# Student and staff digital access 2012

## Internet, mobile devices and social software

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1 June 2012

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## Executive summary

In early 2012, Deakin University staff and students responded to surveys designed to provide evidence of their digital access—to the internet, to mobile devices and to common Web 2.0 social applications. The results provide evidence about staff and student capability in terms of the tools they choose, and how frequently they use them. About 20 per cent of all staff (713 in total) and eight per cent of all students (3256 in total) responded to these surveys, and the sample was reasonably representative of the university population. Even so, inherent bias is expected in that those who have digital access are possibly more likely to participate in such surveys. Bearing in mind these caveats, the survey results to date suggest the following can be assumed with reasonable confidence at Deakin:

1. **Internet connectivity:** The vast majority (~96 per cent) of Deakin staff and students have internet access outside the University, and most have Wi-Fi. About nine out of 10 staff and students say they have high speed and reliable access at home, and many have access through a second connection (such as a mobile device). Three-quarters of staff and students rate their primary connection as affordable (although how affordability was gauged was not explored). About a quarter of staff and a third of students can download up to 100 gigabytes a month. Staff and student commented on the advantages and challenges of reliable and fast internet connection for online video, audio and interactive media, as well as synchronous communication tools.
2. **Mobile device ownership:**
   1. The vast majority of staff and students carry at least one mobile device: the most ubiquitous is a **mobile phone**—nearly everyone has one, about half are iPhones, and the majority are less than two years old.
   2. About nine out of 10 staff and students have a **laptop**—two-thirds of those are Windows-based, although a high proportion have or plan to have a Mac.
   3. Tablets are increasingly popular—iPads are by far the most common **tablet**; about two fifths of the staff have them, as do about a quarter of the students. There is high likelihood they will purchase iPads in the future, although Android tablets are on their radar as well.
   4. About one in 10 (staff and students) owns an **e-reader** (most are Kindles).
   5. Just about everyone has access to a built-in **webcam** in one of their devices, although the quality was not explored.
3. **Mobile device use:**
4. Laptops and tablets are often used for email and web browsing by both staff and students. About half the students use their laptops ‘lots’ to view or listen to video and audio, and less frequently with their tablets.
5. Students are more likely than staff to use laptops, tablets and phones to access Deakin Studies Online [DSO] (although many staff who responded were not involved in teaching)
6. About two-thirds of staff and students use their laptops ‘lots or sometimes’ for video calling (Skype); slightly fewer use their tablets for the same activity.
7. E-readers are mainly used to read e-books, unsurprisingly.
8. Staff commented frequently on tablets as being the most helpful devices for teaching administration, library-facilitated research preparation, exploration of learning resources, and paper-free interaction with students. Students also noted that tablets are lighter and have longer battery life, can replace heavy textbooks, and support a range of formal and informal educational activities.
9. Students commented on the need for more on-campus power points and better data download quotas. Significant numbers of staff noted the need for improved infrastructure to support Deakin’s new strategic agenda, as well as the time required to implement new technologies (for classroom and administrative purposes).
10. Student and staff both commented that the key need for new and more interactive technologies must not come at the expense of content quality or accessibility, and pedagogy must be the driver of innovation.
11. **Web 2.0 tools and applications** are used frequently—student use of Facebook was predictably high, slightly lower for Google+ and much lower still for LinkedIn. Staff make perhaps surprisingly high use of Facebook and Google+, and more use of LinkedIn than students. Most staff and students are not very frequent users of Twitter, Blogs or Flickr, and virtually no one uses Second Life.

These findings suggest that the vast majority of staff and students have the off-campus connectivity, as well as the devices and social tools, to be able to use more interactive and bandwidth-hungry learning resources.

## 1. Introduction

This report summarises the findings of the institutional surveys administered as part of research exploring Deakin University student and staff digital access to internet, mobile devices and social software. Combined with evidence gathered from focus groups and a review of current research related to mobile learning, these surveys are designed to enable a close, well-contextualised examination of how Deakin staff and students use mobile technologies in their work and study, with a view to supporting the University’s strategic intent to be at the digital frontier in connected cloud learning environments. The staff and student surveys consisted of approximately 50 items[[1]](#footnote-1) related to:

* demographic information
* internet access (including quotas) and perceptions of reliability and affordability
* mobile device ownership and use in regard to four categories:
  + Laptops (also known as a notebook, ultrabook or netbook)
  + Tablets (can browse web, watch movies, use apps eg. iPad, Galaxy Tab, Kindle Fire)
  + E-readers (limited internet access, primarily for reading text, no movies; eg Kindle, Kobo, Nook)
  + Phones
* use of social software (including Facebook, Google+, LinkedIn).

