A 2010 Snapshot of Educational Technology use by Teaching Staff of Charles Sturt University

Assoc Prof Philip Uys, Assoc Prof Barney Dalgarno, Lauren Carlson, Dr Andrea Crampton, Jacquie Tinkler

Presented by Philip Uys
Director, Strategic Learning and Teaching Innovation
Division of Learning and Teaching Services
Charles Sturt University, Australia
<puys@csu.edu.au>
Introduction

- adoption of educational technologies crucial for student centred models

- the skilful use of educational technologies is becoming a professional requirement

- survey done to more effectively provide educational technologies to staff

- anonymous survey of 246 teaching staff at CSU about their attitudes towards and practices with technology for teaching
Background

- variations in support styles is needed to address the range of academic users from the well discussed early adopters to the reluctant adopters

- the perceptions and attitudes of staff need to be considered so that more inclusive and effective training and technology selection strategies can be implemented.
Background

- critical to consider the needs and preferences of the students who are supposedly the beneficiaries of these technologically enhanced experiences

- university students today are generally used to using a fairly limited range of technologies such as surfing the internet, email, mobile telephony, sms and office applications.

-Seeing the myriad technologies as an opportunity to improve teaching and learning for students, rather than as something students already know and expect to use, may be a more solid foundation on which to build the educational technology skills of teaching staff in universities.
The Study

The CSU context

- In 2010 the University employed 673 full-time equivalent academic staff, in four faculties (Arts, Science, Business and Education), as well as adjunct staff in a number of partner institutions within Australia and offshore.
Dashboard of CSU Educational Technologies

http://tinyurl.com/ltsystemsdashboard
Prepared by the Division of Learning and Teaching Services, Charles Sturt University
22 July 2011

CSU academics experiment and use external systems e.g. Twitter; wiki; blogs; podcasts; edublogs; youtube; Flickr; SlideShare; Teacher Tube; 21st Life; cloud; Facebook.

CSU Replay (EGO350) being piloted at CSU’s PodVOCO casting system (all of 2011). (SARF funding)

1. Paramedic simulations (Jan to Dec 2011)
2. Teacher Education 21st Century learning spaces (Jan to Dec 2011)
3. Vet Science Clinical System (VISION): Vet Science Diagnostic Laboratory System
4. Dentistry X-Ray Simulation
5. Picture Archiving and Communication System (PACS): (Jan to Jul 2011)

Available to all schools and divisions in 2011.
Current collection: LUT; SIS; HIS; LTS; Production and others; IIR collection to be launched soon http://lts.csu.edu.au

Online Meeting (Wimba Classroom) available to all staff and students for synchronous meetings
http://www.wimba.com

Exemplar online marking functionality; used by all cohorts

In use at all schools for checking plagiarism and to all students for educational use
www.tamlin.com

eReserve NTECH system to be implemented around July 2011. RapidPrint for supplementary materials could be considered later in 2011

Benchmark against 6 universities using same of the AGORDE benchmarks completed

www.wimmer.com site “about ICT Integration”: Video-conference Forums, extending showcase of learning design studies

Questionnaire design

- designed in close cooperation with staff from the University of Waikato, New Zealand in mid-2010.

- The questionnaire was based on the following surveys: University of Waikato, Staff and Student eLearning surveys 2008; ECAR Research study 6, 2007; Student Information and communications Technology project, University of Edinburgh; Association of College and Research Libraries, Informing Innovation survey 2009; VERSO, 2008; UNSW@ADFA, Students’ ICT Experience, 2008; Victoria University, Student Questionnaire, 2009; MacQuarie University, Student Experience of Technologies in Universities, 2010; University of Wollongong Survey, 2008; UTAS, Staff and Student experience with eLearning technology surveys 2010.
Questionnaire design

-The questionnaire was thereafter customised to address key concerns about educational technology at CSU and had the following sections: Demographics – Personal; Demographics – Institutional; Technology Access; Use and awareness; Features currently used; Features they would like to use to support their learning; Views and Experience; University Services.

