

# The impact of e-resources at Bournemouth University 2004/06

## Keywords

Action Research, Impact Survey, Electronic Resources, Case Study

## Abstract

Action research is being used to survey the impact of electronic resources on the learning and teaching community of Bournemouth University. Results from one Academic School were compared the following year with the results from two other Schools. These results show how the use of, and enthusiasm for, electronic resources is widespread amongst students and staff.

## Introduction

Bournemouth University (BU) Library participated in Phase II of the LIRG/SCONUL Impact Implementation Initiative in 2004/5. The chosen theme was an assessment of the impact of e-resources on student and staff behaviours, using the Institute of Health and Community Studies (IHCS) as the focus of an action research study.

During 2006 the study was repeated at BU, focusing on two other academic Schools; the School of Conservation Sciences (CS) and the School of Design, Engineering and Computing (DEC). Triangulation allowed the views of academics and students to be considered alongside data from management information systems.

Responses received revealed a widespread endorsement among staff and students of both the principles of e-resource provision and its usefulness, particularly off-campus. Synoptic responses revealed the enthusiasm for e-resources, evidenced by requests for increases in the resources, particularly back runs of journals.

The findings of the IHCS survey in 2005 have been supported by the results from CS and DEC in 2006. The evidence is that the marked upward trend in usage continues and from these results a number of conclusions can be drawn which have implications for e-resource procurement, library skills teaching, and collaboration with academic staff.

The study does not attempt to evaluate the impact of the availability of e-resources on academic achievement, employability, or other educational outcomes. Such correlations would be difficult if not impossible to determine, as, for example, the literature on the impact of libraries on academic performance illustrates (de Jager, 2002)

### **Methodology**

Action research was chosen as the methodology for the project (Hutchins et al, 2005) because it is participatory, encouraging the researchers to seek and consider the views of others and allows for the triangulation of multiple data sources. This enables reflection on practice and encourages those doing the research to make adjustments as a result.

Action research.... seeks to bring together action and reflection, theory and practice, in participation with others, in pursuit of practical solutions to issues of pressing concern to people. (Reason and Bradbury, 2001, p1)

Additionally, action research “generates useful knowledge about how organisations manage change” (Coghlan, 2003), making it a valuable methodology for a topic at the centre of the shift in higher education as learning, and the resources to support learning, move inexorably towards the electronic environment. In spite of considerable international recognition, action research is difficult to define precisely, as noted by Altrichter et al (2002) They quote a useful definition by Kemmis and McTaggart (1988, p.5).

Action research is a form of collective, self-reflective inquiry that participants in social situations undertake to improve: (1) the rationality and justice of their own

social or educational practices; (2) the participants' understanding of these practices and the situations in which they carry out these practices. Groups of participants can be....any group with a shared concern and the motivation and will to address their shared concern. The approach is action research only when it is collaborative and achieved through the critically examined action of individual group members.

The collaborative and participative nature of action research and its grounding with practical concerns is discussed by Reason and Bradbury (2001). The co-operative approach was important in this study as it involved the academic community of staff and students at Bournemouth University; Heron and Reason (2001, p.179) observe that a benefit of action research is that it is "conducted *with* people rather than *on* people".

Action research is not without its critics, for example Coghlan (2003) observes that the dominance of positivism in organisational research has created a demand for alternative approaches. He refers to criticism by Lowendahl and Revang (1998) that action research is "too narrow and removed from the concerns of practising managers". Kock (2003) identifies three threats in action research; he describes these as "uncontrollability", "contingency" and "subjectivity" and suggests ways to deal with them. Two of these "antidotes" were incorporated into the BU e-Resources Impact Study. Kock (2003) claims that "uncontrollability" exists because in spite of efforts to control the research environment, full control is not achievable. The antidote he suggests to deal with this he describes as "multiple iterations". The BU e-Resources Impact Study has now completed its second cycle and the third is currently in the planning stage, each cycle has used "reflective iterations" (Beard and de Vekey, 2004) to evaluate qualitative and quantitative evidence. This approach is a useful mechanism to involve a range of staff in the research process, as each iteration allows new staff to encounter the methodology and become more aware of action research and reflection in the BU approach to service evaluation. There is therefore no need for a large research team as the surveys can be integrated into routine work processes.