The number of staff and student responses, 713 (20%) and 3256 (8%) respectively, included a small number of partial completions (less than 5%), giving robust samples from which population characteristics could be confidently estimated. [[2]](#footnote-2) In this preliminary report, all results are reported in rounded percentages.

## 2. Demographic information

Staff and students were asked to provide information about gender and age, employment and teaching (staff only), and language and enrolment (students only), as shown in Table 1.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | Staff (%) | Students (%) |
| Gender | F | 60 | 66 |
| M | 40 | 34 |
| Age | 16-19 | 0 | 14 |
| 20-24 | 2 | 38 |
| 25-34 | 22 | 24 |
| 35-44 | 27 | 13 |
| 45-54 | 27 | 8 |
| 55-64 | 18 | 2 |
| 65+ | 4 | 1 |

Table 1: Staff and student gender and age

**Staff locations, employment circumstances and teaching status:** Table 2 shows that the highest proportion of staff were from the Faculty of Health (26%), then Science and Technology (15%), Arts and Education (14%) and Business and Law (12%). ‘Other’ areas included Campus Services, Deakin Research, Deakin Prime, Division of Student Administration, Financial Services Division, Human Resources Division and Marketing Division. Most staff identified their primary campus as Burwood (45%), then Waurn Ponds (26%), Waterfront (17%) or Warrnambool (5%). Just over half the staff were academic (53%) with the remainder mostly professional/general staff (46%). The vast majority (88%) of the academic staff undertook teaching, and a majority were employed as lecturers or senior lecturers.

|  |  |  |
| --- | --- | --- |
|  |  | % |
| Faculty/Division | Arts and Education | 14 |
| Business and Law | 12 |
| Health | 26 |
| Science and Technology | 15 |
| Other | 35 |
| Employment | Full-time | 74 |
| Part-time | 14 |
| Casual/sessional | 11 |
| Other | 2 |
| Campus | Burwood | 45 |
| Melbourne City | 2 |
| Waurn Ponds | 26 |
| Waterfront | 17 |
| Warrnambool | 5 |
| Other | 4 |
| Employment type | General | 46 |
| Academic | 53 |
| Teaching | Yes | 88 |
| No | 12 |
| Academic level | Professor/ Associate Professor | 23 |
| Senior Lecturer | 21 |
| Lecturer | 36 |
| Associate Lecturer | 4 |
| Sessional | 12 |
| Other | 4 |

Table 2: Staff employment details

**Students: first language, enrolment and study circumstances:** Table 3 shows that the first language of most student respondents was English, with significant numbers identifying Mandarin, Cantonese, Indian languages (such as Hindi), Indonesian, French, Arabic, Sinhala, Spanish, African and Vietnamese. Students were enrolled in the Faculties of Arts and Education (31%), Business and Law (27%), Health (24%) and Science and Technology (17%). Two-thirds (69%) of students were undergraduate, with the remainder mostly postgraduate (27%); about three-quarters were full-time (72%); about a third were commencing their studies (30%) and slightly more had completed up to about half of their course (38%). Almost half the students were at Burwood (48%) with fewer representing other campuses (Waurn Ponds, 17%; Waterfront, 6%; Warrnambool, 3%). About a quarter of students were enrolled as off campus (26%). About half the students (54%) lived in an Australian capital city, with most of the remainder indicating that they lived in or near a major regional town.

|  |  |  |
| --- | --- | --- |
|  |  | % |
| First language | English | 83 |
| Other | 17 |
| Faculty | Arts and Education | 31 |
| Business and Law | 27 |
| Health | 24 |
| Science and Technology | 17 |
| Institute of Koorie Education | 0.2 |
| Level | Postgraduate | 27 |
| Undergraduate | 69 |
| Not studying a degree/Other | 4 |
| Enrolment status | Full-time | 72 |
| Part-time | 28 |
|  |  | % |
| Course progress | Commencing | 30 |
| Up to about half completed | 38 |
| About three-quarters completed | 15 |
| Most, completing soon | 16 |
| Campus | Burwood | 48 |
| Waurn Ponds | 17 |
| Waterfront | 6 |
| Warrnambool | 3 |
| Off campus | 26 |
| Study location | A remote area | 5 |
| In or near a major regional Australian town | 37 |
| In an Australian capital city | 54 |
| A capital city outside of Australia | 4 |

Table 3: Student language, enrolment and study location details

## 3. Internet access outside University

Staff and students were asked whether they had internet access outside of the University and if so, the type and quality of the connection, and its reliability and affordability. Table 4 shows that almost all of the staff and students surveyed had internet access outside University, most had Wi-Fi and over half had 3G/4G connections.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | Staff (%) | Students (%) |
| Internet access | Yes | 95 | 97 |
| No | 5 | 3 |
| Internet type | Wi-Fi | 87 | 88 |
| 3G/4G | 63 | 61 |
| Other (ADSL, ADSL2, ADSL2+, LAN, cable) | 10 | 5 |