- A similar questionnaire was designed and administered among CSU students.
Administration and Sample Demographics

- Ethics approval for this survey was obtained from the CSU Learning & Teaching Services Ethics Committee

- online in Survey Monkey between 13 July 2010 and 1 August 2010. It was widely promoted in CSU and its partner institutions

- The survey was conducted anonymously and took approximately 30 and 45 minutes to complete

- Generally items have been chosen for reporting where it was considered that their usage was sufficiently common across the sector to warrant wider interest
Administration and Sample Demographics

- 246 teaching staff members, including 105 males, 137 females, and 4 not stating their gender

- 63 respondents from the Faculty of Arts, 40 from Business, 70 from Education and 49 from Science, with 24 indicating that they were not in a faculty

- 21 respondents indicated that they were aged 55-60, 43 were 51-54, 32 were 45-50, 47 were 40-44, 34 were 35-39, 24 were 30-34, 21 were 26-29, 10 were 22-25, 11 were 18-21 and 3 indicated that they were less than 18
Findings
General attitude towards technology

Figure 1: Attitudes towards new technologies
## General usage of technology (8/60)

### Table 1: Technology Use and Awareness

<table>
<thead>
<tr>
<th>Technology or Tool</th>
<th>Never heard of it</th>
<th>I've heard the name but not really sure what it is</th>
<th>I know what it is but have never used it regularly</th>
<th>I use this occasionally</th>
<th>I use this regularly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Networking (eg. Facebook, LinkedIn, MySpace, Orkut, Ning)</td>
<td>0.4%</td>
<td>5%</td>
<td>36%</td>
<td>32%</td>
<td>26%</td>
</tr>
<tr>
<td>Email (Hotmail, gmail, Outlook)</td>
<td>0.8%</td>
<td>0.4%</td>
<td>0.8%</td>
<td>1.3%</td>
<td>97%</td>
</tr>
<tr>
<td>Wikis</td>
<td>3%</td>
<td>11%</td>
<td>39%</td>
<td>28%</td>
<td>19%</td>
</tr>
<tr>
<td>Electronic Simulations and Virtual Worlds (Second Life)</td>
<td>22%</td>
<td>20%</td>
<td>50%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Microblogging Services (Twitter, Tumblr, Yammer)</td>
<td>7%</td>
<td>19%</td>
<td>52%</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td>Podcasts</td>
<td>3%</td>
<td>9%</td>
<td>34%</td>
<td>31%</td>
<td>23%</td>
</tr>
<tr>
<td>Spreadsheets (eg. MS Excel)</td>
<td>1%</td>
<td>0.4%</td>
<td>4%</td>
<td>18%</td>
<td>76%</td>
</tr>
<tr>
<td>Presentation Software (PowerPoint, Keynote)</td>
<td>1%</td>
<td>0.8%</td>
<td>4%</td>
<td>12%</td>
<td>82%</td>
</tr>
</tbody>
</table>
Attitude towards educational technology

- Improving the quality of my teaching: 46%
- Making it easier for my students to get access: 35%
- Personal management: 4%
- Communication with students and co-teachers: 4%
- No benefits: 9%
- No co-teachers: 2%
- Other: 4%
## USE of the LMS (Sakai)

### Table 2: Reasons for using the Learning Management System

<table>
<thead>
<tr>
<th>Reason</th>
<th>Respondents (of 232 using the LMS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is Faculty/School policy</td>
<td>151</td>
</tr>
<tr>
<td>To allow access to supplementary resources</td>
<td>150</td>
</tr>
<tr>
<td>To increase the opportunities for communication</td>
<td>147</td>
</tr>
<tr>
<td>To allow access to lecture notes, slides and handouts</td>
<td>143</td>
</tr>
<tr>
<td>To increase the flexibility of teaching &amp; learning</td>
<td>125</td>
</tr>
<tr>
<td>To provide blended subjects (where some core content, communication, readings or assessment is included online)</td>
<td>97</td>
</tr>
<tr>
<td>To allow access to audio or video resources</td>
<td>97</td>
</tr>
<tr>
<td>To selectively release online activities and content</td>
<td>69</td>
</tr>
<tr>
<td>To provide fully online subjects</td>
<td>63</td>
</tr>
<tr>
<td>For formative assessment (feedback only)</td>
<td>62</td>
</tr>
<tr>
<td>For summative assessment (count towards grades)</td>
<td>55</td>
</tr>
<tr>
<td>My students demand it</td>
<td>40</td>
</tr>
<tr>
<td>To use or link to simulations and virtual worlds online</td>
<td>28</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>11</td>
</tr>
</tbody>
</table>
## Usage of selected technologies in teaching