The second threat described by Kock (2003) that he calls “contingency”, relates to the potentially large quantity of data that can be accumulated using action research. Kock identifies that it can be difficult to determine the effect of one variable against another, and he suggests a “unit of analysis” approach to avoid the results being too context-specific. This involves defining data collection and analysis methods for groups of data at the beginning of the research process. The BU e-Resources Impact Study defined all data collection methods at the beginning of the research and included separate sections in the questionnaires to enable cross-tabulation of results.

The third threat that Kock (2003) identifies is “subjectivity”. This is the paradox faced by a researcher to remain in a detached and neutral position whilst conducting research that aims to promote positive change. Kock’s antidote to this threat is an adaptation of Glaser and Strauss’s (1967) grounded theory, which was not used in this study.

### **Phase One of the study**

At a two-day Impact Implementation Seminar hosted by SCONUL/LIRG in July 2004, participants were encouraged to set measurable objectives for their chosen impact theme, identify success criteria, specify the evidence required to assess whether those criteria have been met, and to work out what impact measures they would use. BU and the University of the West of England (UWE) agreed to collaborate in assessing the impact of e-resources within their respective institutions. Following an interim review in November 2004, the final review took place in December 2005.

Online questionnaires targeting all students and academic staff were advertised by email and on the intranet of IHCS. The response rates of 8% of students and 16% of staff are not untypical of response rates to online questionnaires at Bournemouth University (BUIR, 2007), and the response rates to the 2005-6 surveys were broadly similar. Both factual questions and

questions concerning use of e-resources were included, and in each case were available online for approximately one month. Follow-up interviews were then sought with six respondents, in which further questions were asked to clarify attitudes toward, and use of, electronic library resources. Quantitative data gathered from records of e-usage supported the evidence of qualitative impact; the results showed consistent endorsement for the shift to electronic resources from both staff and students. Triangulation with results from the 2004/05 Student Satisfaction Survey further reinforced these conclusions. Results from UWE were broadly similar and corroborated the BU response.

*What's a library? It's so long ago that I walked into the library to look at a hard copy and I'm only next door. Print access is for people who haven't worked out how to access resources online.*

(IHCS staff 2005)

### **Phase Two of the study**

Following the format of the 2004-5 study, the second phase in 2006 surveyed CS and DEC, using the same format of online questionnaires to staff and students, followed by interviews with selected staff. Enthusiasm for electronic resources was widespread amongst staff and students, with many respondents asking for increases in e-resources, especially journal back runs. As with the 2004-5 study the results from quantitative measures of usage supported the findings. This report highlights some of the results from the two years of the survey.

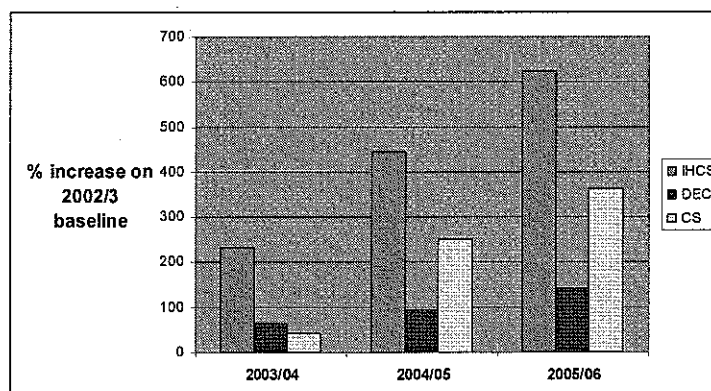
*We need to improve our stock of past issues; in many cases using ScienceDirect we do not have the historic runs which are available electronically but we do have subscription; we need to invest in this urgently to improve our e-journal resource. They are truly fantastic resources which we need to maintain and invest in.*

(CS staff 2006)