Table 4: Staff and student internet access outside of the University

Staff and students were asked about their primary and secondary methods of connecting to the internet (based on the assumption that many users may have Wi-Fi at home, but also use mobile devices to connect to the internet at home and elsewhere). They were asked to rate their connections in terms of speed, reliability, cost and download allowance. Table 5 shows that a high proportion of staff and student respondents enjoyed a fast and reliable primary internet connection (and about 20-25% of staff and students rated this connection as expensive). About a third of staff (29%) had a download allowance of between 5 and 50 gigabytes, and a similar proportion of students (32%) had an allowance of more than 100 gigabytes. The dominant download allowance for staff and students using their secondary internet connection was less than five gigabytes (and it is assumed that this would be using a mobile account).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Internet connection characteristics | | Primary connection | | Secondary connection | |
| Staff (%) | Students (%) | Staff (%) | Students (%) |
| Speed | Higher | **90** | **89** | 65 | 56 |
| Lower | 10 | 11 | 35 | **44** |
| Reliability | Reliable | **91** | **89** | 80 | 67 |
| Unreliable | 9 | 11 | 20 | 33 |
| Cost | Affordable | **78** | **76** | 73 | 77 |
| Expensive | 22 | 24 | 27 | 23 |
| Download | Less than 5GB | 17 | 13 | 58 | 63 |
| 5-50GB | 29 | 22 | 20 | 13 |
| 51-100GB | 16 | 15 | 2 | 3 |
| More than 100GB | 24 | 32 | 5 | 6 |
| Don’t know | 14 | 17 | 15 | 15 |

Table 5: Staff and student internet connection characteristics

## 4. Device ownership and use

Staff and students were asked whether they owned any of four types of mobile devices: laptop, tablet, e-reader or mobile phone, and, if so, the device’s specifications and how they generally used it. They were also asked whether they intended to replace or acquire such a device in 2012 and, if so, what they intended to choose. Table 6 indicates that laptop and mobile phone ownership among staff is very high (around 90% and 99% respectively); about half of staff and a third of students have a tablet; about one in 12 staff and students own an e-reader; and hardly anyone has no devices.

|  |  |  |
| --- | --- | --- |
| Device | Staff (%) | Students (%) |
| Laptop | 91 | 92 |
| Tablet | 50 | 29 |
| e-reader | 13 | 11 |
| Phone | 98 | 100 |
| No devices | 1 | 0 |

Table 6: Staff and student device ownership

In regards to platforms and brands, Table 7 shows that about two-thirds have Windows laptops (staff 68%; students 66%) and one-third have Mac laptops. The vast majority of tablets are iPads (staff 87%; students 80%) in comparison to Android (staff 9%; students 16%). Kindle was the dominant brand in e-readers (about two-thirds). iPhones were owned by about half staff and students; a quarter of phones were Android; about a quarter did not know.

|  |  |  |  |
| --- | --- | --- | --- |
| Device | Type | Staff (%) | Students (%) |
| Laptop | Apple | 27 | 26 |
| Windows | 68 | 66 |
| Other/ Don't know | 6 | 7 |
| Tablet | iOS | 87 | 80 |
| Android | 9 | 16 |
| Other/ Don't know | 4 | 4 |
| e-reader | Kindle | 67 | 60 |
| Kobo/Nook | 11 | 11 |
| Other/ Don't know | 22 | 29 |
| Phone | iOS | 47 | 52 |
| Android | 24 | 25 |
| Other/ Don't know | 28 | 23 |

Table 7: Staff and student device ownership by type

Table 8 shows that half the laptops are less than two years old, as are most tablets (over 90%, understandably) and more than two-thirds of phones (staff 65%; students 77%).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Device age | Laptop | | Tablet | | Phone | |
| Staff (%) | Students (%) | Staff (%) | Students (%) | Staff (%) | Students (%) |
| Less than 2 years | 55 | 57 | 91 | 94 | 65 | 77 |
| 2-5 years | 41 | 39 | 9 | 6 | 29 | 20 |
| More than 5 years | 4 | 5 |  |  | 6 | 3 |

