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The Attitudes of Students and Academic Staff Towards Electronic Course Support—are we Convergent?

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The present study investigates the views and attitudes of both the students and staff with regard to the usefulness of electronic course support throughout all four years of the MPharm programme at Aston University.

Students were sampled between January and March 2001 using a self-completion questionnaire administered during the start of a practical or tutorial class. All internal academic staff were interviewed using a semi-structured interview format. Response rates were 100 and 89.5%, respectively.

The study found that students rapidly embraced the use of electronic course support within the undergraduate programme, although they view its role as augmenting traditional course delivery. This view was mirrored by the academic staff, although only around a half currently place their material on the University's virtual learning environment (VLE), WebCT. The failure of staff to completely embrace the VLE is grounded in a lack of confidence and ability in its use. A majority of the academic staff indicated that they wish to be trained further in the use of information technology. Academic institutions need to understand and meet these needs in parallel with the introduction of any electronic course support.

Keywords: Electronic course support; ICT; Learning and teaching; Virtual learning environments

INTRODUCTION

Computers are rapidly being integrated into all areas of education. Recently, their value has been demonstrated as a means of enhancing access to both undergraduate and postgraduate programmes through provision of electronic course support for distance learning programmes (Wake and Lisgarten, 2003). The same technology is being used in the undergraduate arena to provide support for undergraduate programmes. The rapid introduction of information technology (IT) support to undergraduate programmes appears to revolve around servicing increasing student numbers rather than through a need to provide distance learning, as the majority of UK pharmacy undergraduates attend full-time at the academic institution. As electronic course support seems unlikely to decrease, it is important to ascertain the undergraduate students' perceptions of the role of electronic course support and to investigate whether this correlates with the views of the academic and teaching staff. This will help to ensure that electronic course support is being used in a way which will enhance the students' learning experience and not simply as a means of shifting teaching away from more traditional delivery methods.

The Dearing Report (1997), outlined recommendations on the future uptake of information systems within higher education. Recommendation 41 was that by the 1999/2000 academic year, all higher education institutions in the UK should have in place overarching communications and information strategies. The report recognised that "the UK already enjoys a good IT infrastructure" and suggested that "the main challenge for the future is to harness that infrastructure, together with high quality materials and good management, to meet the needs of students and others". It went on to say that "the use of new technologies for learning and teaching is still at a developmental stage but we expect that students will soon need their own portable computers as a means of access to information and for learning via a network. We are also aware that students will need

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access to high quality networked desktop computers that permit the use of the latest multi-media teaching materials and other applications."

Recommendation 46 was that by 2001, all higher education institutions should have open access to a networked desktop computer system and to expect that by 2005/2006, all students will be required to have access to their own portable computer.

The Dearing Report has highlighted that the use of IT support will be crucial for higher education to develop and move forward over the next thirty years. Running in parallel to the development and implementation of IT is the Government's drive to increase the number of school leavers who experience higher education coupled with the introduction of foundation degrees and widening participation strategies.

The pace of the development of virtual learning environments (VLEs) has been facilitated by an increased student cohort, coupled with more readily accessible and reliable computer systems. VLEs have enabled academic and teaching staff within higher education to easily paste material on an intra- or internet for students to access either locally or remotely and to provide access to lecture slides, course support material and supplementary reading in an easily accessible form for retrieval as and when is convenient for the student. In addition, VLEs can even be used in both formative and summative student assessment. Many schools of pharmacy now employ some form of VLE to aid student learning (Wake and Lisgarten, 2003).

Although the move towards the increased use of IT support has many advantages, there are also a number of potential disadvantages including a risk that without frequent updating, material presented online may become out of date. Additionally, students will have variable access to the VLE from off-campus computers and any off-campus access they do have may be slow and expensive. For a more in-depth review of the advantages and disadvantages of VLEs, see Perrie (2003).

The aim of the present study was to examine the attitudes of both the undergraduate students and the academic and teaching staff with regard to the use of VLEs in teaching support. The examination of the staff group will involve both their personal opinions and their understanding of the students' opinion of the use of electronic course support.