### **Quantitative data**

Usage data of online resources is an objective measure which complements qualitative data gathered from the users themselves. There are different ways in which these data can be gathered, e.g. through Athens log-ins, full-text downloads, links out from link-resolvers and e-book accesses. As this data has been collected consistently over a period of time, when linked to the value and importance evidenced in the quantitative feedback, it is possible to use the data gathered to evidence impact on the change in student and staff behaviours, the way that they use e-resources, and the importance they place on them. Management information showed that the use of all e-resources continues to increase year-on-year and that big and/or rapid increases are associated with the introduction of new resources. The Library's heavy investment in e-resources is endorsed by their sharply increasing uptake. Future trends will be monitored by continuing to analyse the management information available and this will be extended whenever possible. In response to these findings, the staff skill mix has been altered to support e-resource developments: informal learning zones have been extended: and print provision has undergone an extensive review. These changes are set to continue alongside the closer alignment of Library and other support services, especially IT and Learning Technologists.

Table 1: Athens logins by year and School



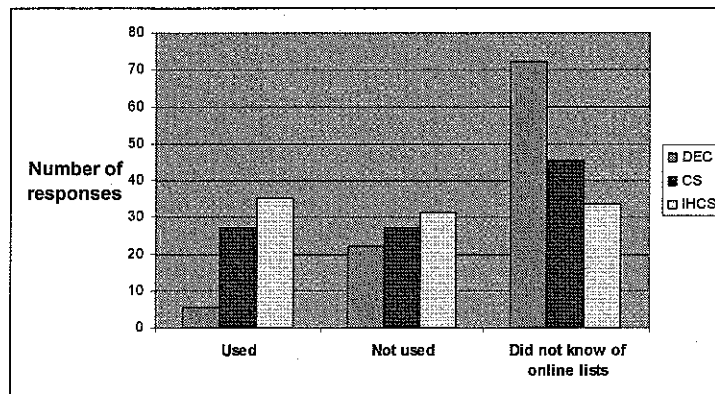
## Qualitative feedback

Evidence about value and impact was used to contextualise quantitative data. The same questions were asked in 2004-5 of IHCS and 2005-6 of DEC and CS. It can be seen that both the quantitative and qualitative feedback, in the responses reported on below, illustrate the growth in use of e-resources.

Two significant findings were firstly 66% of IHCS students surveyed in 2005 claimed to be using e-resources more than in the previous year, and in 2006, 76% of students in CS and 70% of students in DEC claimed to use e-resources more. Secondly 66% of staff from IHCS in 2005 claimed to be using e-resources more than in the previous year and in 2006 the percentage for staff in CS was 75% and for DEC 53%.

The responses to individual questions asked of the students give further indication of the level of acceptance of e-resources, and the recognition of their flexibility. In answer to the question *"From where did you access your most recently used resource?"* between half and three-quarters of student respondents accessed their most recently used e-resource from home: 50% (DEC), 67% (CS), 72% (IHCS). These responses justify the library's commitment to investment in extensive off-campus e-resource authentication. Future service planning will continue to take account of remote/domestic access, and help facilities will be devised with off-campus access in mind. A rather different set of responses came in answer to the question *"Have you used the online reading lists to access e-resources?"* A recent development within Bournemouth University's portfolio of e-resources has been the inclusion of course reading lists on the web site. IHCS took the step of linking when they could to their School intranet, and this led to over 70% knowing about the lists and 35% using the lists. This contrasts with the experience of DEC and CS where reading lists were not linked at the time of the survey to their intranets or BU's Virtual Learning Environment (VLE).

Table 2: Online reading lists: knowledge and use



Responses to this question identified the need to further promote this service. This has been achieved by the inclusion of the reading lists at unit level in the University's new universal VLE , known as myBU. Embedding reading lists in myBU should enable more effective updating and enhance the relevance of reading lists as a route to all learning resources whatever their format. In 2006/7 it will be important to include questions that may give some further insights into the utility of the reading list as a route to the learning resources recommended by academic staff.