Table 8: Comparative age of staff and student devices

The newness of current devices may account for the lack of intention to upgrade: Table 9 shows that the proportions of staff and students who intended to acquire or upgrade a mobile device in 2012 were relatively low (less than 26%) across all devices, with intended brands and platforms (Apple versus Windows/Android) approximately even in laptops; iPads strongly preferred over Android tablets; iPhones clearly preferred over Androids but to a lesser extent than tablets. At least 10% of each group indicated they did not know what they would choose.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Staff (%) | | | Students (%) | | |
| Device |  | Mac/iOS | Win/And | Yes | Mac/iOS | Win/And |
| Laptop | 16 | 44 | 43 | 18 | 41 | 47 |
| Tablet | 15 | 72 | 18 | 10 | 73 | 16 |
| Phone | 19 | 58 | 29 | 25 | 60 | 24 |

Table 9: Staff and student intention to acquire a new device in 2012

Table 10 shows staff and student access to webcams in relation to their various mobile devices: laptop owners mostly had access to webcams; as did about two-thirds of phone owners. The quality of the webcams was not explored.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Laptop | | Tablet | | e-reader | | Phone | |
| Staff  (%) | Students (%) | Staff  (%) | Students (%) | Staff  (%) | Students (%) | Staff  (%) | Students (%) |
| Yes, External | 5 | 3 | 1 | 1 | 0 | 1 | 0 | 1 |
| Yes, In-built | 81 | 90 | 71 | 78 | 11 | 10 | 59 | 67 |
| No webcam | 14 | 8 | 28 | 21 | 89 | 88 | 41 | 32 |

Table 10: Device web cam enablement for staff and students

Table 11 shows that staff and students made frequent use of laptops and tablets to access email and browse the web. Students used their devices more frequently to access Deakin Studies Online (DSO), and more use of their phones to access other resources and tools.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Frequency of use | Laptop | | Tablet | | Phone | |
| Staff (%) | Students (%) | Staff (%) | Students (%) | Staff (%) | Students (%) |
| Email | Lots | 80 | 79 | 70 | 59 | 41 | 48 |
| Sometimes | 17 | 19 | 27 | 34 | 26 | 30 |
| Never | 2 | 2 | 3 | 7 | 33 | 22 |
| Web browsing | Lots | 82 | 88 | 77 | 77 | 34 | 49 |
| Sometimes | 17 | 10 | 22 | 21 | 38 | 34 |
| Never | 2 | 1 | 1 | 2 | 28 | 17 |
| DSO or similar | Lots | 40 | 84 | 19 | 42 | 3 | 17 |
| Sometimes | 28 | 14 | 38 | 41 | 18 | 40 |
| Never | 33 | 2 | 43 | 17 | 80 | 44 |
| Audio listening | Lots |  | 56 |  | 33 |  | 26 |
| Sometimes |  | 35 |  | 43 |  | 30 |
| Never |  | 9 |  | 24 |  | 43 |
| Video viewing | Lots |  | 51 |  | 36 |  | 15 |
| Sometimes |  | 37 |  | 43 |  | 35 |
| Never |  | 12 |  | 22 |  | 50 |
| Audio creation | Lots | 10 |  | 5 |  | 3 |  |
| Sometimes | 27 |  | 19 |  | 16 |  |
| Never | 63 |  | 77 |  | 81 |  |
| Video creation | Lots | 8 |  | 5 |  | 4 |  |
| Sometimes | 24 |  | 20 |  | 23 |  |
| Never | 68 |  | 75 |  | 73 |  |
| Reading e-books | Lots | 8 | 15 | 33 | 44 | 3 | 7 |
| Sometimes | 27 | 34 | 44 | 38 | 16 | 21 |
| Never | 65 | 51 | 23 | 18 | 81 | 73 |
| Video calling (Skype) | Lots | 20 | 20 | 14 | 18 | 2 | 7 |
| Sometimes | 47 | 43 | 33 | 33 | 24 | 22 |
| Never | 33 | 38 | 53 | 49 | 73 | 72 |

Table 11: Staff and student use of digital resources / tools by device

Table 12 shows that there were some differences in usage rates for Web 2.0 tools among staff and students. Facebook was used lots by two-thirds of students (66%), and about one-third by staff; Google+ was used lots by about a third of staff and students. LinkedIn was used lots or sometimes by about half the staff, and rarely, if ever, by students. About two-thirds of staff and students never use Twitter or blogs (or ‘don’t know’ about them); photo sharing sites such as Flickr were not heavily used by high proportions of staff or students. Virtually no-one used Second Life.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency of use | Staff (%) | Students (%) |
| Facebook | Lots | 31 | 66 |
| Sometimes | 40 | 24 |
| Never / Don't know | 28 | 10 |
| Google+ | Lots | 39 | 35 |
| Sometimes | 27 | 23 |
| Never / Don't know | 34 | 43 |
| LinkedIn | Lots | 8 | 4 |
| Sometimes | 40 | 20 |
| Never / Don't know | 51 | 76 |
| Twitter | Lots | 9 | 10 |
| Sometimes | 21 | 22 |
| Never / Don't know | 70 | 68 |
| Blogs | Lots | 6 | 8 |
| Sometimes | 26 | 23 |
| Never / Don't know | 68 | 69 |
| Flickr | Lots | 2 | 1 |
| Sometimes | 19 | 12 |
| Never / Don't know | 79 | 87 |
| Online games | Lots | 6 | 8 |
| Sometimes | 23 | 28 |
| Never / Don't know | 70 | 64 |
| Second Life | Lots | 0 | 1 |
| Sometimes | 3 | 3 |
| Never / Don't know | 97 | 97 |