The study is based in the school of pharmacy at Aston University in Birmingham (UK). All four years of the undergraduate programme are supported by the school's VLE (WebCT). However, there is no formal policy with respect to the extent of use of the VLE, which varies from simply mounting PowerPoint® lecture slides through to streaming demonstration videos for revision following a pharmacy practice practical class (Langley *et al.*, 2002).

MATERIALS AND METHODS

Student Survey

All students ($n = 448$) on the MPharm undergraduate programme were surveyed in January to March 2001 using a self-completion questionnaire containing 37 questions of mixed format including open, closed and scaled responses. The areas covered included general demographics, social background, qualifications, exposure to scientific and professional backgrounds and specific questions surrounding the use of electronic course support. The questionnaire was administered during the beginning of a practical or tutorial class.

Academic and Teaching Staff Survey

A structured interview schedule was developed which, after internal piloting, was administered to all internal members of academic and teaching staff on the MPharm undergraduate programme ($n = 38$). Data on areas of teaching and course administration responsibilities were obtained from central management records. The questionnaire contained 33 questions in which a mixture of formats: Likert scales, multiple choice, scoring, ranking and a small test on IT terms and conditions. The questionnaire was administered in a face-to-face interview which enabled any additional responses or comments to be noted.

Once all the questionnaires had been administered, the data were coded and entered into SPSS (v11) for analysis (SPSS).

RESULTS

Student Survey

Surveys were administered to students during the start of a practical or tutorial class. Although voluntary, no student refused to complete a questionnaire resulting in a response rate of 100% (only students who were away from the University at the time of the survey, due to illness for example, were not included in the study). The majority of the students entered the pharmacy course at Aston either directly after "A" levels (67.9%) or after a gap year (19.6%). A further 3.1% entered the first year of the course after completing a "year zero" at a local further education college, 1.6% entered after either HNC or graduate study and the remaining 7.8% from other routes.

The students were asked to rate the usefulness of four electronic packages: e-mail to staff, internet, computer assisted learning (CAL) (CAL, 2004) and WebCT (the department's VLE) (WebCT). The results appearing in Table I are: 74.5% of

TABLE I The percentage responses of the whole MPharm student population indicating the usefulness of four electronic support packages

Response	E-mail to staff (%)	Internet (%)	CAL packages (%)	WebCT (%)
Very useful	40.0	68.7	35.4	58.4
Useful	34.5	23.9	45.1	32.2
Occasionally useful	23.4	6.4	16.9	8.3
Not useful at all	2.1	0.9	2.7	1.1

TABLE II The proportion of students in each of the four years of the MPharm course that either prefer to receive handout in lectures or print handouts from the web

Response	Year 1 ($n = 137$) (%)	Year 2 ($n = 110$) (%)	Year 3 ($n = 100$) (%)	Year 4 ($n = 90$) (%)	Overall ($n = 437$) (%)
In a lecture/ tutorial	94.9	89.1	86.0	76.7	87.6
Print them off yourself	5.1	10.9	14.0	23.3	12.4

students stated that they found e-mail to staff either very useful or useful; 92.6% found the internet either very useful or useful, whereas 80.5% of students found CAL packages either very useful or useful. On the subject of the VLE, WebCT, 90.6% of students stated that they found the use of WebCT either very useful or useful.

The students were asked to score the usefulness of a series of IT based resources from very useful (score = 1), through useful (score = 2) and occasionally useful (score = 3) to not useful at all (score = 4). The results across all four years of study were averaged and arranged in a rank preference order (average score ± standard error of the mean).

The issue ranked most useful by the students was posting of past examination papers (average 1.08 ± 0.01), followed by (in order of preference), provision of specimen answers (1.12 ± 0.02), pharmacy notes (1.15 ± 0.02), copies of overheads (1.25 ± 0.03), tests, (1.26 ± 0.03) programme information (1.66 ± 0.03), physiological/medical simulations (1.67 ± 0.03), e-mail interaction (1.91 ± 0.04) and finally discussion boards (2.01 ± 0.04). The students rated all nine of the electronic services highly and similar patterns of acceptance were obtained from each of the four years of the MPharm programme.

