

DESIGN AND IMPLEMENTATION OF A PERIODICALS VOTING EXERCISE AT LEEDS UNIVERSITY LIBRARY



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The design and implementation of a full-scale periodicals voting exercise at the University of Leeds are described. A Microsoft Access database was used to manage the exercise. The database provided the ability to produce the voting forms, assign journals to fund codes, identify cancellations, and produce reports to present the results to academic departments. The exercise resulted in a major overhaul of the Library's periodical subscriptions.

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Introduction

Leeds University Library has recently carried out a full-scale review of all of its periodical subscriptions by undertaking a periodical voting exercise (PVE) for academic and research staff. Descriptions of periodicals voting exercises in the literature have tended to concentrate on small-scale, subject specific exercises [Lambert, 1996¹; Aidley, 1992²] or have emphasised the need for computer programming skills to analyse the data [Horwill, 1987³]. Libraries needing to carry out an all-encompassing review of their journals may therefore have rejected the possibility of conducting a voting exercise on the grounds of the complexity of such an approach.

However, the Library had a pressing need to carry out a periodicals review for a variety of reasons. Primarily, we needed to review periodicals as a consequence of the planned introduction of a new resource allocation model for the library materials budget. A new model was required in order to increase transparency and resolve inequity of spending patterns in the past, enabling us to free up resources to support new programmes and research activities. In order to introduce the new model it was necessary to obtain information about use of journal titles, so that we could establish a baseline of current information provision and cost on a school-by-school basis.

Subscriptions also needed rationalisation in certain areas, in order to bring some academic schools into line with their new, decreased allocations, as a result of the introduction of the new model.

We also needed to review the demand for new journal titles, and to consider the most appropriate method of meeting needs in this area, given the declining buying power of our budget due to high inflationary costs.

The Library used a Microsoft Access database to manage the data associated with the entire exercise. This approach had a number of perceived advantages:

- this would allow a flexible approach to analysing the results without requiring library staff to acquire programming skills
- the software is on the desktop of all library staff, so the task of analysing the results and producing reports could be distributed among the Library's Faculty Team Librarians
- the information gained in the PVE would then be available in a database that could be queried for other purposes (e.g. creating targeted lists of users to raise awareness of resources)

Methodology

Before embarking on the PVE, the Library undertook a literature review in order to obtain a picture of how such exercises had been conducted in other institutions that have undertaken a review of their periodicals holdings (references are given at the end of this article). As a result of this review, we arrived at the following methodology for our own exercise:

- The exercise would be open to all academic and research staff, and research students.
- Each voter would be sent a voting form listing the titles held in their subject area in the Library. Voters could also request voting forms for other subject areas, if they had interdisciplinary interests.
- Voters would have 100 votes to spread across as many or as few titles as they chose.
- Voters would be able to vote for existing titles, and also for new subscriptions.
- Voters would also receive a separate listing of bibliographic databases and electronic journal packages, for which they could also express an interest. These would not be constrained within the 100 votes.

The results were to be used as the starting point for negotiation with academic schools.

A pilot exercise was held with two academic schools to test the methodology for the exercise. The pilot was open to all academic, research and teaching staff, and PhD students. As a result of the pilot exercise we made two important

decisions about the methodology of the exercise. Firstly, we decided to exclude research students from the exercise, as their response rates in the pilot had been extremely low. It was agreed that their research supervisors should instead be encouraged to cast their votes with their research students in mind.

Secondly, as a result of the pilot, we also agreed that we would limit the maximum number of votes that could be cast by one voter for any title to 20. This was in an attempt to counteract the effects of tactical voting, where individuals or research groups would place a large number of votes on a small number of titles, thus skewing the overall result for the department in their favour.

A further decision was also taken that we would reject any requests for new journal subscriptions where a journal was already available online through an electronic journals package deal. The Library had recently taken out subscriptions to a number of package deals, including Elsevier Science Direct⁴ and the Kluwer NESLI deal⁵. It was felt that these packages represented the most cost-effective way of providing access to the titles from these publishers where we did not already have a print subscription, and that additional print subscriptions should therefore be discouraged.

The Exercise

Design of the Access Database

The first stage in designing an Access database is deciding what information needs to be recorded and how these should be structured into tables. It is useful to think in terms of modelling a process, and considering what entities needs to be modelled, and how they are related.

In the PVE, the primary entities that needed to be represented were the journals and the voters. These were related by the votes cast. This gave an initial design for the database shown in Figure 1.