Table 12: Staff and student use of Web 2.0 tools

## 5. Perceptions of use

Staff and students were asked to provide open text responses to four questions addressing their access to mobile devices and online tools and environments. In addition to a ‘further comments’ question, respondents were asked to identify which devices and tools would enrich their teaching (staff) or learning (students), and what impact the provision of more engaging and interactive online learning environments would have on their device and internet use.

Summaries of the responses, grouped by cohort and question, are given below. Note that the student comment summary does not include the final ‘further comments’ question as the response themes for this question were covered in the other open text commentaries.

## Staff comments

*What device (if any) would help you provide a richer learning experience at Deakin?*

Overall, 110 respondents indicated an iPad would assist them to provide a richer learning experience at Deakin while a further 65 participants suggested a tablet (and of the latter some also mentioned examples such as iPad). Five responses indicated an Android tablet would be helpful.

Few provided reasons for the value placed on using a tablet although some suggestions were offered: to refer to DSO for class management purposes and email; because a laptop is cumbersome to transport; to eliminate the need to use paper based resources and use with students of whom many use iPads; for lecture notes; library catalogue and data base search; to support work at home; provide non paper-based information to students from Division of Student Life and obtain student feedback; video presentations ; to explore worth of media resources facilitated in the Cloud; to enable students to obtain information readily; to ‘enable use of the collaborative function in several different applications and allow staff to work more seamlessly across campuses’; and read PDF documents.

Thirty-three respondents indicated a laptop would be helpful and of those 10 specified they would prefer to have a laptop provided by Deakin, while another individual stated a computer in his / her office would be helpful.

A range of other devices were suggested by respondents including touch screen; e board; slide scanner; smart phone and those combining features from different devices for example ‘a cross between an IPAD + smart phone + laptop; something small and light enough to carry around with me most of the time - like i*(sic)* do my phone but about the size of the iPad or a 10-inch lap top*(sic)*’; and ‘I have three mobile devices (Laptop, iPad, iPhone). Each have their strengths and weaknesses. What if one device did everything?’ and ‘a variety of iOS and android based devices to experiment with the different platforms and software that can be used to deliver and create learning objects’.

A significant number of responses commented on the need for improved infrastructure to support the development and use of technological innovations. Issues included the need for adequate support of mobile devices from the learning management system (LMS); appropriate number of campus computers for students; support for mobile devices and a wide range of devices; improved wireless and reliable internet access; Deakin provided devices and tools for staff; equity in terms of staff provided with laptops and iPads to work at home; ability to customise the LMS; enhanced integration of technologies for example Apple products; improved IT support; ‘stronger interface with located learning’; more frequent updating of computers; reliable operation of equipment such as video conferencing; training on use of devices; support with learning design; internet provision by Deakin offsite; videos linked on DSO accessible on iPads and iLectures available on iPhones.

A small number of respondents to this question raised teaching and learning issues underpinning the use of technology such as the importance of high quality content; face to face contact with students, and the manner in which the devices are used, ‘I guess the richer learning experiences come about through the opportunities provided once I connect through my devices’; ‘it is not the devices that make learning rich, but what happens on them. And what happens needs to be useable across the range of devices’.

Interesting comments:

* ‘I am not sure extra devices would make for a better learning experience, maybe a different learning experience’.
* ‘My thoughts are not device-dependent. They involve clarity of learning aims, alignment of those aims with flexible means of assessment supported by engaging learning activities that are evidently linked to the aims and assessment. Devices etc can follow once that hard, pedagogic work is completed’.

*What online tool (eg. Skype) or service (eg. Khan Academy, library catalogue) if any, would help you provide a richer learning experience at Deakin? Please explain how such a tool would assist you.*

Skype (and noted a small number of respondents mentioned ‘Skype or something similar’) was suggested by 91 respondents as a ‘synchronous communication’ tool that would assist staff members to provide a richer learning experience at Deakin for the following reasons: to augment study for off-campus students; invite guest speakers; provide students with the opportunity to facilitate team meetings and provide more direct means of communication with students; maintain contact with research students and conduct co-operative international research; communicate with rural and distant professional contacts and use for student placements; contact colleagues on other Deakin campuses and externally; facilitate meetings and small groups; to potentially substitute for desk and mobile phone; enhance interaction with the workplace for those based interstate; used when working in industry projects and conferences and to communicate with partners in industry; can be managed by an individual in any environment; and its use is economical. Video conferencing as a tool in general was noted as useful by a number of participants.