Students were also asked about the availability of "handouts" containing supplementary factual information in either lectures or online. Students were asked specifically if they would prefer to receive "handout" material either during the lecture or online. Unsurprisingly 87.6% of the students stated that they would prefer to receive handouts in a lecture or tutorial rather than to print them personally. Interestingly the proportion of students from each year that prefer to receive handouts in the lecture or tutorial displays a small, graded fall as students progress through the programme (Table II).

Students were asked whether they would like lecture handouts to be made available prior to the associated lecture. All four years of study indicated strong support for lecture material to be available online before the event (overall 94.1% in favour).

The students were asked two further questions about the future use of IT. The students were asked if they thought that more use should be made of electronic support. A majority in all years were in favour of increased use in the future (overall 72.0% in favour). However, when asked if they thought that electronic support could replace formal lectures, only 1.6% agreed that they felt that electronic support could replace all formal lectures and 22.8% indicated that it could be used to partially replace formal lectures. A majority, 75.6%, stated that electronic support should only be used in addition to formal lectures. The distribution of these views was similar within each of the four years of the programme.

Academic and Teaching Staff Survey

The staff response rate was 89.5% ($n = 34$), with the remaining four members of staff citing illness ($n = 1$), unavailability ($n = 2$) and unwillingness to cooperate ($n = 1$) as reasons for non-participation. Of the 34 respondents, 24 (70.6%) were male and 10 (29.4%) were female. Twenty nine (85.3%) were employed at the university on a full-time basis with only 5 (14.7%) working part-time. All of the staff who worked only part-time at the university were employed within the pharmacy practice section and were either teaching fellows or teacher practitioners who split their time between the university and either community or hospital employment.

When asked to apportion their work time between teaching, research, administration or scholarship, overall, an average of 38% of time was spent teaching, 30% on research, 21% on administrative functions and 11% on scholarly activities.

The staff were asked how they would prefer to interact with the students (either by e-mail, face-to-face or no preference). Forty one percent stated that they would prefer a face-to-face interaction with the remainder, 59% stating no preference. No member of staff stated that they would prefer an e-mail interaction. Only 47% of the staff stated that they provided their lecture material to the students on the VLE (WebCT).

Staff were asked about their agreement with a number of suggested advantages and disadvantages

TABLE III The proportion of staff who agreed with the suggested advantages of CAL and WebCT

Advantages	CAL (%)	WebCT (%)
More time free for other activities	44.1	32.4
Less preparation necessary	26.5	5.9
Greater response from students	52.9	58.8
Less stressful	17.6	2.9

of both computer assisted learning and the University's virtual learning environment (WebCT). Table III summarises responses to the suggested advantages and a "greater response from students" and "more time free for other activities" were the most strongly supported. Table IV summarises responses to the suggested disadvantages of CAL and WebCT. "Technical difficulties" and "more preparation time necessary" were the most strongly supported.

Staff were also asked if they felt that electronic course support could ever replace formal lectures. Only one (2.9%) indicated that electronic course support could replace formal lectures. Seven (20.6%) thought that it could partially replace formal lectures with a majority of 26 (76.5%) stating that they thought that it should only be used in addition to formal lectures. When asked if they released their lecture notes online, just under half (47%) stated that they did.

Finally, staff were asked if they would like to participate in an IT training course and 73.5% stated that they would.

DISCUSSION

It is clear from the survey conducted at Aston University, that MPharm students were all happy to use electronic course support and anecdotal comments from students during the data collection indicated that they quickly embrace it as part of the course. Over 90% of students find the VLE (WebCT) either very useful or useful and the other electronic support packages were all also rated highly. It is clear, however, that the students perceived electronic course support as exactly that, and not as a replacement for formal lectures or tutorials.