Students were asked about the relevance, ease of access, ease of use, range of resources available and confidence in the use of e-resources. All five graphs share a broadly similar overall shape; satisfaction with the range of resources brings out the greatest differences between the Schools, which probably reflects the different range of resources available for the different disciplines. In every case there is a peak at 2 on the Likert scale (where 1= very satisfied).

Table 3: Satisfaction with the relevance of e-resources



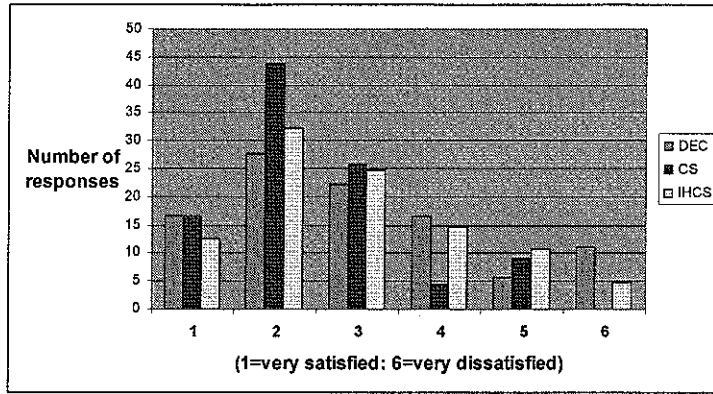


Table 4: Satisfaction with the ease of access of e-resources

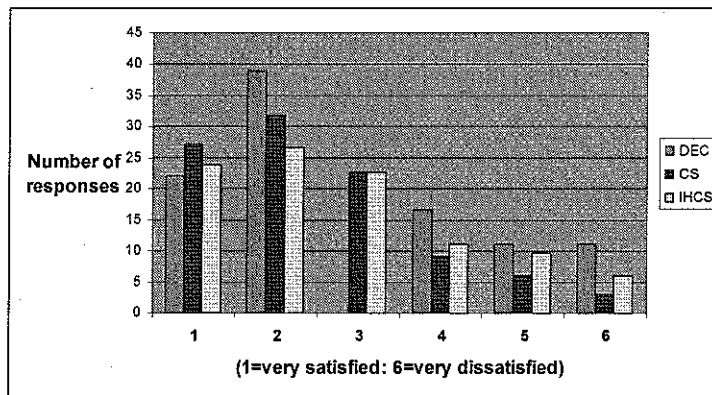


Table 5: Satisfaction with the ease of use of e-resources

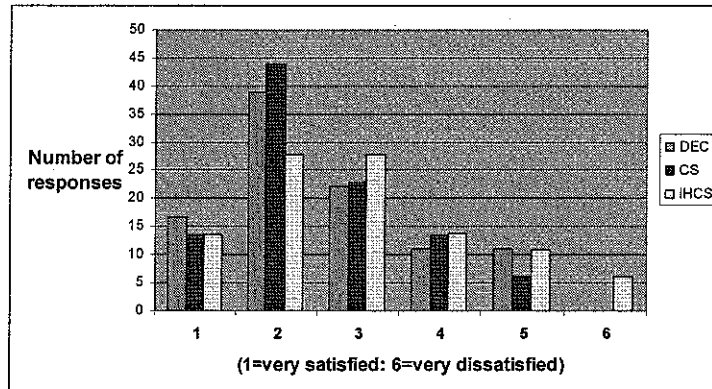


Table 6: Satisfaction with the range of e-resources

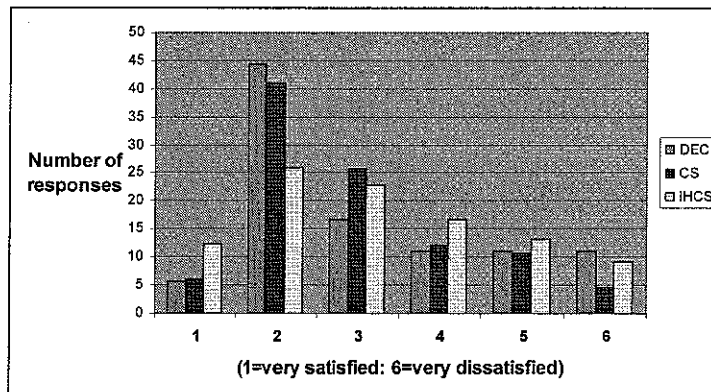
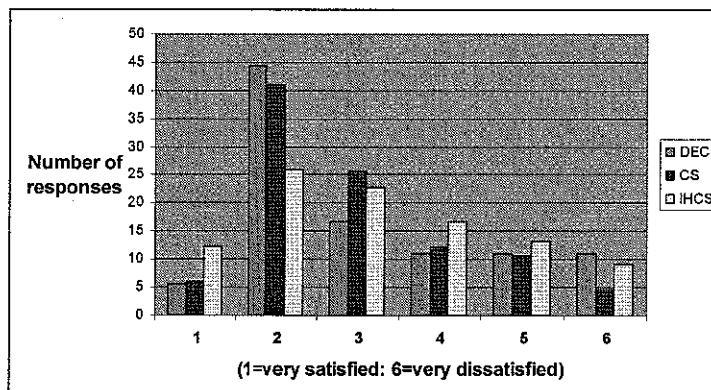


Table 7: Confidence in use of e-resources



Qualitative comments increased understanding of what some of these scores meant to individual respondents. Of 127 free-text responses from students, nearly all could easily be grouped under three broad categories:

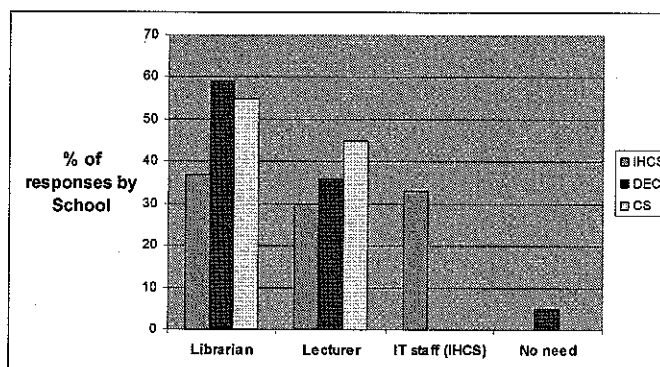
1. praise and approval of the existence of e-resources and/or the ability to access them remotely;
2. some dissatisfaction with current access and/or searching capability of e-resources;
3. requests for greater full-text access to journal articles.

The opportunity given to the staff and students to articulate what would make e-access even better has given a useful insight into the ongoing training and development needs of both groups.