A number of respondents were enthusiastic about the library as an online tool affirming the following offerings: the current library service and search function; library catalogue ‘and associated links’; and the search engine being effective to use with iPad and iPhone. Suggestions from some respondents included improved library access for books; iPads reserved ‘for students to use in pop quizzes’; more extensive library catalogue available to post-graduate students; ‘My Library’ / Android app to access books from the catalogue; and increased numbers of e-books and e-books ‘pushed to Kindle or e-books’.

The need for improved technology infrastructure to support enhanced used of technology was noted by a significant number of respondents including the requirement for improved internet access as well as improved availability of Deakin VPN at home and other locations; iLecture available more widely in lecture theatres; decreasing of the effect of firewalls on tools such as Skype; student accessibility to new devices; video conferencing working consistently; integration of tools; and video servers for teaching and learning.

A range of other useful tools suggested by respondents included Khan Academy; Papers 2; Mendley; Facetime on iPhone; Jabber; Adobe Edge; Shadow; Hype; Second Life and ‘CISCO Tandberg could be used more flexibly than currently’; Yammer; Vimeo; Dropbox; Google talk video conferencing; Cloud storage and access to resources; social media tools to enhance collaboration; collaborative bookmarking, and annotation and editing platforms such as Diigo and Googledocs.

Interesting comments:

* ‘Most of all, I think it is important to be able to provide students with a stream-lined and seamless learning experience/environment so all of our interactive and multi-media solutions should be well integrated with our base learning platform (currently D2L)’.
* ‘Is the Khan academy peer reviewed? Why not simply let students use Wikipedia instead of lectures then? A capable LMS would help. Not a closed-architecture proprietary outdated database-oriented system like D2L.’
* ‘I think it is hard to standardise this service. Why not fund the students themselves to access the tools or services they find useful’?
* ‘There's a real need to find more interactive ways to get students to engage with text-based formats - journal articles are still the standard dissemination format in academia and writing is a key skill, so we need to ensure that students know how to work with text/texts effectively, especially in an environment where so much information is now presented in audio/audio-visual format (which are usually smaller and more “bite sized" than scholarly journal articles or even a newspaper op ed)’.

*Deakin would like to make its online learning environment more engaging by using, for example, more movie and audio files, and more interaction. How would this have an impact (if any) on your devices or internet access?*

A significant number of responses indicated this would have no or little impact and did not explain further. Others indicated they didn’t know or were unsure. Some responses indicated the need for staff to be provided with new devices such as iPads, enhanced support and training and more extensive internet access.

A substantial number of responses were affirmative in regard to the above media and its impact, some examples which included the ability making learning more ‘interactive’, ‘active’ and engaging especially for those with a visual learning preference; ‘increased variety of learning opportunities’; and ‘explore ways that take media such as movies and audio files further, for students rather than a passive engagement with materials’. A staff member who teaches dance offered an example ‘there would be many situations in which you could access to movie files, interactivity and direct internet access would support the current body to body communication in which I engage’.

Some mentioned other issues such as extra time required to implement use of the new technologies; copyright and privacy; difficulties with slow connections; the need for enhanced ability to utilise the medium; use of the technologies will not replace development of higher order thinking skills in students; and while interesting, visual media may not be a most helpful means of teaching a particular subject area. Access for students was seen as an important issue by some respondents who noted the need for students to have both the appropriate devices and software to accommodate this type of learning, as well as internet capacity and the ability to afford the cost incurred.

A significant number of staff noted the cost involved for increased demand on internet access and devices and the possible requirement to upgrade their home internet services to accommodate these innovations. There were numerous comments relating to the importance of sound infrastructure, a reliable internet service including to rural areas and staff training to support these developments.

Interesting comments:

* ‘Won't know till I try it. At the moment, the current capacity meets our requirements. Importantly nothing replaces excellent teaching and video or audio movie files are just a vehicle to convey information that needs to be delivered appropriately in a sound pedagogical/androgogical context which at the moment I don't need’.
* ‘With video and audio content I would have second thoughts about viewing or listening considering the download. Interactives however I would no hesitation. The real trick is going to be creating engaging media cross-browser and cross-device’.