In Fig 1, JournalID, VoterID and VoteNumber are unique record numbers generated automatically by Access. The dots at the end of 'relationships' lines indicate the 'many' end of a 'one-to-many' relationship. i.e. any given VoterID will occur only once in the VoterDetails table, but many times in the VotesCast table (once for each journal that the voter votes for). Similarly any

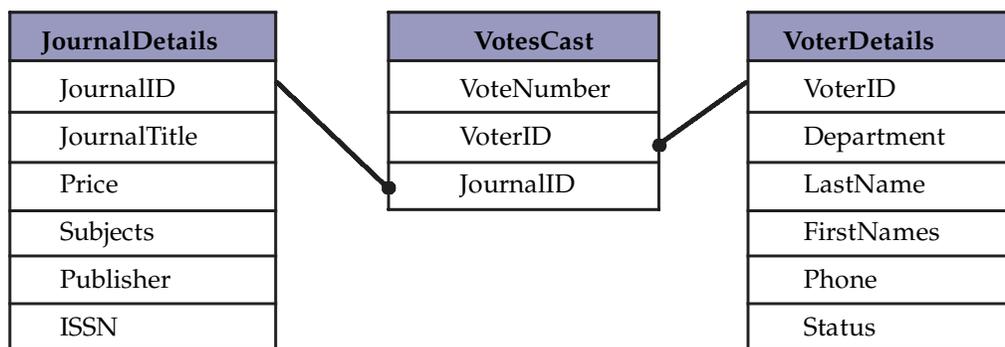


Figure 1. Initial database design showing tables for journals, voters and votes and the relationships between them.

given JournalID will occur only once in the JournalDetails table but may occur many times in the VotesCast table (once for each voter who votes for it).

The properties of each field were set individually. Thus the Price field was a currency field, ISSN took 4-4 values, and so on. Where possible, fields were constrained to take values from a list of possible options. This was intended to reduce the likelihood of data entry errors, which would have made later analysis difficult. For example, the Department field in the VoterDetails table was constrained to a list of University departments. This meant that we could be sure that, for example, Physics and Astronomy was always entered as such, and not as Physics & Astronomy, Physics or Phys. The JournalDetails table also included a number of Yes/No fields to indicate where we had duplicate subscriptions, where a title was bought as part of a package and so on.

Separate, similarly designed, tables were created to record details of the bibliographic databases, electronic journal services and the votes for each.

Journal data was imported into the database from Excel spreadsheets, which were already maintained on a site-by-site basis. In future exercises, data will probably be imported from the Library's Innovative (III) library management system. Data about bibliographic databases was imported from the Library's ROADS database⁶ with prices added from Innovative. Data about electronic journal packages was entered by hand.

Production and Distribution of Voting Forms

Voting forms were produced using an Access report, drawing on a query that produced a

subject-based subset of the JournalDetails table. Leeds University Library uses an in-house classification scheme, with journals shelved in broad subject areas as recorded in the Subject field of the JournalDetails table. Rather than having a separate report and query for each subject, a flexible query was written. Access allows conditions placed on queries to be supplied by the user when the query is executed. For example, a Subject condition of:

Like [Enter (start of) subject – e.g. general biology] & “*”

causes a dialogue box to appear with a caption given by the text between the square brackets. Whatever the user types needs only match the start of the text in the Subject field – this is achieved by using Like ... & “*”.

In this way, just a single report and query were needed to produce all the voting forms. Libraries that use a standard classification scheme could amend this to prompt the user for start and end ranges in the scheme.

Voters were sent forms for one or more subject areas appropriate to their department, together with a form for bibliographic databases and one for electronic journal services. Faculty Team Librarians liaised with their departments in order to obtain information about which voting forms to send to voters. Some departments asked for voting forms for a large number of subject areas – the School of English, for example, asked for voting forms for some 30 subject areas to be sent to all staff in the School! This reflects the wide range of interests of staff in the School. However, it did result in some very large forms being sent out, with consequent information overload problems for staff in the School. In the event, staff

in the School voted across some 19 different subject areas; so for future exercises it would be possible to provide a more restricted set of voting forms, which reflected this.

All voting forms were also converted to PDF files using Adobe Acrobat Distiller. These were mounted on the Library's web site so that voters could download voting forms for any other subject areas that they required. The voting forms also included space at the end to write in votes for new journal suggestions or for journals on other subject lists.

Voting forms were distributed using the University Media Services, who were able to use their database of staff to undertake a mail-out on our behalf.