TABLE IV The proportion of staff who agreed with the suggested disadvantages of CAL and WebCT

Disadvantages	CAL (%)	WebCT (%)
Technical difficulties	47.1	47.1
More preparation necessary	50.0	47.1
Difficulty in access to computer rooms	8.8	2.9
Problems with understanding by the students	32.4	38.3
More stressful	17.6	0.0

The interviews with the academic and teaching staff has enabled a comparison between the wishes of the students and the perceptions of the benefits that the staff believe that electronic support can bring to the pharmacy degree programme. Staff on average spend more time on teaching than any other single activity. It is therefore unsurprising that no member of staff stated that they would prefer to interact with the student solely by e-mail, with almost half stating that they would prefer a face-to-face interaction.

Although a majority of staff considered that CAL and the VLE allow both a better understanding of the material by the students and enables liberation of staff time for other activities, only just less than half of the staff sampled released their lecture material online. The students in the study expressed a wish to receive handouts in a lecture or a tutorial rather then printing them off from online sources. Anecdotal evidence from discussions with students identified that this is a cost rather than a convenience issue.

The staff indicated that needing more preparation time and technical difficulties were the major disadvantages to both CAL and WebCT, although around three quarters of the staff would like to participate in an IT training course. This last point is supported by research carried out by Herson *et al*. (2003) in a longitudinal study of staff attitudes towards learning technologies between 1998 and 2002 in the school of pharmacy at the University of Brighton. They reported in 2002 that by the end of the study period, although the staff were more aware of the pedagogical benefits of electronic learning support, the school still needed to address some time, support and training resources issues.

Of particular interest was the finding that the same proportion of staff (47.1%) felt that both CAL and WebCT were technically difficult. WebCT along with other VLEs have been developed to aid teaching staff in using the internet or an intranet without the need for programming skills. This finding may stem from a lack of understanding by a subset of the staff cohort of the differences between older CAL packages and more modern user-friendly VLEs. However, it is important to note that the technical difficulties posed by CAL and WebCT are different. Difficulties with the development of new CAL programmes surround a need for a level of programming skills not possessed by the majority of academic and teaching staff. Although no programming skills are necessary to operate a VLE, owing to the versatility of the platform, technical difficulties can arise in the operation of the platform owing to its inherent complexity.

Finally, the students' and staff attitude towards the future use of electronic course support was examined and appeared to be consistent. There was the possibility that the staff would view CAL and especially WebCT as a means of shifting the delivery

of material from a time consuming lecture based format to an electronic medium that requires less staff involvement. Although the transfer of material from a didactic format to either a CAL or WebCT format was perceived to be time consuming (this was stated as a disadvantage of CAL by 50% of respondents and of WebCT by 47.1%), once a preliminary investment of time had been made, for most courses extensive revisions were not necessary. Consequently, there may be a temptation to invest effort in order to ultimately shift delivery format from didactic to VLE for subsequent years to liberate substantial amounts of time. The student survey indicates that this was not what was envisaged as a function of electronic course support. Results from the staff survey show that the staff share this view, with the majority only wishing to use WebCT in addition to formal teaching methods.

CONCLUSIONS

In conclusion, it has been shown that MPharm undergraduate students at Aston University embrace the use of IT to support the course. It has been shown that the students are happy to use a range of electronic course support packages, although as an adjunct to the traditional teaching methods in terms of support or a revision aid.

In support of this application for IT, the academic and teaching staff on the pharmacy programme appear to share the view that the implementation of electronic support packages should be in addition to formal teaching sessions. Around half the staff regularly release their lecture material on WebCT. It would appear from the number of staff that desire further IT training (73.5%) and the proportion of staff that perceived technical difficulty to be a major disadvantage of VLEs (47.1%), that even more staff would use VLE course support given greater competence.

IT is a valuable addition to the teacher's tool kit and, if used correctly, it is likely to enhance the student's learning experience. It has been shown that academic and teaching staff expectations for electronic course support concur. In order for this to become a reality across the entire programme, schools of pharmacy need to ensure that staff who deliver the material have the sufficient knowledge and skills to operate electronic course support optimally.

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