*Would you like to make any further comments?*

Sixty-five responses related to the need for appropriate infrastructure and support for staff to effectively use internet, mobile devices and social software, ‘this system won’t work if the basics are not right and proper infrastructure support is not provided’. Respondents commented on such aspects as technology in teaching spaces frequently not operating or absent altogether; the expressed need for Deakin to purchase staff devices where ‘access to up-to-date equipment and connectivity are becoming workplace imperatives’, ‘sharing tablets is like sharing underpants. Yes it’s possible, but it’s awkward’; the difficulty of accessing VPN when working at home; necessity of ‘interoperability’; systems need frequent updating; and rural internet services were stated to be undependable. It was also mentioned frequency of logins were intrusive. Several responses praised current IT support.

In other responses the need for ‘more training, support, guidance, technology provision and services’ of staff was also noted as well as time made available for them to learn to use the new technologies including utilising software. Another issue noted for staff included work / life balance affected by encroaching demands of technology use and the need for use of technology to be pedagogically driven, with one response indicating a warning ‘it cannot be seen as an alternative to the class experience and should serve the class experience, not the class experience serving the IT platform’. Another respondent suggested ‘the focus should be on sustainable practices rather than device. They are tools to support what we do, they should not define what we do’. Other responses affirmed further technological innovation, ‘more technology makes life better’; ‘I strongly support a greater focus on e learning’; ‘go Deakin, allow!’; ‘exciting times!’ and ‘The Cloud!’.

Accessibility, equity and diversity issues were raised in considering designing learning resources in this medium as well as the need to accommodate a range of learning styles. Some respondents were concerned that students may either not be able to afford the expense of adequate internet to download data required or may not have access, and also suggested students may require training to learn how to use the new media.

Interesting comments:

* ‘Please make sure that when we review the way that we teach at Deakin and engage students we don't get lost in the technology for technology's sake and forget the fact that many students actually do want to engage face to face with teaching staff and do in fact attend lectures and tutorials and have very positive comments about this. Just because we are short of lecture space is not an excuse for going into "the clouds"‘.
* ‘Fantastic to hear the organisation has a forward and leveraging focus as many people use the kinds of tools personally that would make life at work more efficient and effective. Acknowledging that a change cycle would mean a dip in productivity for 1-3 years, we will emerge viable and adaptable. Ultimately for staff and, students and other clients a richer and more satisfying experience’.

## Student comments

*What device (if any) would help you have a richer learning experience at Deakin?*

An iPad or other tablet device was by far the most popular device, with 745 respondents indicating it would enable them a richer learning experience at Deakin or was already providing one. The advantages they associated with these devices included their lightness, smallness and long battery life, which enabled students to study on public transport or wherever else they were; their ability to support the reading of text—coupled with their ability to store large, heavy textbooks and other materials—which meant they enabled students to read wherever they wanted; their ability to support note-taking and highlighting of articles; their ability to support web browsing, including Desire2Learn, iLecture, videos, the Library catalogue and email; their ability to support a range of applications that were helpful for their study; and their ability to be used in work placements to access relevant data and record video for assessment or use in coursework. However, a large number suggested that the devices would be more useful if learning materials were in compatible formats (ie not requiring Flash or Java), and good mobile applications for the main Deakin tools were provided. Some indicated they thought these devices were expensive, and that Deakin should subsidise them.

A laptop was also popular, with 385 respondents indicating that this device would give them a richer learning experience, or was already providing one. The main advantages they noted of laptops were their portability, so students could use them on campus; their full functionality and their ease of use. Many respondents indicated they wished they had a newer model that was lighter and faster, with good wireless internet access and more memory. A large number suggested that a laptop with a tablet was a good combination for studying, and suggested that the Library lend both devices. The main disadvantages they identified with laptops were their weight and the lack of sufficient power points in the Library, tutorial rooms and laboratories to accommodate them.

Another popular device, with 156 respondents, was a smart phone. Advantages they saw with these were the ability to access email, DSO discussions, the web and podcasts of lectures; take part in polls in lectures; and even read e-books, despite their small screen size. Again, students emphasised the importance of dedicated mobile applications for DSO and other Deakin tools when using these devices.

One hundred respondents suggested an e-reader of some kind would help them, allowing them to read e-books and articles when not online, store all the books they needed, highlight text and take notes. Some also noted that an e-reader would give them access to cheaper textbooks and save paper. A small number suggested they would access DSO with an e-reader.

*What online tool (eg Skype) or service (eg Khan Academy, library catalogue) if any, would help you have a richer learning experience at Deakin? Please also explain how such a tool or service would assist you.*

Use of Skype was the online tool named most frequently (by 297 respondents) as having the potential to enrich their learning experience at Deakin. Many suggested Skype could be well used to provide live-streamed lectures and tutorials, and enable them to feel present and participate at a distance if necessary. As well, many suggested this application could provide an additional sense of personal contact for group work, study groups and one-to-one contacts with teachers and Deakin services such as the Library, IT and careers counsellors.

