to one hour activities dubbed 'DigiBytes' and half a day or full day 'DigiQuests'.

In order to pilot the development of a 'Digibyte' a collaborative activity was developed with the Mobile Learner Support Project Leader for a Faculty of Education and Languages (FELS) staff development session.

Equipment provided by the Digilab facilitated staff to explore the concept of user-generated content in a location or practice based scenario. Staff were encouraged to engage in direct "hands-on" experience of a range of Smartphones and explore the audio and video recording capabilities of the devices. Staff were asked to take part in role-playing exercises and discussions around their own teaching practice and capture these using the devices available. They were then asked to upload photos and videos onto a web based mediaBoard [6] service via text or multimedia messaging.

Evaluating success

The project team have sought feedback from users on what they feel to be the real benefits to them as professional practitioners and researchers in using the facility and we include here some of the comments received that reveal the extent to which users value the current service on offer.

'If we want to start looking at newer technologies, then there are places in the university that have got hold of these, but it's quite difficult for most people in the university to get into those projects and find out about them and then also get a hands-on experience with those devices. So having something here, which could be booked out and can also be part of a hands-on activity, and giving a follow-up opportunity is one of the strengths of the Digilab and that's something that I hope that we can move forward with. Every time I do any presentations about Mobile Learning or Mobile Learner Support, I always mention that the Digilab is the space that's available if people want to try

things for themselves, using the physical devices or talking through the concepts and using some of the emulation tools to get an idea of how the software works'

Mobile Learner Support Project Leader, OU Virtual Learning Environment

Programme

'Participants on the FELS Learning and Teaching Development day found using the Digilab a very enjoyable experience. It opened to them windows that no doubt will inspire the development of their courses and their teaching. In particular it helped them reflect on how what they do now can be enhanced by the use of the Digilab tools explored. It is early days, but I have no doubt that as a result of the careful and thorough 'induction' facilitated by the Digilab team, colleagues in FELS will be keen to explore new ways of teaching and learning using these tools'

.

Senior Lecturer, Department of Languages

'The room is very valuable – primarily because it is a relaxed place to meet with people and talk about interesting things. I have only really used it as a meeting room – when I want to encourage free-flowing creative discussion – or just want folk to relax. I know that folk on the Schome Park Project have used it to gain access to Second Life (due to the difficulties of gaining access elsewhere on campus).

I am sure that the design of the room encourages a different sort of discussion compared with formal meeting rooms. The availability of interesting kit and relaxed meeting facilities (and free hot chocolate) certainly encourages folk to congregate there – helping with the sharing of good practice and ideas.'

Senior Lecturer, Department of Education

The Digilab rejuvenates thinking. Discussions there quickly identify superior approaches not appreciated in more formal settings…To prosper in the modern world you must understand the tools available- the Digilab is a gateway to those tools…..The modern student does not work in isolated silence, but works surrounded by tools, technologies and distractions. Digilab helps understand how they work.'

Interactive Media Advisor, LTS

'I think we tend to get a bit isolated, the Digilab inspires and reminds us that real users will be interacting with our work'

Media Developer, LTS

'Brilliant up to date technology, in a relaxing environment'

Media Assistant, LTS

'I like the drop-in nature of it so you can just pop in whenever you need to…It really helps for a Media Developer to know what kind of technology is out there that isn't just PC-based. I tested several of my websites on a Playstation3, Nintendo Wii and PDA, something I would never had the opportunity to do inside LTS despite them being fairly common technology for home users'

Media Developer, LTS

'The freedom to use the tools with contextual notes or commentaries is liberating'

Media Developer, LTS

Conclusions

The success of the Digilab is due to the Library's collaboration with stakeholders to ensure that our services remain relevant and valuable within the scope of available resources. Calculating the full cost of the provision of staff development activities is crucial in order to forecast and balance appropriate resourcing.

Mobile devices are mainstream mass market technologies which are available for libraries and others to capitalise on for e-learning and knowledge management purposes. However staff need to feel supported with regards to using these devices and feeling confident enough to support users of mobile library services. The Digilab has supported awareness raising, confidence building and professional development

for library staff. For example one member of library staff used the PDA emulator available in Digilab to test how well the library's short course "Beyond Google" worked on mobile devices. Through Digilab sessions Library staff have engaged with provision of mobile library services at a strategic level, resulting in work on both content delivery and skills development delivery through mobile devices.

Strategic support within the institution is critical for the success of pioneering new types of library services such as the Digilab. Take up of services during the project phase has been largely down to a strong project team and individual champions. If the facility is to become embedded to support change management for e-learning, Digilab services will need to be integrated within workforce development planning. Staff need time and support if they are to participate in skills development and reflective practice. As an organisation, The Open University needs to fully understand this commitment and invest accordingly if we are to reap the full benefits and become more effective.

References

1. The Open University Library. Digilab Services,

http://library.open.ac.uk/services/digilab/index.cfm..

2. Digilab website, http://www.open.ac.uk/digilab.

3. The Open University M-Tech del.icio.us account. Accessible from

http://del.icio.us/OU_MTech

4. Leach, J. et al (2005). *DEEP IMPACT: an investigation of the use of information and communication technologies for teacher education in the global south*, Department for International Development (DFID), Researching the Issues, Vol. 58. ISBN: 1 86192 712 6,

http://www.open.ac.uk/deep/Public/web/publications/pdfs/ReportFeb2006.pdf

5. Power, T and Thomas, R (2007). The classroom in your pocket?*, The Curriculum Journal*, **18**, (3), 373-388, ISSN 0958-5176 (print)/ ISSN 1469-3704 (online)

6. CTAD Tribal mediaBoard web-based mobile blogging service. http://portal.m-learning.org/mboard.php