Data Capture

Completed voting forms were entered into the database by temporary clerical staff employed for this purpose. As these staff had little or no library knowledge, the voting forms and the database were designed to make data entry as simple and error-free as possible.

A data entry form was developed for entering the details of the voters and their votes (Figure 2).

Once the voter's details had been entered into the form, the only data that needed to be entered were:

- for journals, JournalID and number of votes cast (the voting forms had been designed so that the Journal ID and number of votes cast were adjacent)

Figure 2. Data entry form for voter details and their votes



- for bibliographic databases and electronic journal services, DatabaseID or EJPackID

A form was also created for the entry of additional journals into the database. These could either be new suggestions, or current subscriptions that had been missed in compiling the original database.

It was obviously important to ensure that the votes on the forms were accurately entered into the database. The data entry form included several data validation and data verification features:

- Department field was constrained to values in a pull-down list
- the Access-generated VoterID automatically appears in the votes sub-forms
- Check buttons to run reports on the voter's votes and associated Amend buttons to open the underlying tables for corrections

In particular, the check button enabled clerical staff to check that the votes on a form did not add up to more than 100 (as this was the maximum number of votes that any voter could cast). Where voters had cast more than 100 votes, these forms were passed back to Faculty Team Librarians, who contacted the voter and asked them to reduce their votes accordingly.

The journals data included many duplicated titles, indicating duplicate subscriptions held at different Library sites. These were only removed after voting, so that at the voting stage staff could find titles in the lists where they would expect to find them. After all the votes had been input, queries were written to locate titles that occurred in the JournalDetails table more than once. Unless these happened to be different journals with the same title, all the votes were transferred to a single record for the journal (the one that already had the most votes, so that we had a measure of which was the most popular location for the journal).

Many of the 'new' journals added by hand had incorrect titles – academic staff tend to have a fuzzy approach to journal titles! Library staff checked the database every day or so during data entry and amended journal details where necessary.

After all data entry, and central cleaning of the data in the database, voting forms were returned to the appropriate Faculty Team in the Library.

These were then checked against reports of individual and/or departmental votes generated by Access. As all the data that had been entered was numerical (id numbers, and numbers of votes) transcription errors such as transposed digits were easy to make, but were easy to spot. For example, a report that shows a historian voting for *Surgical Oncology* (3816) rather than *International History Review* (3861) is hard to miss!

Analysis of Data

A major area of interest for the Library was the extent to which staff made interdisciplinary use of journals. In previous journal cancellation exercises, the Library had been in the position of cancelling titles without consulting all the major users of a title (because we did not always know which departments were the major users of a title). One perceived benefit of the PVE was that it would provide us with the data to resolve this problem. Various queries were written to identify interdisciplinary journals:

- journals with more than x votes, that were voted for by more than y departments
- journals with more than x votes, that were voted for by more than y departments, with at least z votes coming from one department
- as above but limited to departments in one or two faculties

We found that a large proportion of journals had been voted for by more than one department, but in most cases one or two main departments could be identified as the key stakeholders in a subscription. The following methodology for assigning fund codes was adopted:

- where >80% of votes were from one department, 100% of the cost was charged to that department's fund
- otherwise, the cost was split pro-rata between departments who gave at least 20% of the votes for that journal

In cases where many departments voted for a journal in relatively small numbers, some or all of the cost could be met from a top-sliced fund.

All 6,400 titles in the database were assigned a fund code that indicated the fund to which the subscription would be charged. In many cases, the cost of titles was split against a number of different funds using the ratio shown above. A query based on this ratio was run to enable most

of the fund codes to be assigned automatically.

Similar techniques were used to assign 'cancel' and 'reject' funds:

- Journals that received no votes were assigned 'cancel'.
- Suggested new journals that were published by Elsevier, Kluwer, Blackwell Science and so on were already available to voters online and were assigned 'reject'. (Voters had been told not to vote for new titles from these publishers as they have access to the online packages.)

We were then in a position to review the results and compare them against the departmental allocations calculated for the new Library Resource Allocation Model.

Distribution of Results

One of the perceived benefits from implementing the PVE as an Access database was that it would allow Faculty Team Librarians, Team Leaders and senior managers to produce their own reports, rather than these having to be produced centrally.

An important aspect of the database design was therefore its user interface. The normal method to run queries and reports and to view tables in Access is the main Database window. This is really a design view, and can be particularly intimidating to those with no experience of Access.

Access has two features that allow customised user-interfaces to be designed: switchboards and custom menus. Both of these techniques were employed in the PVE database, so that staff could use whichever method they found more convenient. Switchboards are used to provide a form containing buttons that can open a sub-switchboard or run a query or report. Likewise, a hierarchy of menus was used so that each menu entry either led to a submenu or ran a query or report.