A large number of respondents (225) indicated they would like easier access to Library resources, either via a mobile application, or through improved searching functions and structure within the catalogue. Many suggested more access to online materials (particularly textbooks) in the form of e-books, and materials from external databases, repositories and subscription services in text, video and other formats. Another popular suggestion was for better quality video recordings of lectures, with linked visuals and/or video recording of the lecture as well as audio-only download options.

The creation of an iOS and Android 'Deakin app' that incorporated a calendar of Deakin dates, campus maps, timetables, exam timetables, contact information, webmail and single login access to DSO, Student Connect and the Library was another well-supported idea.

Many suggested a better Desire2Learn mobile application that had features such as an aggregated news, updates and content feed from all units; easier access to discussions, content (especially video), calendars and tracking of assignments; a facility for uploading assignments; and an ability to track content that had been visited or downloaded.

A small number of respondents said they already used Khan Academy materials (particularly video) as secondary resources to enhance their learning. These and others called for more use of open access materials such as through iTunes U.

There were also a number of students who complained about teachers' inadequate or inexpert use of the existing online tools, and/or about the frustrations of being obliged to use applications that did not actually enhance their learning. There were also many students who indicated they were very satisfied with the online learning tools and facilities already provided at Deakin—and others who said they preferred teaching and learning techniques that did not rely heavily on online technologies.

*Deakin would like to make its online learning environment more engaging by using, for example, more movie and audio files, and more interaction. How would this have an impact (if any) on your devices or internet access?*

Most of the responses to the question of whether greater use of movie, audio and interactive materials in teaching and learning would impact on students' use of devices and internet access (636) were that this would be very welcome, would have no effect on their devices and access, or that any inconvenience would be outweighed by the benefits of having these materials. In particular, 100 respondents indicated they would welcome improvements to iLecture recordings, such as video and live streaming options.

Of the 448 respondents who indicated that more video, audio and interactive materials *would* present difficulties, primary concerns were limited and/or restrictive internet capacity for downloading movie and audio files: data allocation/download limits were cited by 319 respondents, followed by speed (91), access/accessibility (78), connectivity (62), cost/affordability (59), and space and network restrictions (23). As a result of these limitations, 28 commented on the importance of being able to choose high or low quality/size media files. Many respondents (48) also commented that the data allowance that Deakin provided students was minimal, wireless access was unreliable, or that they would have to download on campus at Deakin (eg using the Library computers) to access files.

The second largest limiting factor, identified by 332 respondents, was the capacity of individual devices to handle certain file types or content. Of these, 99 commented that they would welcome greater ability to download material (including lecture recordings) to their portable devices, and that this would enhance their learning. However, concerns they identified included file size, quality and compatibility, especially with Apple (iPhone and iPad) and Blackberry devices: many noted that Flash files could not be accessed on their devices. A small group indicated that HTML5 should be used instead of Java/Flash to overcome compatibility issues. Another group complained that additional use of multimedia would place an added burden on students to upgrade their hardware and software.

Many respondents expressed enthusiasm for increased use of video, audio and interactive materials. While 41 indicated they would simply find these media more engaging, a similar number suggested that they would learn better from more interactive materials or approaches. Another 34 said they found it easier to learn from either video or audio, or that they liked the flexibility of having multiple formats. In particular, many off-campus students indicated they would benefit from multiple formats or opportunities for more interaction with materials, teachers or peers. However, many students emphasised that the *quality* of both content and delivery, and its ability to actually enhance their *learning*, was more important than having poor quality material presented in different formats. A significant number (36) indicated they thought more video, audio or interactive materials would have a negative impact on their learning, citing reasons including technical frustrations, distraction from real learning and a preference for face-to-face contact or written materials.

## 6. Conclusion

The findings of the staff and student surveys detailed in this report provide a reasonable snapshot of the extent and nature of digital access among Deakin University staff and students. Further analysis is needed to strengthen this view. Nevertheless, this is a dynamic landscape, and changes in devices and their costs and capabilities can mean rapid.

1. The full text of both surveys is available on request from Ms Kim Atkinson (kim.atkinson@deakin.edu.au) [↑](#footnote-ref-1)
2. Staff and student respondents are consistent with their Deakin population (drawing on Deakin 2011 statistics) except that the following groups are slightly **over**-represented in these results: academic staff (by 8%); female students (6%); full-time students (6%); returning students (8%), and the following groups are slightly **under**-represented: casual/sessional staff (8%); students from the Faculty of Business and Law (8%); and commencing students (9%). [↑](#footnote-ref-2)