To summarise, these responses show that impact has reached the point where students recognise the importance of electronic resources to their learning experience and they recognise the need to develop skills to exploit them more fully. Being able to retrieve full-text articles to the desktop is highly valued and expected, rather than exceptional. Electronic resources are seen as having a positive impact, and the study has enabled the respondents to express their satisfaction and their aspirations for improvements. Several responses identified both satisfaction and a further need. To respond to this, library staff need to ensure that training sessions address issues of developing access skills, and where appropriate, give feedback to third party providers about the complexity of their product interface. Finally, wherever possible links to resources should be integrated into myBU.

Staff responses to individual questions showed the importance of the academic process in exploiting the best use of the e-resources. Responses to the question "*Who should introduce students to e-resources?*" are shown in the table below.

Table 8: Who should introduce students to e-resources?



Students must be actively introduced to quality e-resources and taught how best to use them, and library and academic staff must work together to ensure that both the range of e-resources, and best practice in using them, are fully shared. Interestingly only one respondent out of all three Schools believed there was no need to introduce students to e-resources.

Free text answers to the question “*How, in your opinion, might e-resources be better integrated into the curriculum?*” suggested four main themes.

1. academic staff should be aware of, and confident with, e-resources and use them as an integral part of the teaching process;
2. assignments need to be designed to require the use of e-resource skills;
3. all teaching rooms should have functioning internet access to enable demonstration of e-resources;
4. students should receive an initial introduction to e-resources, which is then continually reinforced by academic staff in the teaching environment and/or library staff in targeted skills sessions.