The number of ways in which the data could be analysed gave rise to a proliferation of buttons and menu items. A separate menu was therefore added which included just those reports to be printed off by Faculty Team Librarians and sent to academic departments. These reports were distributed together with a commentary and recommendations written by the team librarian. This ensured that the final output of the exercise

was consistent, even though the work was distributed.

The final part of the exercise was to discuss the results with each department, and reach an agreement on the periodicals subscriptions to be taken. Each team librarian met with key staff from their departments (variously, the Library Departmental Representative, Head of Department and Head of Research) and discussed the results. Sometimes a number of meetings were required to reach a satisfactory conclusion, but many meetings were straightforward. Departments were given advice in a number of key areas:

- The option to cut back on their monograph expenditure if necessary, to free up money for new journal subscriptions.
- Advice to consider cancellation of all titles with zero votes and many of the titles that had received very few votes.
- Advice to carefully consider the value for money of any potential new subscriptions.
- Advice on the availability of a document delivery service (through the British Library Inside service) which they could use as an alternative to costly subscriptions.

There was surprise at the extent to which departments were prepared to make decisions on journal subscriptions based on cost. A significant number of new titles were rejected on the grounds of expense, especially where only one member of staff had made the journal suggestion. Departments were also, on the whole, happy to accept an online-only subscription as an alternative to beginning a new print subscription.

Summary of Results

Overall, 64% of staff voted in the exercise. This was consistent with response rates reported by other institutions that have held similar exercises.

1071 journals received zero votes. Of these, 893 titles were cancelled. A further 179 journals that had received few votes were also cancelled, and 336 new print subscriptions were taken out.

Although staff had specifically asked departments not to make new suggestions where a title was already available online, a large number of voters disregarded this request. The decision was made not to take new print

subscriptions where a title was already available online as part of a larger package. Departments were happy to accept this approach, even though individuals had voted for these titles. In effect, this presented us with an opportunity to raise awareness about electronic resources, as every voter who requested a title already available online was contacted and informed that access was already available to them, and told about key benefits, such as access to back issues online.

A number of new electronic journal package deals were also taken as a result of the exercise, in preference to individual paper subscriptions.

Some new subscription suggestions were rejected, for a variety of reasons. The main grounds were because a department's budget would not stretch far enough to enable them to take on the new subscription, or because they felt that the title could not be supported on grounds of cost. A number of current and new subscriptions from one particular publisher were rejected as a result of high inflation rates.

The exercise also gave the Library the opportunity to review policy on gifts and exchanges. Very few of the large number of titles that were received as gifts or exchanges received any votes. These titles are all received free, or at very low cost. However, they do represent significant costs to the Library in other ways (for example – staff time in handling, processing, binding, space). The Library is now reviewing exchange agreements with a view to cancelling many of these arrangements. These titles will also be earmarked for disposal or removal to store in future stock management programmes.

Conclusion

Overall, the exercise has been a huge success. Previous journal cancellation exercises at Leeds had resulted in bad publicity for the Library within the University and ongoing political problems with various disgruntled departments. However, the PVE has been widely accepted across the University. Very few complaints have been received – about either the process or the results. The Library has been able to take the opportunity to review needs across the board, and then take steps to meet those needs in a cost-effective and sustainable way. Savings have been made by cancelling little-used titles, and these

have then been fed back into the materials budget in the form of new subscriptions or electronic package deals.

The PVE has also had a number of spin-off benefits. In particular, the Library has succeeded in making academic staff more aware of the cost of journal subscriptions, and more prepared to make decisions based on cost. Departments now have a greater awareness of what their budgets are, and of what this will actually buy them in terms of number of subscriptions. They are also more prepared to share in the cost of interdisciplinary titles.

Departments are also becoming more used to the concept of an electronic-only subscription to a journal, and more willing to accept this as a valid alternative to a print subscription. This shift in attitudes will have a significant impact on our ability to innovate in this area in the future.

Finally, the exercise has provided the Library with a valuable knowledge base about the journal needs and interests of users. The Library is already using this as a tool for promotion and for raising awareness. For example, when a journal goes online it is now possible to look up the people who voted for it on the database and send them a note to let them know of its availability. The database will also be used to manage future

demand for new subscriptions. Departments will be able to review their journal lists when demand for a new subscription arises, and make decisions about cancellation of existing subscriptions based on numbers of votes.

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