<table>
<thead>
<tr>
<th>Technology</th>
<th>Frequency of Current Use</th>
<th>Frequency of Desired Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weekly or more (1)</td>
<td>Less than weekly (2)</td>
</tr>
<tr>
<td>Announcements</td>
<td>59.5%</td>
<td>33.9%</td>
</tr>
<tr>
<td>Lecture recordings</td>
<td>16.3%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Discussion forums</td>
<td>63.9%</td>
<td>21.8%</td>
</tr>
<tr>
<td>Chat room</td>
<td>23.3%</td>
<td>25.6%</td>
</tr>
<tr>
<td>Wikis</td>
<td>15.0%</td>
<td>32.6%</td>
</tr>
<tr>
<td>Blogs</td>
<td>14.2%</td>
<td>25.7%</td>
</tr>
<tr>
<td>ePortfolios</td>
<td>10.7%</td>
<td>16.9%</td>
</tr>
<tr>
<td>Assignments – students getting marked work back online</td>
<td>12.4%</td>
<td>37.6%</td>
</tr>
<tr>
<td>Plagiarism checking by students before submitting their assignments</td>
<td>5.8%</td>
<td>17.0%</td>
</tr>
<tr>
<td>Animation</td>
<td>8.9%</td>
<td>22.2%</td>
</tr>
<tr>
<td>Quizzes for learning / self review / assessment</td>
<td>13.2%</td>
<td>33.3%</td>
</tr>
<tr>
<td>Subject information on my students’ mobile devices (handheld)</td>
<td>4.9%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Digital object management system (Equella)</td>
<td>4.0%</td>
<td>2.2%</td>
</tr>
</tbody>
</table>
Comparison by Age, Gender and Faculty

- a series of Multivariate Analysis of Variance (MANOVA) procedures were carried out using age, gender and faculty as independent variables

- analysis focusing on general purpose technologies indicated that there were no significant differences between male and female staff usage of any of the technologies

- younger teaching staff members used social networking tools significantly more frequently
Comparison by Age, Gender and Faculty

- no significant faculty related differences for usage of general purpose technologies

- teaching technologies also found no significant main effect of gender, indicating that there is no difference in usage by male and female teaching staff

- there were also no significant age related differences in frequency of use of these technologies.
Relationship between general technology usage and usage of technology for teaching

- personal usage and awareness of technologies is a strong driver of use of technology for teaching (as expected)

- in the case of usage of ePortfolios and plagiarism checking software, it may be that the range of initiatives within the university to promote usage have led to early adoption of these tools by people who were not naturally high users of technology.
Discussion and conclusion

- high usage figures for many teaching technologies, including technologies which most would assume would still be used only by early adopters. Mainstream tools like the announcements tool (usage of close to 95%) and discussion forums (usage of close to 85%) have become almost ubiquitous at CSU, while 28% of respondents are using ePortfolios, 40% are using Blogs and 48% are using Wikis all of which would be seen by many as leading edge Web 2.0 technologies. These findings can be contrasted with those of Shannon and Doube (2004), who in 2003 found that 55% of their University of Adelaide respondents used web teaching tools ‘less than a moderate amount’.
Discussion and conclusion

- The even higher desired usage figures for these technologies suggest that their usage will continue to increase in the coming years to the point where the majority of university teachers will be making use of them.
Discussion and conclusion

- two technologies with very low current use and relatively low desired use, namely tools for the provision of subject information on mobile devices and the object management tools. The low current usage is reflective of the fact that these tools were not yet widely available at the time that the survey was completed. The low desired usage has implications for the university in terms of the professional development required. mLearn project has now started and new collections in the DOMS.
Discussion and conclusion

- teaching staff have genuine educational reasons for choosing to use technologies in their teaching. The fact that many teaching staff are making decisions to use online tools within their subjects that are not mandatory, such as Wikis, Blogs and ePortfolios, suggests that these staff are making decisions based on perceived pedagogical benefits.
Discussion and conclusion

- still a large proportion of staff who have little experience with emerging technologies like virtual worlds, podcasts, social networking tools and microblogging tools. This suggests that as Spicer (2003) points out, support for teaching staff needs to cater for staff at a wide range of levels of technology awareness and experience.
Discussion and conclusion

- a sizable minority of teaching staff use social networking tools, wikis and podcasts regularly. This runs counter to the notion suggested by Prensky (2001) of a Digital Immigrant teaching population teaching a ‘Digital Native’ population of students.
Discussion and conclusion

- Even though some teaching staff would fit into the age bracket characterised as Generation Y, and so might on this basis be assumed to be ‘Digital Natives’, the lack of age effects for usage of most technologies suggests that it is not in fact the younger staff who make up the group of frequent users of emerging technologies.
Discussion and conclusion

- In conjunction with earlier studies such as Kennedy et al. (2007) which suggests that many students are not regular users of Web 2.0 technologies and Kennedy et al. (2008) which suggests that age is not a good predictor of student and staff use of technologies in general, it becomes very clear that assumptions about staff or students’ technology preferences, usage or proficiency based on age would be highly misguided.
Discussion and conclusion

- Perhaps the main assumption that could be made in relation to teaching staff and educational technology use is that as their technology proficiency increases so will their preference for a choice of tools that fit their diverse pedagogical needs.
Thank you

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