These themes influenced the development of myBU, for example by integrating reading lists, which include both print and electronic resources, together with a simple mechanism for keeping them up to date. myBU is also an access point for information literacy tools to

enhance the search for quality information. It has also enabled the start of an electronic reserve collection of high demand journal articles and book chapters, scanned using the CLA licence which are then integrated within the relevant units

All staff questioned recognised e-resources as essential and valuable. This in itself is evidence of their impact, since only a few years ago they would have been seen as complementary, or even subordinate, to print resources.

*The biggest opportunity in a long time. Now a small-sized University can compete with the best.*

(CS staff 2006)

*I expect the students to use the electronic resources extensively in their research so in that respect they are essential.*

(DEC staff 2006)

*E-resources have increased my functionality. They have added value to my role as an academic and made me a better teacher and researcher.*

(IHCS staff 2005)

Staff were also asked about spending an increasing proportion of the School library budget on e-resources. Whilst staff were positive about this, recognising the benefits of e, they also acknowledged the continuing importance of print resources for material only available in that format. Staff also expressed opinion and personal belief that serendipity and 'reading around' a topic is easier and more convenient with print, and that the printed book is easier to handle and access. E-resources should be considered as part of a continuum of resource provision, and the advantages of e-resources should be shared and optimised. The weaknesses need to be recognised and minimised, and it proposed that the 2006-7 impact project will look at the changing role of print learning resources for BU staff and students.

Action Research led to further triangulation with the Student Satisfaction Survey (SSS) which has been conducted annually on selected student populations by Academic Services on behalf of the University. The following results obtained from the 2004/05 Survey reflect the high levels of apparent satisfaction with e-resource provision revealed by the impact study:

Satisfaction with e-resources in your subject area

Total response 67.1% rated 'satisfaction' (levels 1 to 3)

Satisfaction with info on library web site

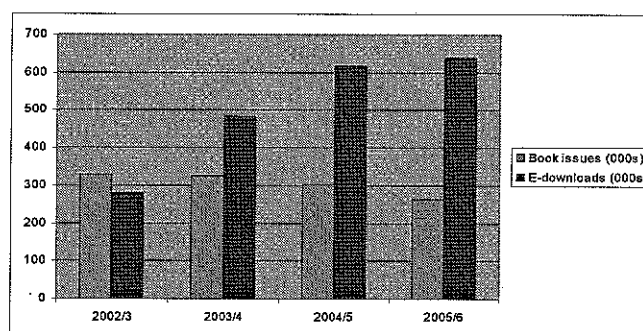
Total response 63.4% rated 'satisfaction' (levels 1 to 3)

Satisfaction with access from off campus

Total response 60.1% rated 'satisfaction' (levels 1 to 3)

As well as triangulating to the SSS, the findings of this study are reflected in an analysis of book issues and e-downloads between 2002 and 2006. The following graph shows a steady decrease in the number of book issues and a rather more dramatic increase in the number of e-downloads.

Table 9: Increase in e-downloads matched by decline in print loans



## Conclusions

Action research has proved to be an appropriate methodology for this type of research, as it allows quantitative and qualitative data to be used and learning to occur through action and reflection. Triangulation enables the views of a diverse community of academics and students to be considered alongside data from management information systems.

The uptake of e-resources has increased rapidly and considerably, while book loans have steadily decreased. Satisfaction with the resources is high, while access and usability of these resources are recognised as areas where increased support is needed. Online reading lists have been linked to e-resources, and it is anticipated that this linkage will increase their usefulness to academic staff and students. The relationship between reading lists and resources, whether print or electronic, will be explored in the 2006-7 survey. Off-campus usage is high, and justifies the University's investment both in e-resources and in remote authentication. The impact of electronic resources on the higher education community is already considerable, affecting the way that libraries are resourced, staffed and designed. Continuing changes in accessing and delivering learning and teaching are likely to maintain the momentum for the foreseeable future.

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